

**HEALTH AND SAFETY
FOR
HAIR CARE AND BEAUTY
PROFESSIONALS**

A Curriculum on Hazards at Work

California State Board of Barbering and Cosmetology

**Labor Occupational Health Program
Center for Occupational and Environmental Health
University of California at Berkeley**



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LOHP is an occupational health and safety education project, affiliated with the Center for Occupational and Environmental Health at the School of Public Health, University of California at Berkeley.



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FOREWORD

The California State Board of Barbering and Cosmetology is very proud to provide instructors in the field with our newly developed curriculum, **Health and Safety for Hair Care and Beauty Professionals**. This curriculum, the first of its kind not only in California but in the United States, includes up-to-date and topical information important to the well-being of barbers, cosmetologists, and the millions of consumers they serve.

Occupational health professionals from the Labor Occupational Health Program, based at the School of Public Health, University of California, Berkeley, have worked for several years to research, create, test, and revise material for the curriculum. It consists of 16 teaching modules and 10 factsheets covering the safe use of chemicals, Material Safety Data Sheets (MSDSs), safe and correct techniques for work movements (ergonomics), communicable diseases, hazards in the shop and how to minimize them, legal rights and responsibilities, smoking at work, and much more. Most modules will require from 60 to 90 minutes to present.

Although there is a wealth of information in the pages that follow, the curriculum is intended only as a guide and starting point for you, the barbering and cosmetology instructor. Your skills, abilities, experience, and perspectives will allow you to modify and personalize the modules to suit your individual teaching style and the particular needs of your students. The Board will require that you teach this curriculum for a minimum of twenty hours. However, if you and your students find the information exciting and useful, as we hope you will, we encourage you to delve into it as deeply as your interest and time allow.

By using the information they acquire from this curriculum, barbering and cosmetology students will be better able to follow safe practices at work and to have long and healthful careers. It is also our sincere hope that boards and interested professionals in other states will take advantage of the excellent work that went into this curriculum by using it as a model for similar educational programs all around the country.

California State Board of Barbering and Cosmetology
December, 1992

CONTENTS

INTRODUCTION

Overview
Teaching Approach and Methods
How the Manual Is Organized
Preparing to Teach

MODULES

- Module 1: Chemicals and Health/Part 1
- Module 2: Chemicals and Health/Part 2
- Module 3: Chemicals in the Shop
- Module 4: Material Safety Data Sheets
- Module 5: Preventing Chemical Injuries
- Module 6: Protecting Yourself From Hazardous Chemicals/
Part 1
- Module 7: Protecting Yourself From Hazardous Chemicals/
Part 2
- Module 8: Ergonomics: Fitting the Job to the Person/Part 1
- Module 9: Ergonomics: Fitting the Job to the Person/Part 2
- Module 10: Communicable Diseases in the Workplace
- Module 11: HIV/AIDS and Hepatitis B

Module 12: Health and Safety Laws and Agencies/Part 1

Module 13: Health and Safety Laws and Agencies/Part 2

Module 14: Investigating Your Workplace

Module 15: Solving Health and Safety Problems/Part 1

Module 16: Solving Health and Safety Problems/Part 2

APPENDIX: RESOURCE AGENCIES AND MATERIALS

FACTSHEETS

- 1 Shampoos and Conditioners
- 2 Hairsprays
- 3 Hair Bleaches
- 4 Hair Colorings
- 5 Chemical Hair Relaxers
- 6 Permanent Waving
- 7 Manicuring
- 8 Sculptured Nails
- 9 Thermal Hairstyling
- 10 Smoking and Health at Work

INTRODUCTION

OVERVIEW

This manual presents a training program on the health and safety hazards faced by hair care and beauty professionals on the job. It is designed for use in schools of barbering and cosmetology.¹

The manual includes a complete curriculum and teaching guide for instructors. An instructor does not need a background in health and safety to teach the material. Everything is explained in terms which can be understood by non-specialists.

The training program is organized into 16 sessions on various topics. There is a separate module in the manual for each of the 16 sessions. Each session can be taught in 60 to 90 minutes. These are estimates. A module may take more or less time, depending on students' background and interest. Topics cover a wide spectrum, including toxic chemicals, communicable diseases, ergonomics, and health and safety legal rights.

In addition to the 16 modules, there are ten factsheets in the manual. Each factsheet focuses on the hazards involved in a specific work process, such as hair coloring, permanent waving, and applying artificial nails. There is also a factsheet on the hazards of cigarette smoking at work.

The factsheets are to be presented separately from the 16 modules. They are designed to accompany other types of classroom instruction on the various technical processes. For example, when techniques of hair coloring (not related to health and safety) are covered during the regular school curriculum, the instructor may wish to use the factsheet on hazards in hair coloring as supplementary teaching material. In this way, the health and safety lessons which students have learned during the 16-session course are reinforced.

TEACHING APPROACH AND METHODS

The teaching methods used throughout this curriculum are designed to maximize class participation. A variety of participatory learning activities are in-

¹ The term "technician," which is used throughout the manual, refers to both barbers and cosmetologists. Similarly, the terms "shop" and "salon" are used interchangeably.

cluded. They include “brainstorming,” class discussion (questions and answers), and small group exercises. The goal of all these activities is to get technicians to participate in the class, and apply what they learn to their work.

These teaching methods are based on some basic principles of adult learning theory:

- Adults are most motivated to learn when the information has an immediate application to their work or their personal lives.
- Adults retain more when they can apply their own experience to the problems presented in a training session.
- Adults learn 80% of the material presented when they simultaneously *hear*, *read*, and *do* but they learn only 20% of material which they only *hear*.

Teaching methods include:

Brainstorming

“Brainstorming” is a technique used in several of the modules. The class is asked to generate as many ideas as possible on a specific topic. The instructor records all the ideas on the board for everyone to see and discuss. No idea is “wrong” or “stupid.” All ideas should be encouraged.

Class Discussion

Class discussion, using questions and answers, is the most common technique in this curriculum. The instructor asks a question, and the entire class participates by trying to answer it. The instructor guides the discussion, steering people toward the correct answer without actually supplying the answer. The instructor may also add background information and further explanation after the question has been answered.

Here are some tips for leading a successful discussion:

- Don’t read the answers from this manual word-for-word.
- When the manual gives background information to help explain an answer, decide how much of it is relevant to your particular class. Don’t present material that won’t be useful.
- Avoid lecturing for long periods of time.

-
- In explaining answers, add extra information of your own if you want. Make the discussion relevant by drawing on examples from technicians' own experience.
 - Include everyone in the discussion. Address every question to the whole group. Give them a chance to think and respond. Then wait a short time for someone to answer. If no one answers, you might eventually want to call on someone in order to keep the discussion going.
 - Feel free to use different (or extra) questions. The questions in this manual are intended only as suggestions. The more relevant you can make the topic, the more the class will learn.
 - Use the chalkboard often—even when the manual doesn't specifically tell you to. Make lists. Draw pictures and diagrams.

Small Group Exercises

Another technique used in several modules is the small group exercise. There are several types, ranging from case studies to short questionnaires to safety inspections. In a case study, technicians are presented with a problem that they might actually encounter on the job, and are asked to analyze and solve it. The inspection exercise requires technicians to walk around the clinic area at the school and identify specific health and safety hazards.

To conduct any kind of small group exercise, follow the instructions given in the module you are presenting. In most cases, small groups should have no more than five people. Each group should go to a separate room, or a separate part of the main classroom.

The instructions will usually tell you to have each group pick a recorder. The recorder takes notes on the group's discussion of the questions or problems it was given. After the scheduled time for the exercise is up, the entire class comes back together and the recorders report on their group's work.

Feel free to substitute your own exercises if you think they would be more useful.

HOW THE MANUAL IS ORGANIZED

Each module begins with an introductory page. It explains the **OBJECTIVES** of the module's lesson. There is also a chart showing the various **ACTIVITIES** which make up the lesson, and the **TIME** and **MATERIALS NEEDED** for each activity.

Within the modules you will find specific instructions on how to lead each activity, including discussion notes, background information, and details of the various exercises. Most modules also include handouts that you will need to photocopy and distribute to the class. All handouts appear at the end of the module with which they are used. Students should be encouraged to take the handouts home after class, and keep them for future reference.

Throughout the curriculum, instructions and notes to the instructor appear at the left in boxes, and in **bold** type. What you should say to the class is in regular type, in one running column down the right side of the page. Questions that you should ask the class are in **bold italics**. Each question is directly followed by the answer and an explanation.

On most pages, you will find extra space at the left that you can use for your own notes.

These modules were designed to be presented in the order they appear in the manual. Each module builds on what was covered in previous ones.

The last section of this manual is an Appendix with a comprehensive list of **Resource Agencies and Materials**. You can use it anytime to refer people to sources of additional information and help. This list is also distributed to students as a handout during one of the classes (Module #16).

PREPARING TO TEACH

- Read in advance the module you are going to present, and all of its handouts. If you have any questions about the subject matter, use the **Appendix: Resource Agencies and Materials** (at the end of the manual) to find groups or publications that can help.

-
- Prepare any materials you will need for the session. The chart on the first page of each module specifies what you will need. In general, check whether you need to make copies of handouts (outlines, checklists, exercises, etc.) to pass out to the class. Also note that you will usually need a chalkboard or flipchart.
 - Remember that the factsheets in the manual are intended to be used separately from this health and safety training program. Use them, as appropriate, when you teach other barbering and cosmetology material. When you teach a particular technical process, such as shampooing, pass out copies of the related factsheet.

Chemicals and Health/Part 1

OBJECTIVES

After completing this module, students will be able to:

- Identify products commonly found in the shop and salon which contain chemicals.
- Explain why some chemicals may be harmful to workers' health, and what makes them harmful.
- Describe how chemicals can get into the body.
- Explain how much chemical exposure is too much.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION. What products in the shop and salon contain chemicals?	10 minutes	• Chalkboard or flipchart.
II. LECTURE AND DISCUSSION. What makes some chemicals harmful to your health? How do chemicals get into your body?	20 minutes	• Chalkboard or flipchart. • Handout A: <i>Quick Summary</i> .
III. GROUP EXERCISE. How can chemicals get into your body when you serve clients?	20 minutes	• Chalkboard or flipchart.
IV. LECTURE AND DISCUSSION. How much exposure is too much?	10 minutes	• Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION (10 minutes)

- **Explain objectives of this module to the class. (See OBJECTIVES on previous page.)**
- **Introduce this “brainstorming” exercise.**

This lesson is about chemicals in the shop and salon which may harm your health. We'll talk about why chemicals may be harmful, how they may hurt you, how they can get into your body, and how much exposure is too much. But first let's figure out where chemicals are often found on your job.

Many products used by barbers and cosmetologists contain chemicals. Can you name some products that do?

It's not important whether you know the names of the particular chemicals in the product—or even the exact product name. For now, we'll just talk about types of products, like shampoo.

- **List products on the board as students suggest them.**

Possible answers are:

shampoo
shaving cream
hairspray
hair coloring
nail polish
permanent wave solution
chemical hair relaxer
makeup
hair dryer (containing asbestos)
styling gel
artificial nails
conditioner

II. LECTURE AND DISCUSSION (20 minutes)

- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *What are the different forms that chemicals can take?*

Chemicals may be *solids, liquids, gases, or vapors*.

Solids have a definite shape. They include dusts, fibers, and powders, which consist of small particles. An example of a solid is talcum powder.

Liquids are chemicals that flow, like water. An example of a liquid is acetone, which is found in nail polish remover. When a liquid is pumped or sprayed into the air (like hairspray), it may be broken up into small droplets. Then it's called a *mist*.

Gases float and move freely in the air. Often you can't see or smell a gas, but you can still inhale it along with the air you breathe. For example, helium is a gas that is used in balloons. It is lighter than air.

Vapors are like gases because they also float freely in the air. But they come from liquids which have evapo-

(II. LECTURE AND DISCUSSION, continued)

rated into the air. For example, the acetone liquid in an open bottle of nail polish remover can evaporate into the air. The result is acetone vapor.

2. What makes a chemical hazardous to your health?

How hazardous a chemical is to your health depends on several things:

- The *toxicity* of the chemical: Is it toxic or non-toxic? Will it harm the body?
- The *amount* of the chemical you are exposed to (sometimes called *concentration*).
- The *length of time* you are exposed to the chemical.
- Your *individual sensitivity* to the chemical: People react differently.
- The chemical's *interaction* with other chemicals you are exposed to.
- The *way you are exposed* to the chemical: How does it get into your body?

3. What is toxicity?

Toxicity means the ability of a chemical to cause harm to the body. Some chemicals might cause no harm at all, and others might kill you. With some chemicals, even a very small amount can cause harm. These chemicals are said to be *toxic*. With other chemicals, even a large amount will have little or no effect on your health. These chemicals are said to be relatively *non-toxic*.

(II. LECTURE AND DISCUSSION, continued)

4. **What is concentration?**

Concentration is the amount of a particular chemical in the air you breathe, the amount you get on your skin, or the amount you swallow.

In chemistry you learned that concentration is the *strength* of a chemical. When discussing health and safety hazards, concentration refers to the *amount* of a chemical that you are exposed to. The effect that a hazardous chemical has on your health is partly determined by the amount.

5. **Why is the length of time you are exposed important?**

The longer you are exposed, the more of the chemical you get into or on your body. For example, if you spend six hours every day doing chemical services like perms or hair relaxing, you're exposed to chemicals much longer than someone who does chemical services only two hours a day. More of the chemicals get into your lungs and on your hands. That puts you more at risk.

6. **Can different people react to the same chemical in different ways?**

Yes. How your own body reacts to a particular chemical is called your *individual sensitivity* to that chemical. Humans react differently to chemicals. Some people may get sick when exposed to a small amount of a chemical, while others don't get sick until they are exposed to a large amount. Why are some people more sensitive to chemicals? It can be related to many different factors, including:

- **Heredity.** No one knows why, but some people seem to inherit a higher sensitivity to chemicals.
- **Age.** Some chemicals can have more serious effects on the very young or the elderly.

(II. LECTURE AND DISCUSSION, continued)

- **Pregnancy.** With certain chemicals, pregnant women are more at risk. These chemicals may harm the mother, the fetus, or both.
- **Use of alcohol.** Alcoholic beverages may increase the effects of some toxic chemicals on your liver, and possibly on other organs as well.
- **Use of tobacco.** Smoking can harm your lungs' ability to protect themselves against chemicals. It can also increase the health effects of certain chemicals.
- **General health.** People who are already in poor health can be more affected by exposure to certain chemicals. For example, someone with lung disease who breathes in solvent vapors or dusts will probably suffer worse symptoms than someone who is healthy.
- **Gender.** Some chemicals can affect males more than females, or females more than males.
- **Use of medications or other drugs.** Certain chemicals may interact with drugs you have taken and produce effects more serious than the chemical alone would cause.

7. *If you are exposed to more than one chemical, is the health hazard greater?*

Sometimes. It depends upon the particular chemicals involved. There can sometimes be an *interaction* between various chemicals to which you are exposed. You may be exposed to two different chemicals that together produce an effect much worse than either of them alone would produce. For example, smoking cigarettes increases your risk of lung cancer. Being exposed to asbestos fibers (maybe from an old hair dryer) also increases your risk of lung cancer. But if you smoke *and* get exposed to asbestos, you increase your risk of lung cancer much more.

(II. LECTURE AND DISCUSSION, continued)

(Hair dryers manufactured since 1979 contain no asbestos. If you are concerned about using an old hair dryer, contact the manufacturer for information.)

8. How do chemicals get into the body?

There are three main ways that chemicals can get into the body. These are sometimes called *routes of exposure*. They are:

- **Breathing.** Once you breathe a chemical into your lungs, it can either stay there or be carried in your bloodstream to other parts of your body.
- **Skin and eye contact.** Some chemicals can harm the skin directly. They can cause burns, irritation, rashes, or dermatitis. Examples are some of the chemicals in hair relaxers and perms.

Some chemicals can pass right through the skin and enter your bloodstream. If your skin is cut, cracked, or dry, chemicals can pass through into the bloodstream even more easily.

Some chemicals may seriously burn or irritate your eyes. Your eyes may be at risk if chemicals splash, if you touch your eyes when your fingers have chemicals on them, or if chemicals produce vapors which get into your eyes.

- **Swallowing.** Most people don't swallow harmful chemicals on purpose. But you could *accidentally* swallow them if you eat, drink, or smoke after you've been working around chemical products. (Your food, drink, cigarettes, or hands might have chemicals on them.) So, if you have been working with chemicals, it's important to leave your work area when you have lunch, a soft drink, or a cigarette. And always wash your hands thoroughly after handling any chemical product.

We will discuss ways to protect yourself from hazardous chemicals in another class session.

III. GROUP EXERCISE (20 minutes)

- **Conduct this “brainstorming” exercise for 20 minutes.**

Now let's discuss how chemicals can get into your body when you provide specific services to clients. In this exercise, think about the steps you take when performing a service, and how you might be exposed to chemicals during each step.

- **Make five columns across the board:
1) PROCESS, 2) BREATHING, 3) SKIN CONTACT, 4) EYE CONTACT, and 5) SWALLOWING.**
- **Choose at least four common barbering and cosmetology services that use chemicals. List them down the PROCESS column on the board.**
- **For each process, ask the class how chemical exposure could occur through BREATHING, SKIN CONTACT, EYE CONTACT, or SWALLOWING.**
- **Write their answers on the board and discuss them.**
- **A completed list should follow this sample outline:**

(III. GROUP EXERCISE, continued)

PROCESS	BREATHING	SKIN CONTACT	EYE CONTACT	SWALLOWING
Shampoo	<ul style="list-style-type: none">• Vapors when opening bottle or applying	<ul style="list-style-type: none">• When applying• When rinsing	<ul style="list-style-type: none">• Splashes• Touching eyes	<ul style="list-style-type: none">• If on hands, food, drink, or cigarettes
Perms	<ul style="list-style-type: none">• Vapors when opening bottle or wrapping hair in solution	<ul style="list-style-type: none">• When applying• When rinsing	<ul style="list-style-type: none">• Splashes• Touching eyes• Vapors from perm solution	<ul style="list-style-type: none">• If on hands, food, drink, or cigarettes

IV. LECTURE AND DISCUSSION (10 minutes)

- **Continue the Lecture and Discussion.**
- **Ask the class the additional questions below, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

9. What is a “safe” level of chemical exposure?

It is safest to keep exposure to any toxic chemical as low as possible. But because some chemicals are much more toxic than others, it is important to keep worker exposure to them especially low.

10. Does the law say how much of a chemical you can be exposed to at work?

For many chemicals, the law sets a maximum amount you can be exposed to on the job. In California, Cal/OSHA sets these limits, which are called *Permissible Exposure Limits (PELs)*. They have been set for hundreds of different chemicals. But PELs have not been set for a lot of chemicals, including some used in barbering and cosmetology.

Some chemicals may have an effect on you even if the level is below the PEL. So always keep exposure as low as possible.

11. Is there any way to tell if you are being exposed to chemicals?

Yes. Here are some things to watch for:

(IV. LECTURE AND DISCUSSION, continued)

- **Odor.** If you smell a chemical, you are breathing it in and it's getting into your body. But remember, not all chemicals with odors are toxic. The chemical may have a strong odor and still be harmless. On the other hand, some very toxic chemicals have no odor at all, so you won't notice them. *Don't rely on smell to warn you!*
- **Taste.** If you breathe or swallow a chemical, it may leave a taste in your mouth. But once again, not all chemicals which leave a taste are toxic, and some toxic chemicals have no taste. *Don't rely on taste!*
- **Particles.** You may cough up mucus with particles in it. Or you may blow your nose and see particles. Then you know you have breathed some chemical in particle form. But with most chemicals, you won't see such particles.
- **Surfaces.** If you see dust, powder, or mist collecting on surfaces in your workplace, they came from the air and you were probably exposed to them. Watch for them on tables, chairs, shelves, and even on your own hair and clothes.
- **Symptoms.** You may experience symptoms which might be caused by chemicals. These can include tears in your eyes, a burning feeling on your skin, irritation of your nose or throat, dizziness, or a headache. Of course, many of these symptoms may be caused by the flu or other diseases, but they can also be clues to chemical exposure at work. Especially if your co-workers have similar symptoms at the same time, it may mean that you're all being exposed to a toxic chemical. If your symptoms get worse near the end of your work shift, or if they are better when you're away from work, they may be caused by chemicals on your job.

The best way to tell for sure if you are being exposed on the job is *air testing*. Professionals can use special instruments to find out what chemicals are in the air, and how much of each chemical there is.

(IV. LECTURE AND DISCUSSION, continued)

- **End the class.**

This is the end of the first part of our discussion of Chemicals and Health. In the next class, we'll continue with this subject, and we'll focus on some particular health problems that chemicals can cause, especially chemicals which technicians use.

Handout A

Chemicals and Health/Part 1

QUICK SUMMARY

Many products used by barbers and cosmetologists contain chemicals. Some of these chemicals may harm your health.

Examples of products in the shop or salon which contain chemicals are: shampoo, shaving cream, hairspray, hair coloring, nail polish, permanent wave solution, chemical hair relaxer, makeup, hair dryer (containing asbestos), styling gel, artificial nails, and conditioner.

Forms that chemicals take

- **Solids**—have a definite shape. Solids include dusts, fibers, and powders. (Example: talcum powder.)
- **Liquids**—flow, like water. (Example: acetone). **Mists** are sprayed liquids. (Example: hairspray.)
- **Gases**—float in the air. Gases often can't be seen but they can be inhaled. (Example: helium gas.)
- **Vapors**—float like gases but come from liquids that have evaporated into the air. (Example: acetone vapor from nail polish.)

How hazardous a chemical is depends on:

- **Toxicity**—the ability of the chemical to cause harm. Some chemicals are very toxic (even a small amount can cause harm), and some are relatively non-toxic (even a large amount has little or no harmful effect).
- **Concentration**—the amount of the chemical that you are exposed to (either by breathing it, getting it on your skin, or swallowing it).
- **Length of time**—how long you are exposed to the chemical. The longer you're exposed, the more risk to your health.

(see next page)

- **Individual sensitivity**—how your own body reacts to the chemical. People react differently to chemicals. Some get sick when exposed to a small amount of a chemical, while others don't get sick until they are exposed to a large amount. People's reactions can be related to heredity, age, pregnancy, use of alcohol, use of tobacco, general health, gender, and use of medications or other drugs.
- **Interaction**—when chemicals combine with each other. If you're exposed to more than one chemical, there can sometimes be an interaction that produces an effect much worse than either chemical alone.
- **Way you are exposed**—how the chemical gets into your body. Sometimes called the *route of exposure*. Some chemicals are more dangerous if you breathe them in; others are more dangerous if you get them on your skin. (See section below.)

A chemical can get into your body by:

- **Breathing.** The chemical can get into your lungs and then travel in the bloodstream throughout your body.
- **Skin and eye contact.** The chemical can directly damage your skin or eyes, or can be absorbed through the skin into your body.
- **Swallowing.** You might swallow the chemical accidentally by eating, drinking, or smoking when working with a chemical product.

Exposure limits

- When working with any chemical product, keep your exposure as low as possible, especially for very toxic chemicals.
- For many chemicals, the law sets a maximum amount you can be exposed to on the job. In California, Cal/OSHA sets these limits, which are called *Permissible Exposure Limits (PELs)*. They have been set for hundreds of different chemicals. But PELs have not been set for a lot of chemicals, including some used in barbering and cosmetology. Some chemicals may have an effect on you even if the level is below the PEL. So always keep your exposure as low as possible.

(see next page)

Things to watch for:

- **Odor.** If you smell a chemical, you're breathing it in...but some chemicals have no odor at all.
- **Taste.** If you breathe or swallow a chemical, it may leave a taste...but some chemicals have no taste.
- **Particles.** If you see particles in your mucus, you've breathed in chemicals...but with most chemicals, you won't see particles.
- **Surfaces.** Watch for chemical dust, powder, or mist collecting on surfaces, hair, or clothes. If you see any, you've probably been exposed to the chemical.
- **Symptoms.** Watch for nose, throat, and eye irritation; flu-like symptoms; headaches; or dizziness. They *might* be the result of chemical exposure. See if your symptoms are worse at work, and whether co-workers have them too.

Air testing

Professionals can test the air at work with instruments to see what chemicals are there, and how much of each chemical there is.

Chemicals and Health/Part 2

OBJECTIVES

After completing this module, students will be able to:

- Discuss the difference between *acute* and *chronic* health effects.
- Identify some health problems caused by chemicals.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	5 minutes	• Chalkboard or flipchart.
II. GROUP EXERCISE. What are some health problems which can be caused by chemicals?	10 minutes	• Chalkboard or flipchart.
III. LECTURE AND DISCUSSION. What health effects might you get from chemical products used in the shop?	45 minutes	• Chalkboard or flipchart. • Handout A: <i>Quick Summary</i> .
Total Time: 1 Hour		

I. INTRODUCTION (5 minutes)

- | |
|--|
| <ul style="list-style-type: none">• Explain objectives of this module to the class.
(See OBJECTIVES on previous page.) |
|--|

As you know, there are many dangers on your job. You can get cut, fall, or have something fall on you. You can be injured by a fire or explosion. You can get a burn or electric shock. These are called *safety hazards*. With safety hazards, you usually get injured right away, and it's usually pretty obvious what caused your injury.

But there's another kind of hazard at work. Examples of *health hazards* are exposure to harmful chemical vapors or dusts, to bacteria or viruses, or to noise, heat, or cold.

Today's class will continue our discussion of health hazards related to chemicals you use at work.

It's often hard to see the connection between your own health symptoms and particular chemicals on your job. That's because:

- Unlike safety hazards, chemicals may cause effects that take a long time to show up. You can develop serious health problems many years after you are exposed to a chemical.
- Some symptoms of exposure to chemicals, like itchy eyes or a runny nose, are so common that it may be hard to figure out if the problem was caused by a chemical or by something else.
- Different people can react in different ways to the same chemical. Some people may notice health effects when they work with the chemical, and others may never have a problem.

Today we'll look at the symptoms you may get when you are exposed to certain chemicals used in the shop. We'll also discuss how chemicals can affect the various organs of your body.

II. GROUP EXERCISE (10 minutes)

- **Begin this “brainstorming” exercise.**

We’re going to list some health problems that might be caused by chemicals. For now, don’t think about the particular chemicals that might cause them, only the health problems themselves. Also, don’t worry now whether it’s likely technicians will suffer from these problems. Instead, include *any* health effect of chemicals which you have heard about on TV, in the newspaper, or in your daily life. Later we will look at the causes of these various health effects, and whether technicians are likely to have these problems.

Who can think of a health problem which chemicals might cause?

- **List health problems on the board as people suggest them.**

Possible answers are:

asthma	dermatitis
skin rash	headache
miscarriage	allergy
dizziness	tiredness
sore throat	runny nose
watery eyes	wheezing
sneezing	stuffy nose
birth defects	cancer

- **After a few minutes, complete the list yourself if students have not suggested all the health problems shown above.**

(II. GROUP EXERCISE, continued)

All the health problems shown on the board can sometimes be caused by chemicals.

Which of these problems do you think technicians could get because of the chemicals they use on the job?

- **Let the class suggest some answers. After a few minutes, explain:**

Virtually *all* of these health problems *might* be caused by products used in the shop. However, some of these effects, like cancer and reproductive problems, are extremely rare.

III. LECTURE AND DISCUSSION (45 minutes)

- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *What is an acute health effect?*

An *acute* effect appears immediately or soon after your exposure to a chemical. Acute effects may be minor, like nose or throat irritation from breathing ammonia. Or they could be serious, like eye damage from a splash of hair relaxer, or passing out from chemical vapors. What all these acute effects have in common is that they happen right away.

2. *What is a chronic health effect?*

A *chronic* effect may take years to show up. Chronic effects are usually caused by regular exposure to a harmful substance over a long period of time. These effects are usually permanent. For example, you may develop asthma after years of inhaling hairspray.

(III. LECTURE AND DISCUSSION, continued)

3. What are irritants?

Chemicals that cause irritation are called *irritants*. They produce an immediate reaction when they come in contact with your skin, eyes, nose, throat, or lungs. Many of the products you use at work contain irritants. For example, shampoos remove the natural oils that protect your skin, allowing your skin to become irritated.

4. What are some symptoms of eye irritation?

The main symptoms are burning, watering, itching, and redness.

5. What are some symptoms of nose and throat irritation?

The main symptoms are a runny nose, a scratchy throat, burning, and itching.

6. What are some symptoms of lung irritation?

The main symptoms are breathing difficulty, shortness of breath, and a cough.

7. What products used in the shop can cause eye, nose, throat, or lung irritation?

Permanent wave solutions, chemical hair relaxers, acrylic nail products, and hairsprays can all irritate your eyes, nose, throat, and lungs. These are just a few of the products that can cause irritation. You may know of others from your own experience.

8. What is an allergy?

An *allergy* is a reaction some people have when they become overly sensitive to a particular chemical. When

(III. LECTURE AND DISCUSSION, continued)

you are allergic to a chemical, you will have a reaction every time you use it, no matter how small an amount you use.

Chemicals that cause allergies are called *allergens*. You are not allergic to such a chemical the first time you use it. You may develop the allergy after using it several times, or it may take years. Allergies develop at different times with different people. Even if a chemical is an allergen, most people will *never* become allergic to it.

9. What are some symptoms of allergies?

The most common symptoms are a stuffy nose, tears in the eyes, sneezing, wheezing, coughing, and an itchy skin rash.

Asthma is one of the most serious allergic reactions. Some symptoms of asthma are difficulty breathing, shortness of breath, wheezing, and coughing.

An example of a chemical that can cause asthma is formaldehyde, which is found in some shampoos and nail products.

10. What is dermatitis?

Dermatitis is an inflammation of the skin, like a rash. You may hear the terms *skin rash*, *contact dermatitis*, or *allergic dermatitis*. These are all forms of dermatitis. "Skin rash" is a general term to describe many forms of dermatitis. "Contact" and "allergic" dermatitis specifically describe whether the dermatitis was caused by *contact* with a skin irritant or by an *allergic* reaction.

11. What are some symptoms of dermatitis?

Symptoms of dermatitis include flaking, dryness, redness, itching, and burning of the skin. Technicians get dermatitis most often on their hands and arms.

(III. LECTURE AND DISCUSSION, continued)

12. How do you get dermatitis?

Dermatitis is usually caused by certain chemicals which get on your skin and irritate it. These skin irritants are the most common cause of dermatitis. Sometimes breathing in a chemical to which you are allergic can also cause dermatitis.

13. What products used in the shop can cause dermatitis?

Permanent wave solutions and chemical hair relaxers can cause dermatitis. So can shampoos. As we saw before, shampoos sometimes irritate your skin because they remove the natural oils that protect it. This skin irritation can lead to dermatitis. These are just a few products that may cause dermatitis. You may know of others from your own experience.

14. What parts of the body make up your central nervous system?

The brain, spinal cord, and nerves make up your central nervous system.

15. What can chemicals do to your nervous system?

Some chemicals can cause headaches, dizziness, nausea, drowsiness, restlessness, and lack of coordination. These effects all involve your central nervous system. They are very similar to the effects of drinking too much alcohol.

Nervous system effects are most likely to be caused by breathing the vapors of certain chemicals. But sometimes the nervous system can also be affected by a chemical absorbed through the skin.

(III. LECTURE AND DISCUSSION, continued)

Examples of chemicals that can cause central nervous system effects are acetone, acetates, and toluene. These chemicals are found in some nail products.

16. What is cancer?

Cancer is the growth and spread of abnormal cells in your body. It is actually a *group* of similar diseases, not just one disease.

17. How might you get cancer on the job?

You can get cancer on the job if you are exposed to certain chemical substances under particular conditions. A cancer-causing substance is called a *carcinogen*. Some examples of known carcinogens are cigarette smoke, benzene, and asbestos.

18. Has cancer been linked to chemicals used in the shop?

Cancer is not very common. Some scientific studies show that cosmetologists, as a group, do have somewhat more cancer than the general population, although it's still rare. The reasons why cosmetologists have slightly higher rates of cancer are not completely known.

It is possible, but not proven, that exposure to chemicals at work might be *one* cause. The great majority of chemicals used in the shop do *not* cause cancer. But a few of these chemicals are *known* or *suspected* to be carcinogens.

For example, *methylene chloride*, which was used in some hairsprays until it was banned in 1989, is a carcinogen.

(III. LECTURE AND DISCUSSION, continued)

Some hair coloring products contain *coal tar dyes*. Examples of coal tar dyes are:

- 4-methoxy-m-phenylenediamine (4-MMPD)
- paraphenylenediamine
- 2-nitro-phenylenediamine
- 2,4-diaminoaniside
- 2,4-diaminoaniside sulfate.

Coal tar, and products made from it, are known to cause cancer. (Coal tar products are particularly linked to cancer of the bladder.) They are considered human carcinogens by both the state and federal governments.

The federal Food and Drug Administration (FDA) tried to ban coal tar dyes, but the hair dye manufacturers strongly objected. Under this pressure from the industry, the FDA agreed not to ban these ingredients. Instead, it now requires products with coal tar dyes to have a label saying: "Caution—This product contains ingredients which may cause skin irritation in certain individuals and a preliminary test according to accompanying directions should first be made. This product must not be used for dyeing eyelashes or eyebrows; to do so may cause blindness." Unfortunately, this label does not warn people that the product may also cause cancer.

Some shampoos and conditioners contain chemicals called TEA (triethanolamine) or DEA (diethanolamine). If TEA or DEA are found in a product that also contains the chemical BNPD, they can react with it to produce *nitrosamines*. (The chemical name for BNPD is 2-bromo-2-nitropropane-1,3-diol.) Nitrosamines are classified as suspected human carcinogens by the state and federal governments. They are known to cause cancer in animals. Some scientists believe that they

(III. LECTURE AND DISCUSSION, continued)

may also cause cancer in people, but don't yet have complete proof.

19. Will you always get cancer if you are exposed to a carcinogen?

No. But your risk of getting cancer from a carcinogen is higher if:

- You are exposed to the chemical over a long period of time, or
- You are exposed to a large amount of the chemical.

Anyone who is exposed to a cancer-causing substance *can* get cancer. However, not everybody who is exposed *will* get cancer. In fact, cancer among technicians is very rare. But there is really no way to measure what is a *safe* amount of a cancer-causing substance. For that reason, workers' exposure to these substances should be *completely* eliminated wherever possible.

20. Can chemicals affect your ability to have children?

There may be a risk from some of the chemicals in hair colorings, bleaches, and permanent waving solutions. One scientific study found that cosmetologists exposed to these chemicals in large amounts had more miscarriages than other women. This may have been due to their high exposure to many different chemicals, and lack of adequate ventilation.

Other studies have shown that some chemicals in manicuring and sculptured nail products (like glycol ethers) can cause birth defects and infertility in laboratory animals. Such studies suggest that the same might happen in people, but no one knows for sure yet.

(III. LECTURE AND DISCUSSION, continued)

21. What kind of respiratory problems might be connected to products used in the shop or salon?

According to some scientific studies, technicians who have worked with hairspray for a long time might get a condition called *storage disease*. (The medical term for it is *thesauriosis*.) The symptoms include upper respiratory problems and infections, shortness of breath, frequent colds, and a chronic cough.

In addition, as we saw before, some chemicals can cause nose irritation, throat irritation, lung irritation, or asthma.

22. Are chemicals especially hazardous to your health if you smoke?

Yes.

- Smoking increases the amount of harmful chemicals in your body. Tobacco smoke contains some of the same chemicals you may already breathe at work. For example, formaldehyde, which is used in nail polishes and shampoos, is also found in tobacco smoke.
- Smoking damages your lungs' ability to protect themselves against other harmful chemicals.
- Chemicals on your hands or in the air can get on your cigarettes, and you can breathe or swallow these chemicals when you smoke.
- Smoking increases the harmful effects of other chemicals. For example, combining asbestos and tobacco smoke in your lungs greatly increases your chance of lung cancer.

(III. LECTURE AND DISCUSSION, continued)

- **End the class.**

In this series of two classes we have discussed some health effects of chemicals. In a later class we'll look in more detail at some specific chemicals found in the products you use at work.

Handout A Chemicals and Health/Part 2

QUICK SUMMARY

In addition to *safety hazards* like cuts, falls, and burns, there may also be *health hazards* on your job. For example, certain chemicals in the shop can harm your health.

Health effects of a chemical may be either:

- **Acute effects**—appear immediately or soon after your exposure to a chemical. They may be minor, like nose or throat irritation, or serious, like eye damage.
- **Chronic effects**—may take years to show up. They are usually caused by regular exposure to a harmful substance over a long period of time. The effects are usually permanent.

Types of health effects

Chemicals can cause many different kinds of health problems, affecting many different parts of your body. Here are some examples:

- **Irritation**

- Eye irritation**—causes symptoms like burning, watering, itching, and redness.

- Nose and throat irritation**—causes symptoms like burning, itching, a runny nose, and a scratchy throat.

- Lung irritation**—causes symptoms like breathing difficulty, shortness of breath, and coughing.

- **Allergies**

An *allergy* is a reaction some people have when they become overly sensitive to a particular chemical. When you are allergic to

(see next page)

a chemical, you have an allergic reaction every time you use it, no matter how small an amount you use.

Chemicals that cause allergies are called *allergens*. You may develop an allergy after using such a chemical several times, or it may take years. Allergies develop at different times with different people. Many people *never* become allergic to an allergen.

Some symptoms of allergies are a stuffy nose, tears in the eyes, sneezing, wheezing, coughing, and an itchy skin rash. One of the most serious allergic reactions is asthma.

- **Dermatitis**

Dermatitis is an inflammation of the skin, like a rash. It is usually caused by certain chemicals which get on your skin and irritate it. Sometimes breathing in a chemical to which you are allergic can also cause dermatitis.

Some symptoms of dermatitis are cracking, flaking, dryness, redness, itching, and burning of the skin. Technicians get dermatitis most often on their hands and arms.

- **Central Nervous System Effects**

Some chemicals can cause headaches, dizziness, nausea, drowsiness, restlessness, and lack of coordination. These effects all involve the central nervous system, which is made up of your brain, spinal cord, and nerves. These effects are very similar to the symptoms of drinking too much alcohol. They are usually caused by breathing the vapors of certain chemicals. Sometimes the cause can be a chemical absorbed through the skin.

- **Cancer**

Cancer is the growth and spread of abnormal cells in your body. You can get cancer if you are exposed to certain chemical substances under particular conditions. A cancer-causing substance is called a *carcinogen*.

The great majority of chemicals used in the shop do not cause cancer. But a few of these chemicals are known or suspected carcinogens. *Methylene chloride*, which was used in some

(see next page)

hairsprays until it was banned in 1989, is a carcinogen. Some hair coloring products contain *coal tar dyes*. Coal tar, and products made from it, are known to cause cancer. Also, some shampoos and conditioners contain chemicals which can react with each other to produce *nitrosamines*. Nitrosamines are known to cause cancer in animals, and scientists believe they may also cause cancer in people.

Not everyone who is exposed to a carcinogen will get cancer. Your risk is higher if you are exposed to a large amount, or exposed over a long period of time. Still, workplace exposure to carcinogens should be *completely* eliminated wherever possible.

- **Reproductive Damage**

There may be a risk of reproductive damage from some of the chemicals in hair colorings, bleaches, and permanent waving solutions. One scientific study found that technicians who are exposed to these chemicals in large amounts have more miscarriages than other women.

Some chemicals in sculptured nail products (like glycol ethers) have caused birth defects and infertility in laboratory animals. The same might happen to people, but no one knows for sure yet.

- **Respiratory Problems**

According to some scientific studies, technicians who have worked with hairspray for a long time might get a lung condition called *storage disease*, also known as *thesaurosis*. Also, some chemicals can cause nose irritation, throat irritation, lung irritation, or asthma.

- **Chemical Effects on Smokers**

If you smoke and also work with toxic chemicals:

- The amount of harmful chemicals in your body increases. Tobacco smoke contains some of the same harmful chemicals you may already breathe at work, like formaldehyde.
- Cigarette smoke damages your lungs' ability to protect themselves against other harmful chemicals.

(see next page)

- Chemicals on your hands or in the air can get on your cigarettes, and you can breathe or swallow these chemicals when you smoke.
- Smoking increases the harmful effects of other chemicals. For example, combining asbestos and tobacco smoke in the lungs greatly increases your chance of lung cancer.

Chemicals in the Shop

OBJECTIVES

After completing this module, students will be able to:

- Name some chemicals commonly used in barbering and cosmetology products.
- Describe the possible health effects of each chemical.
- Explain how various work processes can expose technicians to these chemicals.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION AND REVIEW.	10 minutes	• Chalkboard or flipchart.
II. SMALL GROUP EXERCISE: CASE STUDIES. Could your health symptoms be related to specific chemicals in barbering and cosmetology products? (Students work in pairs to solve "real life" problems.)	25 minutes	• Handout A: <i>What's in That Product?</i> • Handout B: <i>Case Studies.</i>
III. REPORT BACK AND DISCUSSION. How did students solve the problems presented in the Case Studies?	25 minutes	• Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION AND REVIEW (10 minutes)

- **Explain objectives of this module to the class. (See OBJECTIVES on previous page.)**

Today's class will introduce you to some specific chemicals found in barbering and cosmetology products. We'll also look at their health effects and how you can be exposed to these chemicals. For today's discussion we will only briefly discuss ways to protect yourself against chemicals, since we will spend much more time on this subject in another class.

First, let's review some facts about chemicals which we learned before.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *Can you remember, from an earlier class, the ways chemicals can get into your body?*

Chemicals can get into your body by:

- **Breathing** gases or vapors.
- **Skin contact.** Chemicals can damage your skin, or get into your bloodstream through the skin.
- **Eye contact.** You may accidentally touch your eye when you have chemicals on your hands, vapors may get in your eyes, or chemicals may splash into your eyes.
- **Swallowing.** Your food, drink, or cigarettes could have been contaminated by chemicals.

(I. INTRODUCTION AND REVIEW, continued)

2. *Can you remember, from an earlier class, what makes a chemical more hazardous or less hazardous to your health?*

Remember that how harmful a chemical will be depends on many factors, including:

- **Toxicity of the chemical.** Some chemicals are more dangerous than others. For example, some chemicals are relatively non-toxic. They may cause only minor irritation when you breathe. Other chemicals are highly toxic and may cause severe breathing problems, lung damage, or cancer.
- **How much of the chemical gets into or on your body, and for how long.** For example, you may do sculptured nails every once in a while and not have any health problems. But if you do a lot of sculptured nails over a long period of time, you may begin to notice some health effects from the chemicals.
- **How your own body reacts to the chemical.** Not every person has the same reaction. Some people may notice symptoms when they work with a product; other people may never have a health problem. The effects on health can vary greatly from person to person. Your body's reaction often depends on individual factors like heredity, age, pregnancy, illness, smoking, or drinking.

3. *Based on what you already know, what are the names of some chemicals found in barbering and cosmetology products?*

- **List chemicals on the board as people suggest them.**

(I. INTRODUCTION AND REVIEW, continued)

Possible answers are:

acetone
sodium peroxide
sodium hydroxide
ammonium hydroxide
ammonium thioglycolate
formaldehyde
alcohol.

These are just a few of the hundreds of chemicals used in salons.

4. *How can you find out what chemicals a product contains?*

- **Material Safety Data Sheets.** Reading the product's Material Safety Data Sheet (MSDS) is probably the best way to find out which chemicals it contains. (We will discuss MSDSs in more detail in another class.) You can get the MSDS from your employer. If you are an independent contractor, you can request an MSDS directly from the manufacturer or supplier.
- **Labels.** The label may tell you the ingredients. But many of the products you use are for "Professional Use" only and don't have to be labeled like consumer products. Many of them do not have a list of ingredients on the label.
- **Training.** Your employer should give you training about chemicals. You should be told which chemicals are in the products you use, their possible health effects, and how to use the products safely. If you are an independent contractor you are responsible for your own training.

II. SMALL GROUP EXERCISE: CASE STUDIES (25 minutes)

- **Ask each student to pick a partner for this exercise. Students will work in pairs.**
- **Distribute Handout A: *What's In That Product?***
- **Distribute Handout B: *Case Studies.***

In this exercise you'll work in pairs on a set of five Case Studies. Each Case Study presents a "real life" problem you might run into when you use a particular kind of chemical product at work.

After each Case Study, there are three questions for you and your partner to answer. To answer them you'll need to find out which chemicals are usually found in some particular product, and what health problems they can cause. You can find this information in **Handout A**, which lists types of products and their typical ingredients. It also lists health problems which the various chemicals can cause.

You won't find the answer to the question "What can you do to protect yourself?" in **Handout A**, but answer that question based on what you already know.

With your partner, try to go through all five Case Studies and answer as many questions as you can. Allow 5 minutes for each Case Study. Write down your answers, and be ready to discuss them with the whole class later. This is *not* a test, and you won't have to turn your answers in.

You'll have a total of 25 minutes for this exercise.

- **Students work in pairs on the Case Studies for 25 minutes.**

III. REPORT BACK AND DISCUSSION (25 minutes)

- **Bring the whole class back together.**
- **Read the class the first Case Study (Handout B) and the questions following it. As you read each question aloud, ask students to volunteer the answers they found.**
- **Suggest the correct answers if they need help. (Answers and Discussion Points are below.)**
- **Proceed to the next Case Study.**
- **Continue in the same way with all the rest.**

Case Studies—Answers and Discussion Points

CASE STUDY #1 (See Handout B)

You just started to work in a nail salon. You do about seven full sets of sculptured nails each day. Your eyes and throat feel irritated at the end of the day.

(a) What are some specific chemicals in sculptured nail products that might be causing these problems?

Acetone, dimethyl p-toluidine, ethyl acetate, butyl acetate, formaldehyde, methacrylates, methyl ethyl ketone (MEK), toluene, and xylene.

(b) During which steps of the process can these chemicals get into your body?

When opening containers, pouring the chemicals into smaller containers, mixing the chemicals, or applying the acrylic mixture to the nail.

(III. REPORT BACK AND DISCUSSION, continued)

(c) What can you do to protect yourself?

- Always work in a well-ventilated area.
- Use a vented manicuring table.
- Don't use products that contain methyl methacrylates, which were restricted by the FDA in 1974.
- Keep containers closed when you're not using them.
- Use specially designed containers that keep vapors out of the air.
- Don't eat, drink, or smoke in your work area.

CASE STUDY #2 (See Handout B)

You work in a full service shop. Hair coloring is a popular service among your clientele. After doing a coloring, your eyes and nose feel irritated. You have also begun to develop a skin rash.

(a) What are some specific chemicals in hair colorings that might be causing these problems?

Alcohol, aminophenols, ammonium hydroxide, coal tar dyes, and hydrogen peroxide.

(b) During which steps of the process can these chemicals get into your body?

When mixing the product and applying it to your client's hair.

(III. REPORT BACK AND DISCUSSION, continued)

(c) What can you do to protect yourself?

- Always work in a well-ventilated area.
- Keep containers closed when you're not using them.
- Wear gloves.
- Wear safety goggles when mixing chemicals.

CASE STUDY #3 (See Handout B)

After you use a chemical hair relaxer, your hands are cracked and dry.

(a) What are some specific chemicals in relaxers that might be causing this problem?

Alcohol, ammonium hydroxide, ammonium thioglycolate, glycerol monothioglycolate, bromates, and sodium hydroxide.

(b) During which steps of the process can these chemicals get into your body?

When mixing the product, when applying it to your client's hair, or during the shampoo (neutralizing) process.

(c) What can you do to protect yourself?

Wear gloves.

(III. REPORT BACK AND DISCUSSION, continued)

CASE STUDY #4 (See Handout B)

You have worked in a shop for over ten years. Lately you have had trouble breathing. You think it might be from the hairspray.

(a) What is a specific chemical in hairspray that might be causing this problem?

Polyvinylpyrrolidone (PVP).

(b) During which step of the process can this chemical get into your body?

When spraying your client's hair.

(c) What can you do to protect yourself?

- Always work in a well-ventilated area.
- Avoid products that contain polyvinylpyrrolidone.
- Use wet styling aids instead of hairsprays.

CASE STUDY #5 (See Handout B)

You've been working in a very busy salon for three years. Recently, every time you give a perm you get an itchy and runny nose.

(a) What are some specific chemicals in perms that might be causing this problem?

Alcohol, ammonium thioglycolate, glycerol monothioglycolate, bromates, hydrogen peroxide, and sodium hydroxide.

(III. REPORT BACK AND DISCUSSION, continued)

(b) During which steps of the process can these chemicals get into your body?

When mixing the product or applying it to your client's hair.

(c) What can you do to protect yourself?

- Always work in a well-ventilated area.
- Keep containers closed when you're not using them.

- | |
|---|
| <ul style="list-style-type: none">• End the class. |
|---|

Today you have learned about some of the chemicals found in products you use at work, and their health effects. In future classes, we will look in more detail at how you can protect yourself from these chemicals on the job.

Handout A: What's in That Product?, which you received today, summarizes a lot of the information that we covered. Please keep it as a permanent reference.

Handout A Chemicals in the Shop

WHAT'S IN THAT PRODUCT?

Here are a few of the hazardous chemicals sometimes found in hair care and beauty products. The chart shows some possible health effects of each chemical. Your risk depends on the *amount* of the chemical in the product, its *toxicity*, the *length of time* you are exposed, *how* the chemical enters your body, your own *individual sensitivity*, and other factors. Check each product's Material Safety Data Sheet (MSDS) for more information.

PRODUCT	MAY CONTAIN THESE CHEMICALS	POSSIBLE HEALTH EFFECTS
BLEACHES	Alcohol (ethyl or isopropyl)	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis
	Ammonium hydroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Skin irritation and dermatitis
	Ammonium persulfate or potassium persulfate	<ul style="list-style-type: none"> • Eye irritation • Skin irritation and dermatitis • Allergies, including asthma • Possible fire hazard
	Hydrogen peroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Severe irritation of mouth, throat, and stomach if swallowed
	Sodium peroxide	<ul style="list-style-type: none"> • Eye and nose irritation • Skin and eye burns • Skin irritation and dermatitis

* Central nervous system effects include headache, dizziness, nausea, drowsiness, and restlessness.

(see next page)

PRODUCT	MAY CONTAIN THESE CHEMICALS	POSSIBLE HEALTH EFFECTS
CHEMICAL HAIR RELAXERS	Alcohol (isopropyl)	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis
	Ammonium hydroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Skin irritation and dermatitis
	Ammonium thioglycolate or glycerol monothioglycolate	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin irritation and dermatitis • Allergies, including asthma
	Boric acid, perborate, or borate	<ul style="list-style-type: none"> • Central nervous system effects* • Kidney damage if swallowed
	Bromates	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin and eye burns • Skin irritation and dermatitis • Severe irritation of mouth, throat, and stomach if swallowed • Kidney damage if swallowed
	Hydrogen peroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Severe irritation of mouth, throat, and stomach if swallowed
	Sodium hydroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Skin irritation and dermatitis • Severe irritation of mouth, throat, and stomach if swallowed

* Central nervous system effects include headache, dizziness, nausea, drowsiness, and restlessness.

(see next page)

PRODUCT	MAY CONTAIN THESE CHEMICALS	POSSIBLE HEALTH EFFECTS
HAIR COLORING PRODUCTS	Alcohol (ethyl, isopropyl, or propyl)	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis
	Aminophenols	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Skin irritation and dermatitis • Severe allergic reaction in some people
	Ammonium hydroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Skin irritation and dermatitis
	Coal tar dyes (aniline derivatives) (Examples: 4-methoxy-m-phenylenediamine (4-MMPD), paraphenylenediamine, 2-nitro-phenylenediamine, 2,4-diaminoaniside, and 2,4-diaminoaniside sulfate)	<ul style="list-style-type: none"> • Severe eye irritation and blindness • Skin irritation and dermatitis • Severe allergic reaction in some people • Cancer if absorbed through the skin during long-term use
	Hydrogen peroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Severe irritation of mouth, throat, and stomach if swallowed
	Lead acetate	<ul style="list-style-type: none"> • Lead poisoning if absorbed in large amount
HAIRSPRAYS	Alcohol (denatured ethyl or tertbutyl)	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis
	Isobutane	<ul style="list-style-type: none"> • Fire hazard

* Central nervous system effects include headache, dizziness, nausea, drowsiness, and restlessness.

(see next page)

PRODUCT	MAY CONTAIN THESE CHEMICALS	POSSIBLE HEALTH EFFECTS
HAIRSPRAYS (continued)	Methylene chloride	<ul style="list-style-type: none"> • Central nervous system effects* • Cancer (shown in lab animal tests) • Banned from hairsprays and other products in 1989
	Polyvinylpyrrolidone (PVP)	<ul style="list-style-type: none"> • Lung and other respiratory problems • Thesauriosis (storage disease) causes a chronic cough and breathing problems, including shortness of breath
	Propane	<ul style="list-style-type: none"> • Fire hazard
MANICURING	Acetone	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis
	Ethyl acetate or butyl acetate	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis
	Formaldehyde	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis • Allergies, including asthma • Cancer with long-term use
	Glycol ethers (a generic term for a group of chemicals)	<ul style="list-style-type: none"> • Reproductive problems (birth defects and infertility shown in lab animal tests) • Possible other effects depending on the specific chemical
	Lanolin	<ul style="list-style-type: none"> • Skin irritation and dermatitis
	Methyl ethyl ketone (MEK)	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects*

* Central nervous system effects include headache, dizziness, nausea, drowsiness, and restlessness.

(see next page)

PRODUCT	MAY CONTAIN THESE CHEMICALS	POSSIBLE HEALTH EFFECTS
MANICURING (continued)	Sodium hydroxide or potassium hydroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Skin irritation and dermatitis • Severe irritation of mouth, throat, and stomach if swallowed
	Toluene	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis • Reproductive problems
	Xylene	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis • Reproductive problems
PERMANENT WAVE SOLUTIONS	Alcohol (isopropyl)	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis
	Ammonium thioglycolate or glycerol monothioglycolate	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin irritation and dermatitis • Allergies, including asthma
	Boric acid, perborate, or borate	<ul style="list-style-type: none"> • Central nervous system effects* • Kidney damage if swallowed
	Bromates	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin and eye burns • Skin irritation and dermatitis • Severe irritation of mouth, throat, and stomach if swallowed • Kidney damage if swallowed

* Central nervous system effects include headache, dizziness, nausea, drowsiness, and restlessness.

(see next page)

PRODUCT	MAY CONTAIN THESE CHEMICALS	POSSIBLE HEALTH EFFECTS
PERMANENT WAVE SOLUTIONS (continued)	Hydrogen peroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Severe irritation of mouth, throat, and stomach if swallowed
	Sodium hydroxide	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Skin and eye burns • Skin irritation and dermatitis • Severe irritation of mouth, throat, and stomach if swallowed
SCULPTURED NAILS	Acetone	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis
	Dimethyl p-toluidine	<ul style="list-style-type: none"> • Eye, nose, and throat irritation
	Ethyl acetate or butyl acetate	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis
	Formaldehyde	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis • Allergies, including asthma • Cancer with long-term use
	Glycol ethers (a generic term for a group of chemicals)	<ul style="list-style-type: none"> • Reproductive problems (birth defects and infertility shown in lab animal tests) • Possible other effects depending on the specific chemical

* Central nervous system effects include headache, dizziness, nausea, drowsiness, and restlessness.

(see next page)

PRODUCT	MAY CONTAIN THESE CHEMICALS	POSSIBLE HEALTH EFFECTS
SCULPTURED NAILS (continued)	Methacrylates (butyl, ethyl, isobutyl, or methyl)	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis • Severe allergic reaction in some people • Restricted by the FDA in 1974
	Methyl ethyl ketone (MEK)	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects*
	Methylene chloride	<ul style="list-style-type: none"> • Central nervous system effects* • Cancer (shown in lab animal tests) • Banned from sculptured nails and other products in 1989
	Toluene	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis • Reproductive problems
	1,1,2-trichloroethane or 1,2,2-trifluoroethane	<ul style="list-style-type: none"> • Central nervous system effects* • Skin irritation and dermatitis
	Xylene	<ul style="list-style-type: none"> • Eye, nose, and throat irritation • Central nervous system effects* • Skin irritation and dermatitis • Reproductive problems
SHAMPOOS AND CONDITIONERS	Alcohol (ethyl or isopropyl)	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis
	Colors or fragrances	<ul style="list-style-type: none"> • Allergies, including allergic dermatitis

* Central nervous system effects include headache, dizziness, nausea, drowsiness, and restlessness.

(see next page)

PRODUCT	MAY CONTAIN THESE CHEMICALS	POSSIBLE HEALTH EFFECTS
SHAMPOOS AND CONDITIONERS (continued)	Formaldehyde	<ul style="list-style-type: none"> • Eye, nose, throat, and lung irritation • Central nervous system effects* • Skin irritation and dermatitis • Allergies, including asthma • Cancer with long-term use
	Petroleum distillates, detergents, or soaps	<ul style="list-style-type: none"> • Eye irritation • Skin irritation and dermatitis
	Quaternary ammonium compounds	<ul style="list-style-type: none"> • Skin irritation and dermatitis
	Sodium lauryl sulfate	<ul style="list-style-type: none"> • Skin irritation and dermatitis
	Triethanolamine (TEA) or diethanolamine (DEA)	<ul style="list-style-type: none"> • When found in a product that also contains the chemical <i>BNPD</i>, they can combine with it to form <i>nitrosamines</i>, which are suspected to cause cancer. (The chemical name for BNPD is 2-bromo-2-nitropropane-1, 3-diol.)

* Central nervous system effects include headache, dizziness, nausea, drowsiness, and restlessness.

Handout B Chemicals in the Shop

CASE STUDIES

1. You just started to work in a nail salon. You do about seven full sets of sculptured nails each day. Your eyes and throat feel irritated at the end of the day.
 - (a) What are some specific chemicals in sculptured nail products that might be causing these problems?
 - (b) During which steps of the process can these chemicals get into your body?
 - (c) What can you do to protect yourself?

(see next page)

2. You work in a full service shop. Hair coloring is a popular service among your clientele. After doing a coloring, your eyes and nose feel irritated. You have also begun to develop a skin rash.
- (a) What are some specific chemicals in hair colorings that might be causing these problems?

 - (b) During which steps of the process can these chemicals get into your body?

 - (c) What can you do to protect yourself?
3. After you use a chemical hair relaxer, your hands are cracked and dry.
- (a) What are some specific chemicals in relaxers that might be causing this problem?

(see next page)

(b) During which steps of the process can these chemicals get into your body?

(c) What can you do to protect yourself?

4. You have worked in a shop for over ten years. Lately you have had trouble breathing. You think it might be from the hairspray.

(a) What is a specific chemical in hairspray that might be causing this problem?

(b) During which step of the process can this chemical get into your body?

(see next page)

(c) What can you do to protect yourself?

5. You've been working in a very busy salon for three years. Recently, every time you give a perm you get an itchy and runny nose.

(a) What are some specific chemicals in perms that might be causing this problem?

(b) During which steps of the process can these chemicals get into your body?

(c) What can you do to protect yourself?

Material Safety Data Sheets

OBJECTIVES

After completing this module, students will be able to:

- Explain what Material Safety Data Sheets (MSDSs) are, and where to get them.
- List the types of information about a chemical product which are given on its MSDS.
- Demonstrate how to use an MSDS to find information about a cosmetic product.
- Discuss the limitations of MSDSs.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	5 minutes	
II. LECTURE AND DISCUSSION. What are Material Safety Data Sheets? Where can you get them? What information about a chemical product can you find on its MSDS?	35 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart. • Handout A: <i>Quick Summary</i>. • Handout B: <i>MSDS for a Typical Nail Remover</i>.
III. SMALL GROUP EXERCISE. How can you use an MSDS to find information?	25 minutes	<ul style="list-style-type: none"> • Handout C: <i>Exercise— Check the MSDS!</i> • Handout D: <i>MSDS for a Typical Hairspray</i>.
IV. REPORT BACK AND DISCUSSION. How did students use the MSDS to answer the questions in the exercise?	25 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart.
Total Time: 1-1/2 Hours		

I. INTRODUCTION (5 minutes)

- **Explain objectives of this module to the class.**
(See OBJECTIVES on previous page.)

Today we are going to discuss one of the ways that you can get information about chemicals you use at work. A Material Safety Data Sheet (MSDS) is a form that gives a lot of information about a chemical product and its hazards. These forms are required by law for many chemical products. Your salon or shop should have a file of MSDSs for the products it uses.

We will look at some MSDSs today, and talk about the information they contain. We will also do an exercise in small groups. You will look at an MSDS for hairspray and answer questions about the information that you find there.

II. LECTURE AND DISCUSSION (35 minutes)

- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *What is a Material Safety Data Sheet?*

There is a Material Safety Data Sheet (MSDS) for almost every commercial product that contains chemicals. The MSDS is a form which gives a lot of useful information about a chemical product, including:

- Names of any dangerous ingredients
- Health hazards
- Safety hazards
- Precautions to take when using the product
- Emergency procedures if there is an accident (like a spill or fire)
- Flammability.

(II. LECTURE AND DISCUSSION, continued)

2. Are MSDSs required by law?

Yes. Cal/OSHA, the state agency that sets rules for workplace safety and health, requires chemical manufacturers and importers to prepare an MSDS for each product they sell that contains hazardous chemicals. They must give the MSDS to employers who use the product.

This rule is one part of a regulation called the *Hazard Communication Standard* (Section 5194 of the California Code of Regulations, Title 8, General Industry Safety Orders). This regulation gives California workers the right to get information from their employers about hazardous substances used on the job. The right to get information is often called the *right to know*.

Cal/OSHA says that employers have to supply information on hazardous substances to workers in several different ways. For example, employers should:

- Train workers about chemical hazards.
- Make sure product containers have proper labels.
- Keep Material Safety Data Sheets available in the workplace.

We'll talk about the "right to know" in more detail in another class. Today we will focus on one part of the regulation: the Material Safety Data Sheet.

3. Where can you get MSDSs?

There should be a file of MSDSs in your workplace. The owner or manager should keep all the MSDSs that have been received for products in use. If no MSDS has been received for a particular product, Cal/OSHA rules say that the employer must ask the manufacturer or distributor for it.

(II. LECTURE AND DISCUSSION, continued)

According to Cal/OSHA, employers should keep MSDSs in a convenient location in the workplace. Workers on all shifts should be able to get access to them easily. Workers have the right to see MSDSs upon request, and to make their own copies of them if they want.

If you are an independent contractor, you also have a right to see MSDSs. You may request them from the manufacturers or suppliers as well as see any that are on file in the shop.

4. *What if a manufacturer or distributor won't provide an MSDS?*

Manufacturers and distributors are required by law to supply MSDSs for their products. If a manufacturer or distributor has not responded to a request within 25 working days, call your local Cal/OSHA office. (Cal/OSHA has many offices located throughout the state. For the phone number of your local office, check the "Government Pages" of your phone book under "California, State of, Industrial Relations Department, Occupational Safety and Health.")

5. *Will the MSDS tell you everything you need to know about a product?*

The MSDS can give you a lot of useful information that you may not find on the product label. Many products don't have good labels. The label may not list the ingredients or say how much of each ingredient there is. But the MSDS usually will tell you what is in the product, how much, some of the hazards, and how to use the product safely.

Unfortunately, MSDSs have their drawbacks. They can be difficult to read, and they often use very technical words. Another problem is that information on health effects is often out of date or left out completely.

(II. LECTURE AND DISCUSSION, continued)

6. *Where can you get more information about a product if the MSDS doesn't tell you enough?*

There should be chemical reference books in your local library. There are also many groups and agencies that have information, including these in California:

- Cal/OSHA
- Hazard Evaluation System and Information Service (HESIS)
- Labor Occupational Health Program (LOHP)
- Labor Occupational Safety and Health Program (LOSH).

One federal agency that can be very helpful is:

- National Institute for Occupational Safety and Health (NIOSH).

There are short descriptions of these agencies, and the information services they provide, in **Handout A: Quick Summary**, which was passed out earlier today. You'll also find addresses and phone numbers for most of them in the handout.

- **For more resource groups and agencies, see the Appendix: Resource Agencies and Materials, at the end of this manual. If students are interested, you may want to give them a copy of it now.**
- **Distribute Handout B: MSDS for a Typical Nail Remover.**

Now we'll look over a typical MSDS and see what information it contains. This is the MSDS for a nail re-

(II. LECTURE AND DISCUSSION, continued)

mover. We'll go over each section of this MSDS, although we won't look at every single piece of information.

7. Are all MSDSs similar to this one?

OSHA recommends a standard format for MSDSs, but the actual format used may vary from one manufacturer to another. Still, every MSDS must contain the same kind of information, even if it's in a different order. There usually are eight or nine separate sections that must be filled out on an MSDS, depending upon the version of the form that's used. To understand what's in these sections, follow along.

8. What product does this MSDS describe? Who makes the product?

This is the MSDS for a nail remover. (It is used to remove artificial nails.) Its actual trade name, and its manufacturer, have been blocked out on your copy.

Section I of an MSDS gives the trade name of the product. This is the name under which the product is sold, and should be the same as the name on the label. In some cases, the technical chemical name and chemical formula are also given here. If you don't see the chemical name or formula, the product is probably a mixture of different chemicals, not just one substance. Notice that this product is a mixture.

The manufacturer's name, address, and business phone number are also found in Section I, along with a phone number to call in emergencies.

9. When was this MSDS prepared?

Section I also shows that this MSDS was prepared 3/21/87, and last revised 7/15/88. It's important to notice the date because you don't want to use an

(II. LECTURE AND DISCUSSION, continued)

MSDS that's too old. The chemicals in a product can change from year to year, and even if they don't, new scientific studies may have been done on the health effects of the chemicals. In general, don't use an MSDS more than five years old.

10. What hazardous ingredients are in this product?

On the MSDS, look at Section II, "Hazardous Ingredients." This nail remover contains dimethyl ketone (which is also called acetone) and diethyl ether (which is also called ethyl ether). The MSDS says that dimethyl ketone makes up a "majority" of the mixture (over 50%), and diethyl ether makes up a "minority" (under 50%).

Section II of an MSDS is supposed to list all the hazardous ingredients in the product, and how much of each ingredient there is. This is very important information because, once you have the chemical names of the ingredients, you can look them up in any chemical reference book and learn a lot more about them.

11. How can you tell how hazardous the ingredients are?

Section II should tell you how much of each ingredient the law allows in your workplace. The more hazardous a chemical, the less the law allows. For certain chemicals, Cal/OSHA has set a *Permissible Exposure Limit (PEL)* and you'll see it listed in Section II. The PEL is the highest amount of the chemical to which a worker can *legally* be exposed, on the average, during an eight-hour day. If your workplace is inspected by Cal/OSHA, the inspector might measure the amount of a chemical in the air to see if it's higher than the chemical's PEL.

The PEL can give you some idea how hazardous each chemical in the product may be. The *lower* the PEL,

(II. LECTURE AND DISCUSSION, continued)

the *less* of the chemical is allowed, so the chemical may be *more* hazardous. However, many chemicals—even some which are quite dangerous—don't have PELs. A chemical isn't necessarily safe just because Cal/OSHA hasn't set a PEL for it.

For this product, the MSDS shows that both chemical ingredients do have PELs. For dimethyl ketone, the PEL is 1000 parts per million (ppm). In other words, when dimethyl ketone (acetone) vapor is in the air, no more than 1000 parts of the vapor are allowed in every million parts of air. For diethyl ether, the PEL is 400 ppm.

Besides the PEL, the MSDS also may show other kinds of exposure limits set by different agencies.

12. What does this nail remover look and smell like?

Section III, "Physical Characteristics," tells you the physical properties of the product. You can see that this product is a clear, colorless liquid that smells like ether. The information here on appearance and odor can help you identify a product if it's not in a labeled container and you don't know what it is.

This section refers to the product as a whole, not the individual ingredients. For example, the product may be described as a solid, liquid, vapor, or gas at room temperature. Its melting and boiling points will be given.

Some of the other information in this section is very technical.

13. Is this product flammable?

Yes. A substance is *flammable* if it catches fire easily and burns rapidly. On the MSDS, notice the chart at the top of page 2. This product has a flammability

(II. LECTURE AND DISCUSSION, continued)

rating of 4 on the scale, indicating that it has a “severe” flammability hazard.

On this MSDS, Section III gave this information. Also look at Section IV, “Fire and Explosion Data,” where an MSDS will usually give the most details about flammability. Especially notice the *flash point*.

The flash point is the lowest temperature at which a chemical’s vapors will burn if exposed to a spark or flame. The flash point is different for different chemicals. The *lower* the flash point, the *easier* the chemical will burn.

If the flash point is *less than 100 degrees Fahrenheit*, the chemical is considered *very flammable*. Even a spark from a cigarette could start a fire.

Notice that this product has a flash point of less than zero degrees Fahrenheit, which is *very* low and helps show again that this product is *very* flammable.

14. If this product catches on fire, how should you put the fire out?

If the product is flammable, Section IV of the MSDS should also give information on the type of fire extinguisher to use, and any special precautions to take when fighting that type of fire. For example, pouring water on certain chemicals when they are burning is a bad idea—it may spread the fire. In these cases, the MSDS should warn against using water and should recommend the right firefighting chemicals to use.

For this product, the MSDS does not recommend using water on a fire. It says to use a foam, carbon dioxide, or dry chemical fire extinguisher. Notice also that anyone fighting this kind of fire should wear a self-contained breathing apparatus (a kind of respirator).

15. Can this product react with other chemicals that might be in the shop?

Sometimes chemicals can react with each other to create a fire, an explosion, or a different hazardous substance. Chemicals that react like this are called *incompatibles*. It's important to know about incompatibles so you can use and store products safely.

On the MSDS, look at Section V, "Reactivity." This section describes the chance that the product might react with other chemicals in the shop. That could happen if the product is stored near other chemicals, or if it mixes with them because of a spill or other accident.

The MSDS says that this product should not be used or stored near strong oxidizing agents, strong acids, or strong bases. That means, for example, that you shouldn't use or store it near bleaches, many of which are oxidizers.

Section V of the MSDS also tells you how stable the product is, and lists conditions to avoid like shaking, jarring, exposure to sunlight, extreme temperatures, etc. For example, the MSDS says that this product may produce carbon monoxide (which is poisonous) and peroxide (which can explode) if it is exposed to air or direct sunlight. That's a good reason to keep containers tightly closed and to store them in a dark place.

16. What are some of the health problems that this product might cause?

On the MSDS, look at Section VI, "Health Hazards." This product can cause eye irritation, dermatitis, and in some cases vomiting, unconsciousness, coma, and even death. It is not known to cause cancer.

(II. LECTURE AND DISCUSSION, continued)

Section VI is one of the most important sections of the MSDS. Unfortunately, it does not always include all the information you need to know.

Section VI is supposed to describe: how the chemicals in the product can get into your body; the short-term (acute) and long-term (chronic) health hazards; whether the product causes cancer or reproductive problems; and the signs and symptoms you will experience if you have been exposed.

It is important to realize that Section VI on most MSDSs usually doesn't have all this information. Often it describes only the most common effects people experience after a short-term or acute exposure. Chronic, long-term effects, like lung disease or cancer, which may occur many years later, may not be mentioned. Remember that you can get additional information about the health effects of chemicals from other sources once you know the chemical ingredients in the product.

17. What should you do in an emergency if someone is overexposed to this product and needs first aid?

Emergency and first aid procedures are also described in Section VI. Notice the specific instructions for first aid on the MSDS for this product. These are different for different kinds of contact with the product—eye, skin, inhalation (breathing), and ingestion (swallowing).

If you receive a large exposure to any chemical, you should always seek medical attention.

18. What should you do if there is a spill of this product?

On the MSDS, look at Section VII, "Precautions for Safe Handling and Use."

(II. LECTURE AND DISCUSSION, continued)

Section VII explains how spills and leaks should be handled, what equipment to use, and what precautions to take when cleaning up. The procedures described in this section usually are written for spills that involve large quantities of a chemical. They may not be relevant for small spills in the shop or salon. According to the MSDS, for large spills of this product you need to evacuate the area, eliminate ignition sources (like sparks or flames), and wear a respirator during cleanup. Not all these precautions may be needed for a minor spill. One good piece of advice here is the warning not to dispose of the product into sewers. (In other words, don't pour it down the drain.)

Section VII may also list safe handling, storage, and waste disposal methods.

19. How can you reduce your risk if you work with this product?

Section VIII of an MSDS, "Control Measures," usually gives you information about ways to protect yourself when you work with the product. These methods might include ventilation and personal protective equipment (like respirators, gloves, or safety goggles).

In this case the MSDS recommends a specific kind of ventilation system, *local exhaust ventilation*. For example, this might be a vented nail table. The MSDS also recommends wearing gloves and splash goggles to guard against skin and eye exposure. It tells you the specific type of glove to use (a neoprene or rubber, chemical resistant glove).

Section VIII sometimes also recommends safe work practices. The MSDS for this product warns you not to use or store the product near food or drink. It recommends washing your hands after using the product, and keeping an eye wash and shower available for emergencies.

III. SMALL GROUP EXERCISE (25 minutes)

- **Distribute Handout C: *Exercise—Check the MSDS!***
- **Distribute Handout D: *MSDS for a Typical Hairspray.***

In this exercise, you will answer some questions about a typical hairspray that you might use on the job. I want you to work in small groups to discuss the questions in **Handout C**. Use information from the MSDS on hairspray (**Handout D**) to answer the questions. You will have approximately 25 minutes. Answer as many questions as you can in that time. This is *not* a test, and you won't have to turn your answers in.

Each small group should pick someone to be the recorder. The recorder will take notes on your discussion and report your group's answers to the entire class later on.

- **Break the class into small groups, with no more than 5 people in each group.**
- **Make sure that each group chooses a recorder.**
- **Give the groups 25 minutes to work.**

IV. REPORT BACK AND DISCUSSION (25 minutes)

- **Bring the whole class back together.**
- **Read the class the first question in Handout C. Ask the recorders from the small groups each to give their group's answer to the question.**
- **Be sure the recorders explain which section of the hairspray MSDS (Handout D) gave the information they found.**
- **Add any points that the recorders do not cover, and discuss the correct answer briefly. (Answers and Discussion Points are below.)**
- **Proceed to the next question in Handout C.**
- **Continue in the same way with all the rest.**

Answers and Discussion Points

1. *What chemicals are in this product?*

On the MSDS, see Section II, "Hazardous Ingredients."

This hairspray contains isobutane, propane, and butane.

2. *How can the chemicals in this product get into your body?*

On the MSDS, see Section V, "Health Hazard Information."

The chemicals can be inhaled (breathed in), they can come in contact with your skin or eyes, and they can be swallowed.

(IV. REPORT BACK AND DISCUSSION, continued)

When you use this hairspray, absorption of chemicals through your skin is not considered to be a hazard. They might irritate the skin, but they won't get into the body through the skin.

3. What does the MSDS tell you about short-term health problems?

On the MSDS, see Section V, "Health Hazard Information."

Acute (short-term) health problems: Exposure may produce rapid breathing, headache, or dizziness. Prolonged exposure may cause visual disturbance, tremors, unconsciousness, or possibly death by asphyxiation.

4. What does the MSDS tell you about long-term health problems?

On the MSDS, see Section V, "Health Hazard Information."

Chronic (long-term) health problems: Propellant gases are not known to have any chronic health effects, but the other ingredients may cause irritation or dermatitis. Some persons with particular skin sensitivities may develop rashes.

5. What existing medical conditions could be made worse by using this product?

On the MSDS, see Section V, "Health Hazard Information."

Using this product may increase respiratory distress in those who have pre-existing chronic respiratory diseases.

(IV. REPORT BACK AND DISCUSSION, continued)

6. Can this product catch on fire or explode easily?

On the MSDS, see Section IV, "Fire and Explosion."

This product is *extremely flammable*. It has a flash point of minus 160 degrees Fahrenheit. Any product with a flash point under 100 degrees Fahrenheit is flammable.

7. How would you put out a fire involving this product? What firefighting chemicals could you use?

On the MSDS, see Section IV, "Fire and Explosion."

Notice that water is *not* recommended for fighting this type of fire. This MSDS recommends that you use a carbon dioxide, dry chemical, or halocarbon fire extinguisher instead. A halocarbon fire extinguisher contains a liquified gas that is about twice as effective as carbon dioxide. However, according to the National Safety Council, the use of this gas (Halon) in fire extinguishers is controversial and may be banned in the future.

8. What should you do if you get this product into your eyes?

On the MSDS, see Section V, "Health Hazard Information."

First Aid Procedures (Eye Contact): You should rinse your eyes with water for at least 15 minutes. Then you should contact a physician.

9. What precautions should you take when working with this product?

On the MSDS, see Section VIII, "Special Handling Information."

(IV. REPORT BACK AND DISCUSSION, continued)

Use adequate ventilation when you work with this hairspray. Increase the ventilation if any employees experience discomfort. A respirator is not needed for normal use.

Spray away from your own or anyone else's face and eyes. Wash your hands and face after handling the product.

Do not use near heat, open flame, or while smoking. Keep out of the reach of children. Use only as directed.

- **End the class.**

This is the the end of our discussion of Material Safety Data Sheets. If you would like help in reading and understanding MSDSs, or would like more information on certain chemicals, remember that the resource groups and agencies listed in **Handout A: Quick Summary** may be able to help.

Handout A

Material Safety Data Sheets

QUICK SUMMARY

Every Material Safety Data Sheet (MSDS) must show:

- **Name of the product**—chemical name, trade name, or both.
- **Manufacturer, distributor, or importer**—name, address, and emergency telephone number.
- **Date** the MSDS was prepared.
- **Hazardous ingredients** in the product.
- **Worker exposure limits**—listed if Cal/OSHA or other authorities have set a limit for any ingredient.
- **Physical and chemical characteristics**—appearance, odor, melting point, boiling point, vapor pressure, and more.
- **Fire and explosion hazards**—flammability, combustibility, and flash point. Any chemical with a flash point under 100°F can catch on fire very easily.
- **Reactivity**—whether the product can react with other chemicals to produce new hazards.
- **Routes of exposure**—whether the product usually gets into the body through breathing, swallowing, or skin contact.
- **Health hazards**—including symptoms, long-term and short-term health effects, and existing health problems which can be made worse by exposure.
- **Whether the product can cause cancer (is a carcinogen).**
- **Precautions for safe handling and use**—including storage, disposal, and how to handle spills or leaks.
- **Control measures**—what ventilation is needed, and whether workers should have protective equipment like respirators or gloves.
- **Emergency and first aid procedures.**

(see next page)

How do you get an MSDS?

- Cal/OSHA requires chemical manufacturers and importers to give customers an MSDS for each product that contains hazardous chemicals.
- If your employer can't get the MSDS from the manufacturer or importer, call Cal/OSHA.
- Employers are required to keep MSDSs in a convenient location at the workplace.
- Employers must let employees see and copy MSDSs if they ask.
- Independent contractors may request an MSDS from the manufacturer or supplier as well as see any MSDSs that are on file in the shop.

You can get additional information on chemicals from:

- **Cal/OSHA**

Cal/OSHA is a state agency that enforces health and safety regulations, inspects workplaces, and offers free publications on various hazards, including chemicals. Cal/OSHA will also assist you if you can't get an MSDS from a chemical manufacturer or distributor. There are many Cal/OSHA offices throughout the state. For your local office, check the "Government Pages" of your phone book under "California, State of, Industrial Relations Department, Occupational Safety and Health."

- **Hazard Evaluation System and Information Service (HESIS)**

HESIS is a state office that provides information to employers and employees on the health effects of toxic substances, and precautions for their safe use. They respond to written requests only.

Hazard Evaluation System and Information Service (HESIS)
2151 Berkeley Way
Annex 11
Berkeley, CA 94704
(510) 540-3014

(see next page)

In your written request, include your name, mailing address, and phone number. Give chemical names (not brand names), and describe the situation. It will take HESIS about one week to respond.

- **Labor Occupational Health Program (LOHP)**

LOHP, part of the University of California, Berkeley, offers information and advice on chemicals and other workplace hazards.

Labor Occupational Health Program (LOHP)
University of California, Berkeley
2515 Channing Way
Berkeley, CA 94720
(510) 642-5507

- **Labor Occupational Safety and Health Program (LOSH)**

LOSH, at the University of California, Los Angeles, offers information and assistance on workplace health and safety hazards.

Labor Occupational Safety and Health Program (LOSH)
University of California, Los Angeles
1001 Gayley Ave., 2nd Floor
Los Angeles, CA 90024
(310) 825-7012

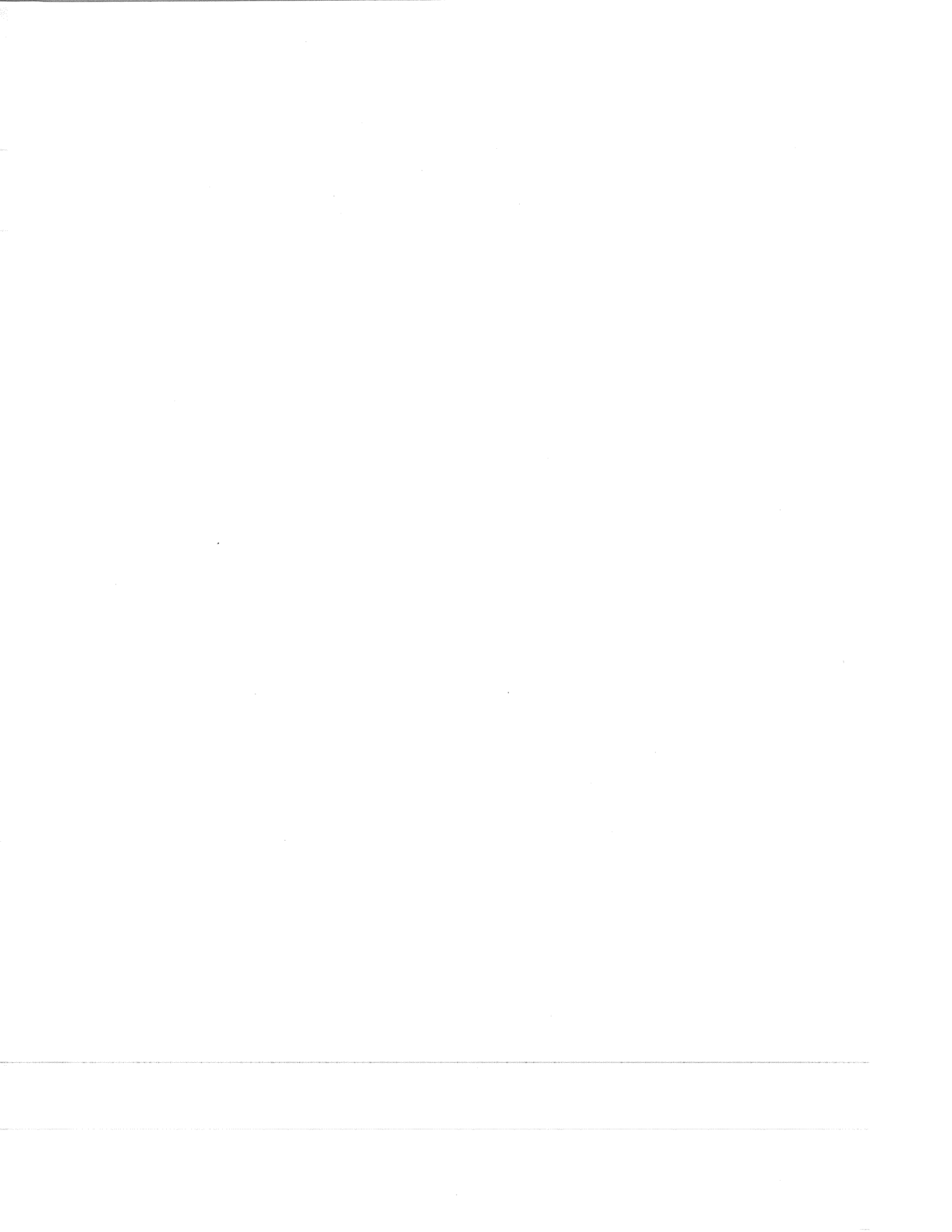
- **National Institute for Occupational Safety and Health (NIOSH)**

NIOSH is a federal agency that offers free publications, a computerized database on chemicals, and a telephone hotline. You can call the hotline for information on chemicals and other workplace hazards. In some cases, NIOSH will also send investigators to your workplace to evaluate health hazards.

National Institute for Occupational Safety and Health (NIOSH)
4676 Columbia Parkway
Cincinnati, OH 45226
National hotline: (800) 356-4674

- **Other Resource Organizations**

Your instructor has a list of additional organizations that may be able to help (**Appendix: Resource Agencies and Materials**, at the end of the manual). Ask for a copy.



Handout B

Material Safety Data Sheets

MSDS FOR A TYPICAL NAIL REMOVER

MATERIAL SAFETY DATA SHEET
File No. 10-004-5

Page 1 of 4

SECTION I PRODUCT INFORMATION

Trade Name Appearing on Label: [REDACTED]

Chemical Names: Mixture of solvents; see Section II

Manufacturer: [REDACTED]
[REDACTED]
[REDACTED]

Emergency Phone: [REDACTED]
Business Phone: [REDACTED]

Preparer: [REDACTED]
[REDACTED]
[REDACTED]

Date Prepared: 3/21/87
Date Revised: 7/15/88

SECTION II HAZARDOUS INGREDIENTS

Chemical Identity	CAS Numbers	Percent	Exposure Limits in Air		
			OSHA (PEL)	ACGIH (TLV)	MAK
Dimethyl Ketone (Acetone)	[67-41-1]	majority	1000 ppm	750 ppm	250 ppm
Diethyl Ether (Ethyl Ether)	[60-29-7]	minority	400 ppm	400 ppm	400 ppm

SECTION III PHYSICAL CHARACTERISTICS

Boiling Point: NKn
Melting Point: n/a
Water Solubility: Moderate
Appearance: Clear and colorless
Odor: Ether like
Physical Form: Mobile liquid

Specific Gravity (H₂O=1): 0.771
Vapor Pressure (mmHg): NKn
Vapor Density (air=1): >2
Evaporation Rate (n-BuAc=1): <0.5
Percent Volatile by Weight: 100

NE = not established

NKn = not known

n/a = not applicable

CND Products Are Designed and Formulated For Salon Use Only

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS (HMIS)

Rating Scale for Hazard Determination: 0 Minimal 1 Slight 2 Moderate 3 Serious 4 Severe

Products Rating:

Health: 3 Flammability: 4 Reactivity: 3 (With Other Chemicals) Personal Protection: B

SECTION IV FIRE AND EXPLOSION DATA

Flash Point: <-18°C (0°F) Auto Ignition Temperature: 160°C (320°F) Method Used: CC for ethyl ether

Flammable Limits in Air, % Volume Lel: NKn Uel: NKn

Extinguishing Media Water Spray X Foam X Carbon Dioxide X Dry Chemical Other (specify):

Special Fire Fighting Procedures: Wear MSHA/NIOSH approved, pressure demand, self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: May form heat sensitive peroxides which may explode with concentration or evaporation. Extremely flammable and volatile.

SECTION V REACTIVITY

Stability Stable: X Unstable:

Conditions to avoid: Elevated temperatures and sources of ignition or sparks.

Incompatibility (materials to avoid): Strong oxidizing agents, strong acids and bases.

Hazardous Decomposition or By-products: Carbon mono and dioxide, explosive peroxides may form upon standing, air exposure or direct sunlight.

Hazardous Polymerization May Occur: Will not occur: X

Conditions to Avoid: Heat, sparks, open flame, open containers and inadequate ventilation.

SECTION VI**HEALTH HAZARDS**Route(s) of Entry Inhalation: X Skin: X Ingestion: X

Health Hazards: (Resulting from misuse or overexposure)

Acute-Irritates eyes and upper respiratory tract, causes dermatitis characterized by dryness and erythema. Can cause vomiting, excitement, unconsciousness and in extreme cases coma, respiratory paralysis and death.

Chronic-Central nervous system disturbances and hypoglycemia.

Carcinogenicity NTP: NO IARC Monographs: NO OSHA Registered: NO

Signs and Symptoms of Exposure: Mild eye and mucous membrane irritant, primary skin irritant and central nervous system depressant. May cause upper respiratory tract irritations as well. Defats skin which becomes sore and infected.

Medical Conditions Generally Aggravated by Exposure: Preclude from exposure those that are susceptible to dermatitis.

Emergency and First Aid Treatment

Eye Contact: Rinse with copious amounts of water for at least 15 minutes. Get immediate emergency medical assistance.

Skin Contact: Flush thoroughly for at least 15 minutes. Wash affected skin with soap and water. Remove contaminated clothing and shoes. If redness or swelling occurs, get medical attention.

Inhalation: Remove immediately to fresh air. If not breathing, administer mouth to mouth rescue breathing and cardiopulmonary resuscitation (CPR) if there is no sign of a pulse. Get immediate emergency medical assistance.

Ingestion: Call local poison control center at once.

SECTION VII**PRECAUTIONS FOR SAFE HANDLING AND USE**

Procedures to Be Followed in the Event of a Spill: Evacuate area, eliminate ignition sources. Wear MSHA/NIOSH approved respirators suitable for vapor concentration encountered. Dike the spill with inert material (sand, earth, Fuller's earth, etc.). Do not flush into sewers or allow entry into waterways.

Waste Dispose Method: If appropriate transfer the liquid and solid diking material to separate containers for recovery or disposal. Remove contaminated clothing promptly. Incinerate liquid at a state approved facility and landfill contaminated diking material at approved sites in accordance to state, local and federal regulations. Should be disposed of as an EPA hazardous waste.

Precautions to Be Taken in Handling and Storage: This material is highly flammable and should be stored in area suitable for this hazard, i.e. out of direct sunlight and in ambient (room) temperatures. Ground containers before transferring bulk liquids. Do not use near a source of ignition.

Other Precautions: Good personal hygiene should be practiced whenever using this product. Store and use away from food and drink.

SECTION VIII CONTROL MEASURES

Specified Respiratory Protection: Wear MSHA/NIOSH approved respirators if TLV is exceeded. Use with specified ventilation.

Ventilation required Local Exhaust: X Special: X Explosion-proof in bulk amount
 Mechanical: Other:

Protective Gloves: Neoprene or rubber; chemical resistant gloves

Eye Protection: Splashproof goggles

Other Protective Equipment: Eyewash, emergency shower, protective garments.

Work/Hygienic Practices: Do not use or store near food and drink. Wash hands thoroughly after every use, before using the rest room or touching eye area.

NOTICE: The information presented herein is based on experimental data submitted by the manufacturers of the raw materials and is considered scientifically correct, however, no warrant or representation, express or implied, is made as to the accuracy or suitability of this information for application to the purchaser's intended purpose or for consequences of its use. Use these materials only as directed. If you have any questions regarding the proper interpretation of this sheet or the meaning of any terms used, CND strongly urges you to speak with your physician. For further information concerning product safety and use, call the number listed on the front of the MSDS.

CND Products Are Designed and Formulated For Professional Salon Use Only and Must Be Used With Adequate Ventilation. A Table Unit Fume Extractor That Expels Vapors and Fumes From the Building is Strongly Recommended.

4. What does the MSDS tell you about long-term health problems?

5. What existing medical conditions could be made worse by using this product?

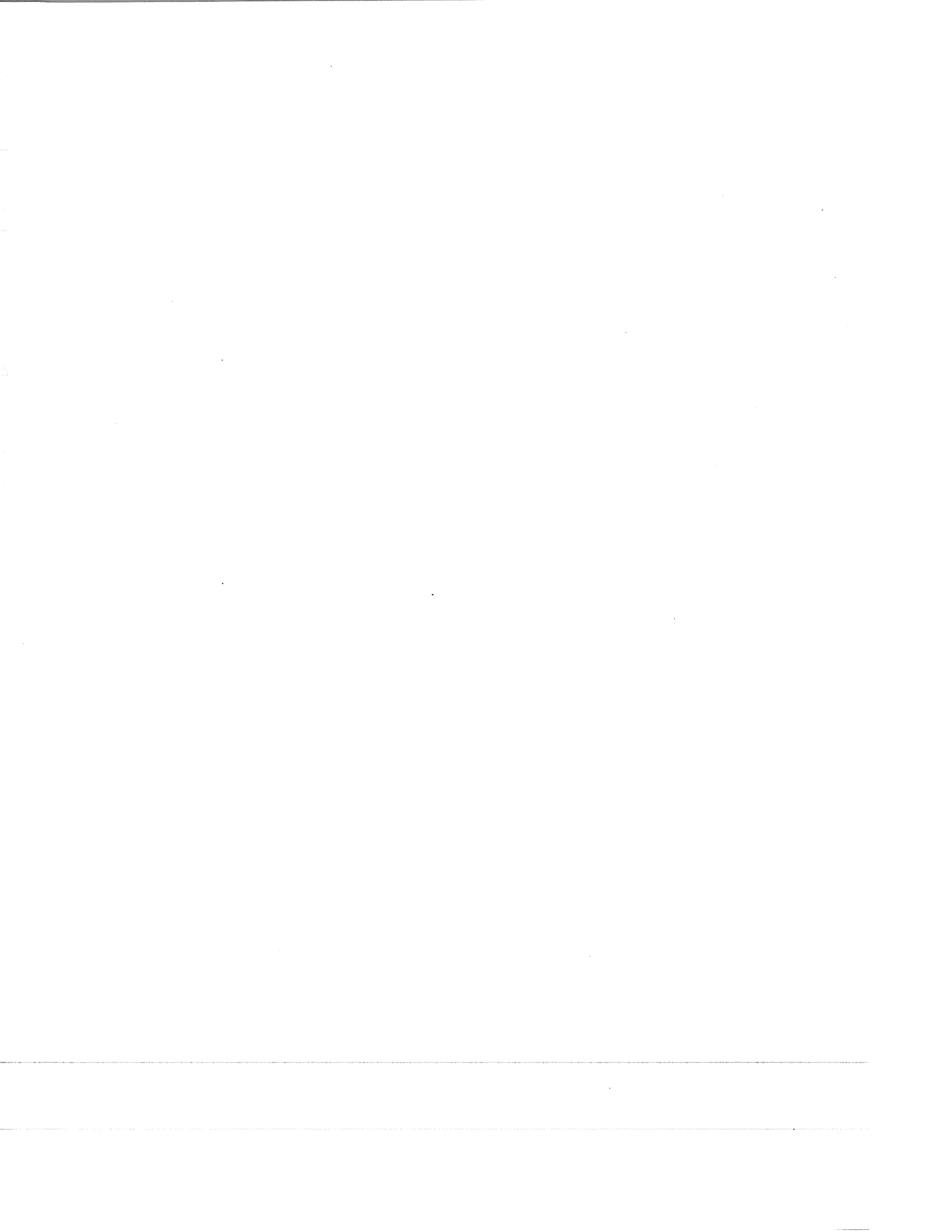
6. Can this product catch on fire or explode easily?

7. How would you put out a fire involving this product? What firefighting chemicals could you use?

(see next page)

8. What should you do if you get this product into your eyes?

9. What precautions should you take when working with this product?



Handout D
Material Safety Data Sheets

MSDS FOR A TYPICAL HAIRSPRAY

MATERIAL SAFETY DATA SHEET

Page 1 of 4

SECTION I

PRODUCT IDENTIFICATION

Trade Name (As Labeled): [REDACTED]

Chemical Names: Not applicable.

Manufacturer: [REDACTED]
[REDACTED]

Emergency Phone: [REDACTED]

Name of Preparer: [REDACTED]
[REDACTED]

Business Phone: [REDACTED]

Date Prepared: 9-86

SECTION II

HAZARDOUS INGREDIENTS

<u>Chemical Names</u>	<u>CAS Numbers</u>	<u>Percent</u>	<u>Exposure Limits in Air</u>		
			<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>	<u>Other</u>
Isobutane	75-28-5	n/a	None established	None established	
Propane	74-98-6	n/a	None established	1000 ppm	
Butane	106-97-8	n/a	800 ppm	None established	

SECTION III

PHYSICAL PROPERTIES

Vapor density (air=1): >1

Melting point, °F: not applicable

Specific gravity: 1

Boiling point, °F: not applicable

Solubility in water: Soluble

Evaporation rate: not applicable
(butyl acetate=1)

Vapor pressure (mmHg at 20°F): >760

pH: not applicable

Appearance and odor: Fragrant, aerosol compressed gas

SECTION IV**FIRE AND EXPLOSION**

Flash Point, °F: -160**Auto Ignition Temperature:** 550**Flammable limits in air, volume %**

lower = 2

upper = 11

Fire extinguishing materials: water spray carbon dioxide other: Halocarbon foam dry chemical

Special firefighting procedures: Contents are extremely FLAMMABLE! Keep surrounding materials and containers cool. Use extinguisher appropriate for surrounding materials.

Unusual fire and explosion hazards: WARNING: Contents under pressure. Do not puncture or incinerate. Containers may explode at temperatures above 120 degrees F.

SECTION V**HEALTH HAZARD INFORMATION**

SYMPTOMS OF OVEREXPOSURE

Inhaled: May produce mild intoxication, drowsiness, or loss of coordination. High concentrations produce intoxication followed by loss of consciousness, asphyxiation, and death.

Contact with skin or eyes: Gas may be irritating and contact with eyes can cause physical injury.

Absorbed through skin: Product is not considered to be hazardous by skin absorption.

Swallowed: May cause nausea and vomiting.

HEALTH EFFECTS OR RISKS FROM EXPOSURE

Acute: Exposure may produce rapid breathing, headache, or dizziness. Prolonged exposure may cause visual disturbance, tremors, unconsciousness or possibly death by asphyxiation.

Chronic: Propellant gases are not known to have any chronic health effects, but the other ingredients may cause irritation or dermatitis. Some persons with particular skin sensitivities may develop rashes.

FIRST AID PROCEDURES

Eye Contact: Rinse eyes with water for at least 15 minutes. Contact a physician.

Skin Contact: Rinse with water. Contact a physician if pain or redness persist.

Inhaled: Move victim to fresh air. Start CPR if victim has stopped breathing. If breathing is difficult, give oxygen. Contact physician.

Swallowed: Induce vomiting with warm water if victim is conscious. Contact physician.

SUSPECTED CANCER AGENT ?

NO: This product's ingredients are not found in the lists below

YES: Federal OSHA NTP IARC Cal/OSHA

SUSPECTED MUTATION AGENT

NO **YES**

SUSPECTED BIRTH DEFECT AGENT

NO **YES**

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: May increase respiratory distress in those who have pre-existing chronic respiratory diseases.

RECOMMENDATIONS TO PHYSICIAN: None.

SECTION VI**REACTIVITY DATA**

Stability

Stable

Unstable

Conditions to avoid: High temperatures.

Incompatibility (materials to avoid): Strong oxidizers and corrosives.

Hazardous decomposition products (including combustion products): Carbon monoxide and carbon dioxide.

Hazardous Polymerization

May Occur

Will not occur

Conditions to avoid: None.

SECTION VII SPILL, LEAK AND DISPOSAL PROCEDURES

Container size: 5 Gallons or less 55 Gallons or less Bulk Other: _____

Step 1 - Human Health Protection: Provide adequate ventilation. Protect eyes and ears while using product.

Step 2 - Containment and Control: Do not allow product to escape into an area where the risk of ignition exists. Small quantities of aerosol are not otherwise considered to be hazardous.

Step 3 - Decontamination: Wash with soap and water.

Step 4 - Hazardous Waste Packaging/Shipping Requirements: Label and ship as Waste Compressed gas, N.O.S.

Step 5 - Waste Disposal Method: Do not dispose of in municipal garbage dumpster. Save in a cool, dry area for disposal as hazardous waste. Contact city or county for disposal alternatives.

SECTION VIII SPECIAL HANDLING INFORMATION

Ventilation and engineering controls: Provide ventilation adequate to maintain exposure below the established limits. Increase ventilation if any employees experience discomfort while using sprays.

Respiratory protection: None required during normal use.

Eye protection (type): Have customer close eyes or shield eyes while spraying. Full eye protection not required during normal use.

Gloves (specify material): Latex or other if skin sensitivity may be a problem.

Other clothing and equipment: None required during normal use.

Work practices, hygienic practices: Spray away from face and eyes. Wash after handling.

Other handling and storage requirements: DO NOT USE near heat, open flame, or while smoking. Keep out of reach of children. Use only as directed.

Protective measures during maintenance of contaminated equipment: None.

SECTION IX LABELING

Labeling (precautionary statements): FLAMMABLE COMPRESSED GAS

D.O.T. Label: Compressed gas.

Preventing Chemical Injuries

OBJECTIVES

After completing this module, students will be able to:

- Give examples of basic safety practices to follow when using chemicals at work.
- List several ways to prevent chemical injuries.
- Describe precautions to take with flammable and combustible chemicals.
- List proper storage and disposal methods for chemicals.
- Explain how to handle chemical spills and leaks.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION. How can chemicals cause injuries?	5 minutes	• Chalkboard or flipchart.
II. LECTURE AND DISCUSSION. How can you prevent injuries from chemical fires, spills, or leaks? What are the proper ways to store chemicals and dispose of them?	25 minutes	• Chalkboard or flipchart. • Handout A: <i>Quick Summary</i> .
III. SMALL GROUP EXERCISE: CASE STUDIES. What would you do to prevent chemical injuries in "real life" situations at work?	15 minutes	• Handouts B and C: <i>Case Studies</i> .
IV. REPORT BACK AND DISCUSSION. How did students solve the problems presented in the Case Studies?	15 minutes	• Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION (5 minutes)

- **Explain objectives of this module to the class. (See OBJECTIVES on previous page.)**
- **Introduce this “brainstorming” exercise.**

This lesson is about how to prevent injuries when you work with chemicals. If they’re not used, stored, and disposed of properly, some chemicals in the shop can cause accidents that injure you, your co-workers, or your clients.

- **Ask the class:**

Can you give some examples of chemical accidents?

- **List examples on the board as people suggest them.**

Possible answers are:

- Some chemicals can catch fire or explode.
- Chemicals can spill or leak.
- Two chemicals that accidentally mix together can react with each other in ways you don’t expect.
- Chemicals can cause accidents if they’re not stored properly.
- Chemicals which are disposed of in the wrong way can hurt people or the environment.

II. LECTURE AND DISCUSSION (25 minutes)

- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *Why is chemical safety important?*

When you work with chemicals, safety precautions are just as important as health precautions. A fire, explosion, spill, leak, or other chemical accident can have tragic results for both you and your clients. And it can happen quickly—in just a few seconds or a few minutes. It's important to be prepared—to know how to prevent chemical accidents, and what to do if they happen.

2. *What are flammable and combustible chemicals?*

Flammables and *combustibles* are chemicals that catch on fire and burn easily. They can ignite when they are near:

(II. LECTURE AND DISCUSSION, continued)

- **a flame**—on a cigarette, match, candle, torch, or burner.
- **a spark**—from a light switch, electric plug, frayed cord, or electric appliance.
- **a hot object**—like a curling iron, stove, light bulb, or hot plate.

The difference between a flammable chemical and a combustible chemical is how easily the chemical catches on fire. A flammable chemical will catch fire and burn faster and more easily than a combustible one. But both kinds of chemicals will burn.

3. What products in the shop can catch on fire?

Among the fire hazards in a typical shop or salon are acetone, alcohol, nail polish, hairspray, styling gel, straightener solution, and aerosol cosmetics.

Chemicals used in some *curl activators* may be particularly dangerous fire hazards. In cases reported to the Food and Drug Administration, some salon patrons became “human torches” when they had curl activator applied to their hair and then came near candles, matches, or cigarettes. Many consumers were horribly burned in these incidents. Obviously, this problem is a threat to cosmetologists, too.

In 1974, a federal task force said that *propane* and *butane* propellants should not be used in spray can products because they are highly flammable. They can turn the spray can into a “blowtorch.” Watch out for these chemicals. They may still be used in some aerosol hair care products. Avoid products with propane or butane propellants.

(II. LECTURE AND DISCUSSION, continued)

4. How can you tell if a product contains flammable or combustible chemicals?

If a product, or any ingredient in it, is a fire hazard, the product's label *may* tell you. But don't rely on the label. Also check the product's Material Safety Data Sheet (MSDS). (MSDSs are covered in detail in another class.)

5. How can you work safely around chemicals that are flammable or combustible?

- Always be aware which chemicals you use may be fire hazards.
- Try to avoid using flammable or combustible chemicals. Use a safer chemical if you can.
- Never smoke when using *any* chemical, but particularly when using flammable or combustible chemicals.
- Don't allow a flammable or combustible chemical to come near a flame, spark, or hot object.
- Check your electrical equipment to make sure there are no broken or frayed cords that might spark or get hot.
- Don't try to warm up chemicals by putting them into a microwave oven or using a hot blow dryer on them. It's a bad idea with *any* chemical, but it's *especially* dangerous with a flammable or combustible chemical.

6. What should you do to be prepared for a chemical fire?

- Have a fire extinguisher available. Know where it is and know how to use it.

(II. LECTURE AND DISCUSSION, continued)

- Check the MSDS *before* there is a fire to see if there are any special firefighting instructions. For example, you shouldn't use water on some kinds of chemical fires.
- Know how to call for emergency help and what to do until help arrives.
- Have first aid supplies available in the shop.

7. *Can you use any fire extinguisher on a fire?*

No. Portable fire extinguishers are classified according to the type of fire they are designed to fight. There are four classes of fires. A label on the extinguisher indicates what kind of fire it should be used for.

- **Class A Fires**—Ordinary Combustibles

Fires involving ordinary combustible materials like wood, cloth, and paper.

- **Class B Fires**—Flammable Liquids

Fires involving flammable liquids, gases, and greases.

- **Class C Fires**—Electrical Equipment

Fires involving energized electrical equipment and electrical wiring.

- **Class D Fires**—Combustible Metals

Fires involving combustible metals like magnesium, titanium, and zinc.

It is very important to use the correct extinguisher on a fire. For example, you wouldn't use an extinguisher that's rated for Class A on a Class C fire.

(II. LECTURE AND DISCUSSION, continued)

There is a fire extinguisher available that is effective against Class A, B, and C fires. It is called a *multi-purpose* extinguisher. You can get it in most hardware stores or from companies that sell safety equipment.

8. How should chemical products be stored in the shop?

- Always store chemical products in their original labeled containers. It could be dangerous if someone doesn't know what they are.
- Always check the label *and* the MSDS for any special storage instructions.
- Store chemical products out of direct sunlight in a cool, dark place with good ventilation.
- Store each chemical in the proper kind of container. For example, acetone shouldn't be kept in certain kinds of plastic bottles. It will melt them.
- Make sure chemical containers are in good condition.
- Never store chemical products near food or near areas where people eat or smoke.
- Store all chemicals, especially flammables and combustibles, away from flames, sparks, heat, and hot objects. There are fireproof metal cabinets you can use for highly flammable chemicals.
- After you have finished using a product, close the container tightly before you put it away. This helps prevent spills and keeps vapors from getting into the air.
- Store chemicals in a secure place where their containers will not fall and spill. Use guards along the front of shelves to keep containers from falling.

(II. LECTURE AND DISCUSSION, continued)

- Don't store large or heavy containers on high shelves where you will have to reach awkwardly to get them. You could drop them, and they might break or spill.
- Don't store chemicals with acids in them near chemicals with bases. These are called *incompatible* chemicals. They can mix together if their containers break, or if they leak or spill. This might cause a dangerous reaction. For example, boric acid (found in some perm solutions) should not be stored next to ammonium hydroxide (a base found in some hair colorings).

9. What should you do if a chemical spills or leaks?

The most important rule for spills and leaks is to prevent them in the first place. Handle chemical containers carefully. Make sure containers are in good condition. Close them securely when you're through using the product. Keep them in a safe place, out of the way.

If a chemical *does* spill or leak, clean it up immediately. But first check the label and MSDS for any special cleanup instructions. *Cleanup procedures may be different for different chemicals.*

If you get a hazardous chemical on your clothes, on your skin, or in your eyes, remove affected clothing and flush your skin or eyes with water for at least 15 minutes. It's a good idea to have an emergency *eye wash station* in the shop. Depending upon the chemical, you may also need medical help.

(II. LECTURE AND DISCUSSION, continued)

10. How should you throw a chemical away when you're through using it?

What to do depends upon the particular chemical. Look at the product's label and MSDS for disposal instructions.

You have to be especially careful when disposing of *some* products. For example, there are certain chemicals that you should never pour down the drain or throw in the trash. Remember that chemicals could hurt people outside the shop, or harm the environment.

The California State Board of Barbering and Cosmetology recommends these guidelines for disposal of waste materials in salons and shops:

- Acrylic nail liquid and powder can be mixed together into solid form and thrown away like household garbage.
- Quats *can* safely be poured down the drain.
- If the disposal information on a label or MSDS is not helpful, you can call the California Department of Health Services for advice. Call any Regional Office and ask for the Duty Officer. Be prepared to explain what chemical you want to discard, and how much. Phone numbers of Regional Offices are listed in **Handout A: Quick Summary**, which was passed out earlier today.
- You can also call your county's Environmental Health Department. Look in the "Government Pages" of your local phone book under "County Government Offices."

III. SMALL GROUP EXERCISE: CASE STUDIES (15 minutes)

In this exercise we will work in small groups. I'll give each group one Case Study describing a situation that could actually occur in a shop or salon. In each Case Study there is some problem that could lead to chemical accidents and injuries.

Your small group should read over its Case Study and try to answer all the questions that appear on the same page. You can use **Handout A: Quick Summary**, which was passed out earlier today, as reference material to help you answer the questions. You will have 15 minutes. This is *not* a test, and you won't have to turn your answers in.

Each small group should pick someone to be the recorder. The recorder will take notes on your discussion and report your group's answers to the entire class later on.

- **Break the class into small groups, with no more than 5 people in each group.**
- **From the two Case Studies at the end of this module (Handouts B and C), choose one for each small group. (If there are more than two groups, you may give the same Case Study to more than one group.)**
- **Give a copy of each group's Case Study to each person in that group.**
- **Make sure that each group chooses a recorder.**
- **Give the groups 15 minutes to work.**

IV. REPORT BACK AND DISCUSSION (15 minutes)

- **Bring the whole class back together.**
- **Read the class the first Case Study (Handout B). As you read the first question, ask the recorders from the small groups that worked on this Case Study each to give their group's answer to that question.**
- **Add any points that the recorders do not cover, and discuss the correct answer briefly. (Answers and Discussion Points are below.)**
- **Proceed to the next question.**
- **Continue in the same way with the rest of the questions and the other Case Study.**

Case Studies—Answers and Discussion Points

CASE STUDY #1 (See Handout B)

You have a client who wants a wash, cut, and set. She is going to a social dinner dance the next day, so she wants her set to look good. She likes to use an extra-firm hairspray that she knows will last overnight. You get out the hairspray she wants.

You notice that, while she is under the dryer, your client is chain smoking. Meanwhile, you pick up the hairspray can to read the label. You notice that it says: "Warning. Flammable. Keep away from sparks and open flames."

(a) Your client asks if she can smoke while you're combing her out. Should you let her? Why or why not?

Don't let her smoke because the hairspray is flammable.

(IV. REPORT BACK AND DISCUSSION, continued)

(b) What should you say to your client?

Explain that the hairspray is flammable and cannot be used when someone is smoking.

(c) What precautions should you take before using the hairspray, even after your client has stopped smoking?

Wait until after the client stops smoking. Then make sure all cigarette butts and ashes are completely out, and ashtrays which might have smoldering materials are removed from the area. Check to make sure there are no other sources of flame, heat, or sparks.

CASE STUDY #2 (See Handout C)

One day you go into your shop's storeroom to have lunch. The table where workers eat is next to a rack of open metal shelves. On the shelves are many bottles with different chemical products. You notice, on one shelf, three old brown bottles. They have no markings or labels, but there is a liquid inside. You wonder what it is.

You also see, on a high shelf, some other bottles. They are big and heavy, and very close to the edge. You worry that they might fall.

It's a warm day, and the storeroom seems hot and stuffy. You change your mind and decide to go outdoors to eat your lunch.

(a) What rules for chemical storage are being broken in this shop?

- Eating should not be allowed near a chemical storage area.

(IV. REPORT BACK AND DISCUSSION, continued)

- Chemicals should be kept in their original labeled containers so people know what they are.
- Large or heavy containers should not be stored on high shelves.
- Containers should be stored where they won't fall and spill.
- Chemical storage areas should be cool and well-ventilated.

(b) What suggestions would you make to improve this situation?

- The eating area should be moved to another part of the shop, away from chemicals.
- If someone knows *for sure* what's in the unmarked brown bottles, labels should be put on them. Otherwise, they should be thrown out (using proper disposal methods).
- The big, heavy containers should be moved to lower shelves.
- The upper shelves (with only small, light containers) should have guards to keep containers from falling.
- Install a ventilation system that takes old air out and brings in fresh air.

- **End the class.**

This ends our discussion of Preventing Chemical Injuries.

Handout A

Preventing Chemical Injuries

QUICK SUMMARY

When you work with chemicals, safety precautions are just as important as health precautions. If they're not used, stored, and disposed of properly, some chemicals in the shop can cause accidents that injure you, your co-workers, or your clients.

Flammable and combustible chemicals

Flammable and *combustible* chemicals catch on fire and burn easily. They can ignite when they are near:

- **a flame**—on a cigarette, match, candle, torch, or burner.
- **a spark**—from a light switch, electric plug, frayed cord, or electric appliance.
- **a hot object**—like a curling iron, stove, light bulb, or hot plate.

What products in the shop may be fire hazards?

Acetone, alcohol, nail polish, hairspray, styling gel, straightener solution, aerosol cosmetics, curl activators, and propane and butane propellants.

How can you find out if a product contains flammable or combustible chemicals?

- Read the product label—it may tell you. But don't trust the label completely.
- Get the Material Safety Data Sheet (MSDS) for the product.

Precautions to take with flammables and combustibles

- Be aware which chemicals you use may be fire hazards.

(see next page)

- Avoid flammables and combustibles in the first place. Try to use a safer chemical.
- Don't smoke near any chemicals but especially near flammable or combustible ones.
- Keep flammables and combustibles away from flames, sparks, or hot objects.
- Check your electrical equipment to make sure there are no broken or frayed cords that might spark or get hot.
- Don't try to warm up chemicals by putting them into a microwave oven or using a hot blow dryer on them.

Be prepared for a chemical fire

- Know where the fire extinguisher is and how to use it.
- Check the MSDS *before* there is a fire to see if there are any special firefighting instructions.
- Know how to call for emergency help and what to do until help arrives.
- Have first aid supplies available in the shop.

Types of fire extinguishers

Use the right fire extinguisher for each type of fire:

- **Class A Fires**—Ordinary combustible materials like wood, cloth, and paper.
- **Class B Fires**—Flammable liquids, gases, and greases.
- **Class C Fires**—Energized electrical equipment and electrical wiring.
- **Class D Fires**—Combustible metals like magnesium, titanium, and zinc.

(see next page)

Every fire extinguisher has a label indicating what class of fire it should be used for. A *multi-purpose* extinguisher is available that works on Class A, B, and C fires.

Chemical storage guidelines for the shop

- Store chemical products in their original labeled containers.
- Check the label *and* the MSDS for any special storage instructions.
- Store chemical products out of direct sunlight in a cool, dark place with good ventilation.
- Store each chemical in the proper kind of container.
- Never store chemical products near food, or near areas where people eat or smoke.
- Store all chemicals, especially flammables and combustibles, away from flames, sparks, heat, and other hot objects. Use fire-proof metal cabinets for highly flammable chemicals.
- Close the container tightly.
- Store chemicals in a secure place where their containers will not fall and spill. Use guards along the front of shelves to keep containers from falling.
- Don't store large, heavy containers on high shelves.
- Don't store chemicals with acids in them near chemicals with bases. These are called *incompatible* chemicals.

In case of a spill or leak

- Clean up chemical spills or leaks immediately. (Check the MSDS first for special cleanup instructions for that particular chemical.)
- If you get a hazardous chemical on your clothes, on your skin, or in your eyes, remove affected clothing and flush your skin or

(see next page)

eyes with water for at least 15 minutes. Have emergency *eye wash stations*. Depending on the chemical, you may also need medical help.

Chemical disposal

- Consult each product's label or MSDS for disposal instructions.
- *Some* chemical products should never be poured down the drain or thrown in the trash.
- According to California Board of Barbering and Cosmetology guidelines for disposal of waste materials:
 - Acrylic nail liquid and powder can be mixed together into solid form and thrown away like household garbage.
 - Quats *can* be safely poured down the drain.
 - You can call the California Department of Health Services for disposal advice. Phone these numbers and ask for the Duty Officer:

Regional Offices

Northern California

Sacramento
(916) 855-7773

Berkeley
(510) 540-2122

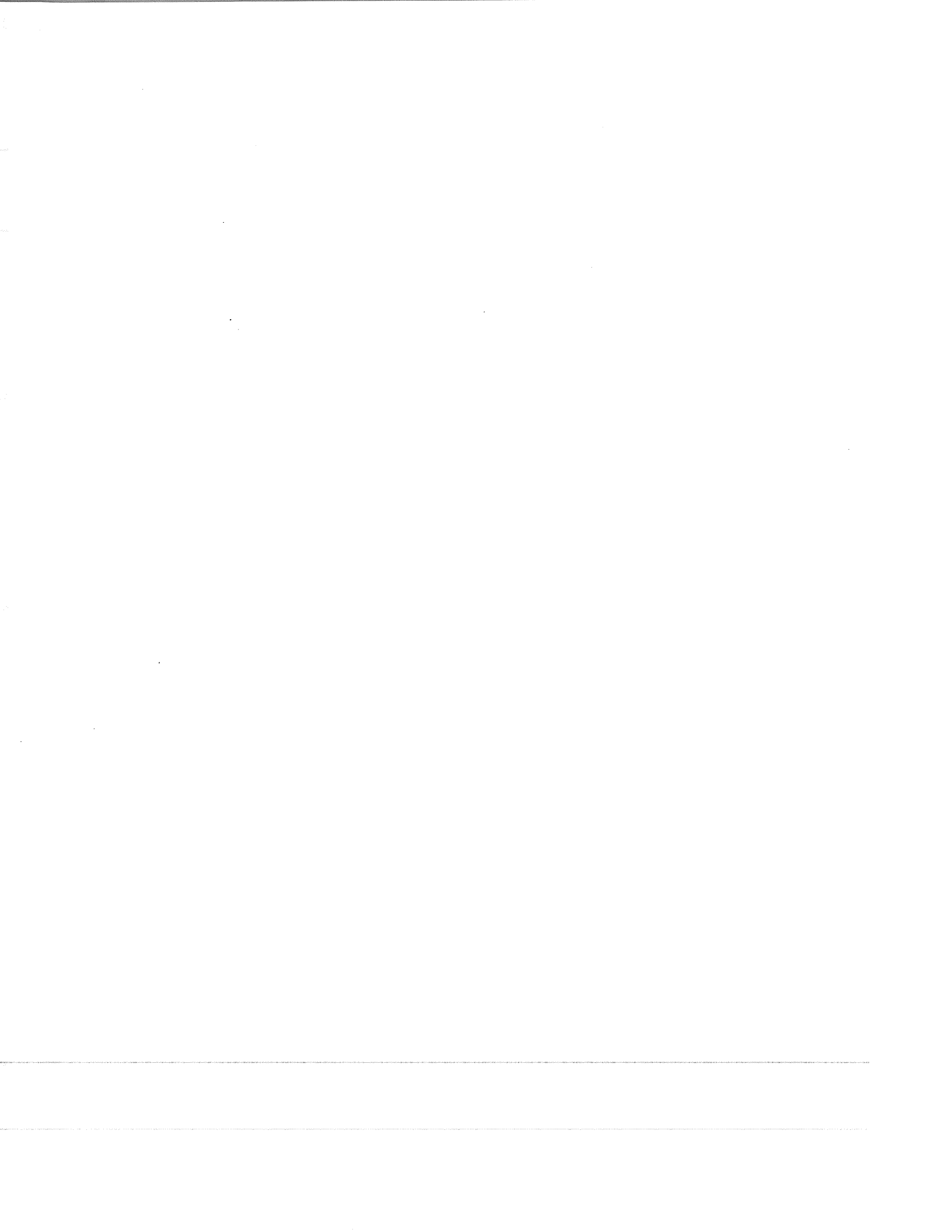
Fresno
(209) 445-5938

Southern California

Burbank
(818) 567-3000

Long Beach
(310) 445-5938

- You can also call your county's Environmental Health Department. Look in the "Government Pages" of your local phone book under "County Government Offices."



Handout C Preventing Chemical Injuries

CASE STUDY #2

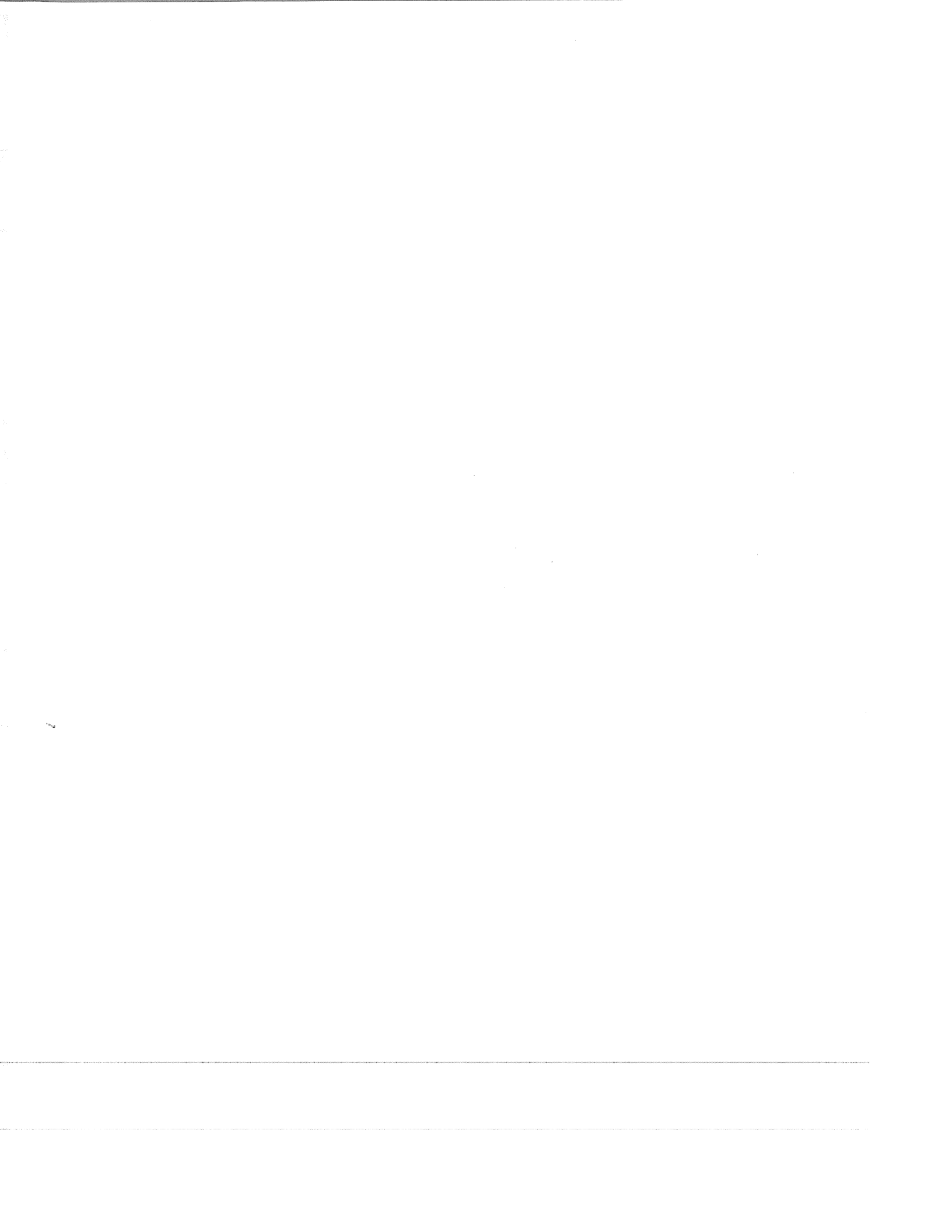
One day you go into your shop's storeroom to have lunch. The table where workers eat is next to a rack of open metal shelves. On the shelves are many bottles with different chemical products. You notice, on one shelf, three old brown bottles. They have no markings or labels, but there is a liquid inside. You wonder what it is.

You also see, on a high shelf, some other bottles. They are big and heavy, and very close to the edge. You worry that they might fall.

It's a warm day, and the storeroom seems hot and stuffy. You change your mind and decide to go outdoors to eat your lunch.

(a) What rules for chemical storage are being broken in this shop?

(b) What suggestions would you make to improve this situation?



Protecting Yourself From Hazardous Chemicals/Part 1

OBJECTIVES

After completing this module, students will be able to:

- List the five key ways to reduce health or safety hazards from chemicals.
- Discuss three of these methods: substitution, isolation, and ventilation. (*More methods in Module 7.*)
- Explain the use of each method.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION. What can you do to protect yourself from the health and safety hazards of chemicals?	10 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart.
II. LECTURE AND DISCUSSION. What are the five key ways to reduce chemical hazards? How can substitution, isolation, and ventilation be used in the shop?	30 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart. • Handout A: <i>Quick Summary.</i>
III. SMALL GROUP EXERCISE. How could chemical hazards be reduced in a typical shop?	10 minutes	<ul style="list-style-type: none"> • School's clinic area with client chair and typical equipment.
IV. REPORT BACK AND DISCUSSION. What suggestions do students have after inspecting the school's clinic area?	10 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION (10 minutes)

- **Explain objectives of this module to the class. (See OBJECTIVES on previous page.)**
- **Introduce this “brainstorming” exercise.**

Now that we have learned about hazardous chemicals in the shop, think about how you would protect yourself from both *health* and *safety* hazards as you work with chemicals. We’re going to list on the board some ways that you can protect yourself.

- **Write on the board: WAYS TO PROTECT YOURSELF FROM CHEMICALS.**
- **Ask the class:**

If you were giving a permanent wave, how would you keep the perm solution away from your skin?

- **The class should suggest wearing *gloves*. Write *gloves* on the board.**

If you work with a styling gel which is flammable, how could you protect yourself against fire?

- **The class might suggest a *fire extinguisher*, *fireproof storage cabinet*, or *no smoking sign*. Write these on the board.**

Can you think of some other ways to protect yourself from chemicals?

(I. INTRODUCTION, continued)

- **List methods on the board as people suggest them.**

After a few minutes, your list may include:

gloves	goggles
apron	safety glasses
respirator	fire extinguisher
no smoking	storage cabinet
ventilation	training
dust mask	using safer chemicals

- **Don't worry about covering all possible methods during this short exercise. Each method will be covered in more detail later.**

II. LECTURE AND DISCUSSION (30 minutes)

- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *What is the best way to prevent illness or injury from hazardous chemicals?*

The best way to protect yourself is to *stop* your exposure to dangerous chemicals and their hazards altogether, or to *reduce* your exposure as much as possible.

2. *What methods help stop or reduce exposure to harmful chemicals?*

The different methods are usually grouped into five categories:

Five Key Ways to Reduce Chemical Hazards

1. **Avoid hazardous chemicals.**
2. **Isolate the work process.**
3. **Use ventilation.**
4. **Work in a safe way.**
5. **Use personal protective equipment (sometimes called "PPE").**

- **Write this list on the chalkboard so the class can refer to it throughout today's lesson.**

We'll discuss the first three methods today. The last two (*work in a safe way* and *use personal protective equipment*) will be covered in the next class.

3. **How can you "avoid hazardous chemicals"?**

- **Use a safer product.** You can substitute a safer product for a more hazardous one. For example, if you stop using hairspray and use wet styling aids instead, you won't be inhaling the hairspray chemicals into your lungs.

Of course, make sure that you are not switching to a product that is just as dangerous as the original one. For example, the wet styling aid itself may contain some hazardous chemicals, which can be absorbed through the skin. So you should use gloves. Some wet styling aids may also be flammable. But in general, they are less of a hazard than hairspray, so it's worth making the switch.

(II. LECTURE AND DISCUSSION, continued)

- **Use a safer process.** You can substitute a safer process for a harmful one. For example, if you stop doing chemical hair relaxing and use heat pressing instead, you have eliminated the chemical exposure entirely. (Of course there could still be health and safety hazards—heat and electricity.)

4. **How can you “isolate the work process”?**

Another way to reduce exposure to harmful chemicals is to isolate the work process—in other words, do the work away from other people. For example, you could mix all chemicals in a separate room that has good ventilation. That way, people in the main work area won't be exposed to the chemicals while they are being mixed.

Of course, you should make sure that the mixing area has gloves, aprons, and goggles readily available. People who do the mixing need protection too. Also be sure that no eating, drinking, or smoking is allowed in the mixing area.

Another example of isolating a process—do nails in a separate area of the shop, since nail processes create vapors and dusts.

5. **How does ventilation reduce hazards?**

Ventilation is a system that either:

- Removes harmful chemicals from the air before you can breathe them in, or
- Supplies enough fresh air to dilute the harmful chemicals in the air.

There are two main types of ventilation: *local exhaust ventilation* and *general dilution ventilation*.

(II. LECTURE AND DISCUSSION, continued)

6. How does local exhaust ventilation work?

Local exhaust ventilation is the most effective type of ventilation. It removes harmful chemicals from the air at the place where they are being used. It pulls chemical vapors away before they spread into the room and into your breathing space.

A local exhaust ventilation system consists of a hood, ducts, a fan to move the air, and sometimes an air cleaner.

7. What local exhaust ventilation systems are used in salons?

One type of local exhaust ventilation system used in salons is the *vented manicure table*. There are several different types of vented manicure tables. These tables are used when working on a client's nails because many nail processes create powerful chemical vapors and nail dust.

Local exhaust ventilation is built into the table, and protects both workers and clients. An internal fan creates suction that pulls chemical vapors and dust away from the client's hand and out through a duct.

Whenever possible, a system like this should be set up to vent the vapors outdoors. It should *not* exhaust them back inside the shop. Sometimes all that's needed is to run the duct outside through a window.

One special type of vented table is able to circulate the air back into the shop safely. It contains filters which clean the air before it is recirculated. Separate filters are used to capture vapors (charcoal filters) and nail dust (dust filters). Filters are located under the table.

Both charcoal filters and dust filters *must be changed on a regular basis*. They can fill up with vapor and dust, and then stop working.

(II. LECTURE AND DISCUSSION, continued)

8. What is a fume hood?

One type of ventilation that can be used when *mixing* chemicals is a *fume hood*. This is a local exhaust ventilation system that pulls vapors away right at the point where the mixing is done. Fume hoods can be purchased from safety supply stores. They must be installed by a health and safety professional.

Sometimes the mixing area and fume hood are in a separate room away from the main work area, so the shop is using two kinds of protection—isolating the process as well as ventilation.

9. How do you decide where to place a local exhaust ventilation system?

- Place the system so it captures vapors and dust *close* to the point where they are produced.
- Place it so it draws the vapors and dusts *away* from you, *not* past your nose and mouth.
- Don't place your system near a door, or where there is a lot of foot traffic, because people passing by can disturb the air currents and interfere with the system.
- Never place a general purpose fan in a position where it blows air across your local exhaust ventilation system. That could ruin the ability of the system to capture chemicals.
- Consult an industrial hygienist (a health and safety specialist) or a ventilation engineer before purchasing, installing, or deciding how to position a local exhaust ventilation system.

(II. LECTURE AND DISCUSSION, continued)

10. How do you keep a local exhaust ventilation system in good condition?

- Be sure that it is maintained properly. Learn how to test the system yourself for correct air flow. Do it on a regular schedule.
- Change filters regularly. Remember that some systems have more than one filter—a charcoal filter for chemicals as well as a dust filter.

11. What is general dilution ventilation?

General dilution ventilation brings fresh air into a room to keep harmful substances thinned out (diluted). That way there is a lower concentration of chemical vapors in the air. This is the kind of ventilation system that is used in most shops and salons.

Dilution ventilation can be either *mechanical* or *natural*.

A *mechanical* system uses fans and vents. The system removes stale air and supplies replacement air. The air it supplies is usually a mixture of fresh air from the outdoors and air that has been recirculated through the building the shop is in. An engineer can adjust this mixture and increase the amount of fresh air. Discuss it with the building owner if there is a problem.

Natural ventilation means providing fresh air by opening windows or doors. Natural ventilation cannot always be used. It may be too cold or wet to open windows or doors. Or windows and doors may not be placed in the right position to bring fresh air into the shop.

If your shop is in a mall, you can get natural ventilation by opening doors and windows into the mall as long as the mall air is clean and fresh.

(II. LECTURE AND DISCUSSION, continued)

Neither type of dilution ventilation—mechanical or natural—is the best way to prevent exposure to chemicals. This ventilation doesn't actually remove chemicals from the air, it just thins them out. This kind of ventilation is not really designed to protect you against chemical hazards. It's only intended as a way to control temperature, humidity, and mild odors. With chemicals that are less harmful, however, dilution ventilation is better than no ventilation at all.

Local exhaust ventilation, when it can be used, is a better way to reduce chemical hazards because it actually removes the chemicals from the air.

12. How do you decide where to place general dilution ventilation?

The most important point is that you should never place the source of fresh air (whether it is a fan or a window) so that the air blows chemicals into your face. You always want to let the air carry the chemicals *away* from you, not *toward* you. (Look at Graphic #1 in **Handout A: Quick Summary** for an illustration.)

An industrial hygienist or ventilation engineer can help you figure out the best way to position a dilution ventilation system in your work area.

III. SMALL GROUP EXERCISE (10 minutes)

- **Do this exercise in your school's clinic area.**
- **Break the class into small groups, with no more than 5 people in each group.**
- **Explain the exercise.**

We've looked at three ways to protect yourself from chemical health and safety hazards: *avoid hazardous chemicals, isolate the process, and use ventilation*. Now let's apply these three methods to an actual work area.

In your small groups, spend ten minutes walking through our school's clinic area. Think about how you might use each of these three methods to reduce chemical hazards.

You may want to make some notes as you walk through the shop. We'll all get back together later to discuss your ideas.

IV. REPORT BACK AND DISCUSSION (10 minutes)

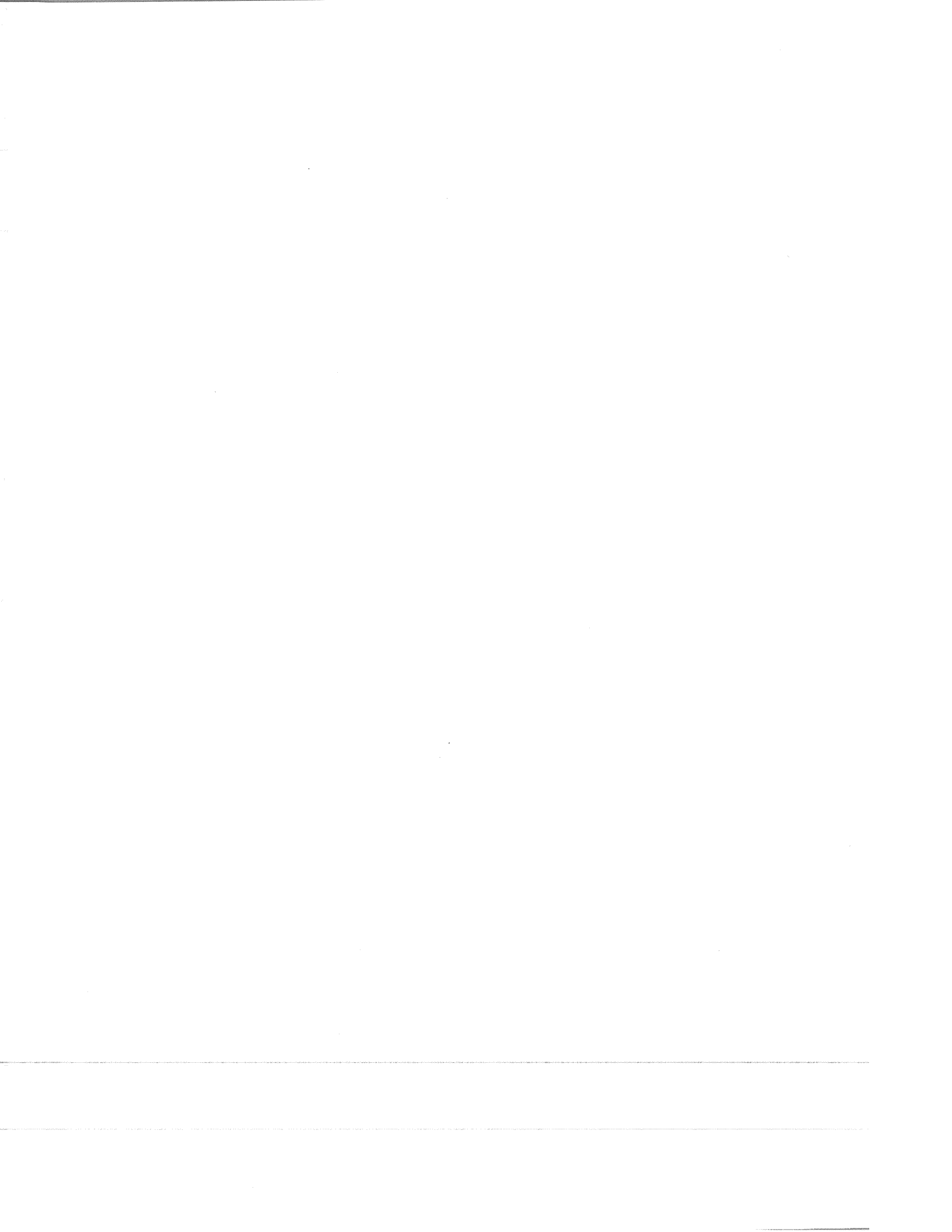
- **Bring the whole class back together.**
- **Make three columns across the board:**
 - 1) **AVOID HAZARDOUS CHEMICALS,**
 - 2) **ISOLATE THE PROCESS,** and
 - 3) **USE VENTILATION.**
- **Ask students to suggest ideas for applying these three methods in the clinic area. Write each suggestion on the board under the appropriate heading.**
- **Add any points you feel students have missed.**
- **Encourage students to refer to Handout A for more ideas.**
- **Here are a few items you might have on your completed chart:**

AVOID HAZARDOUS CHEMICALS	ISOLATE THE PROCESS	USE VENTILATION
<ul style="list-style-type: none">• Find products with safer chemicals.• Use wet styling aids instead of hairspray.	<ul style="list-style-type: none">• Don't mix or store chemicals in the lunch area.• Mix chemicals in a separate room.• Do manicures in a separate part of the shop.	<ul style="list-style-type: none">• Use a vented manicure table.• Make sure filters on the manicure table and other ventilation systems are changed regularly.

(IV. REPORT BACK AND DISCUSSION, continued)

- **End the class.**

We've just discussed three ways to protect yourself against chemicals: *avoid hazardous chemicals, isolate the process, and use ventilation*. In the next class we'll continue this subject and focus on two more methods of protection: *work in a safe way and use personal protective equipment*.



Handout A

Protecting Yourself From Hazardous Chemicals/Part 1

QUICK SUMMARY

The best way to prevent illness and injury from chemicals is to *stop* your exposure to dangerous chemicals and their hazards altogether, or to *reduce* your exposure as much as possible.

Five Key Ways to Reduce Chemical Hazards

1. **Avoid hazardous chemicals.**
2. **Isolate the work process.**
3. **Use ventilation.**
4. **Work in a safe way.**
5. **Use personal protective equipment (PPE).**

This lesson covered the first three methods above. Part 2 (Module 7) will cover the last two.

1. AVOID HAZARDOUS CHEMICALS

- ▼ Use a safer product.
Example:
 - Use wet styling aids instead of hairspray.
 - Use pump spray instead of aerosol spray.
- ▼ Use a safer process.
Example:
 - Do heat pressing instead of chemical hair relaxing.

2. ISOLATE THE WORK PROCESS

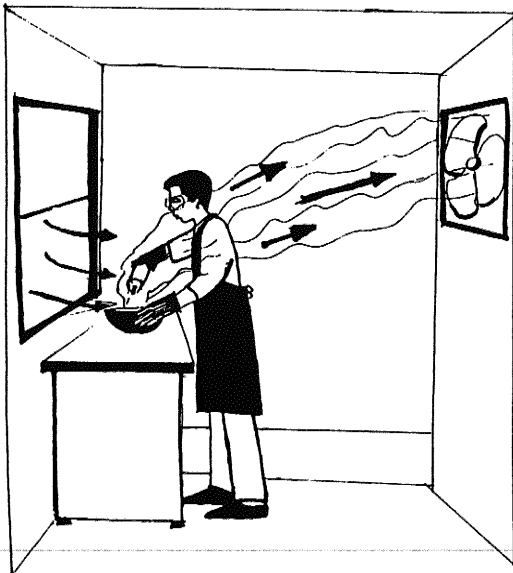
- Examples:**
- Mix chemicals in a separate vented room.
 - Do nails in a separate vented area.

(see next page)

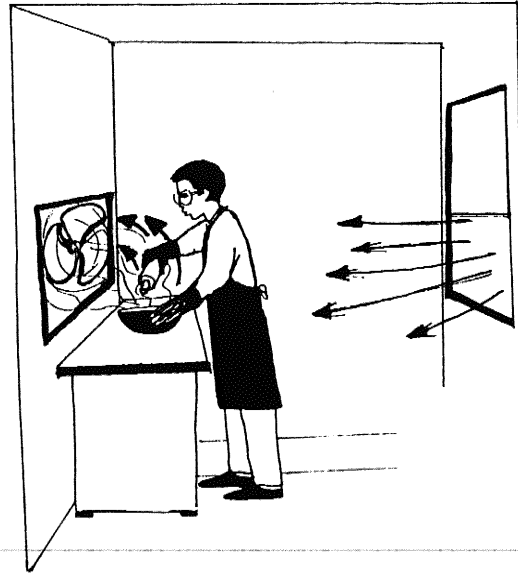
3. USE VENTILATION

- ▼ Use local exhaust ventilation (like a vented manicurist's table or a fume hood).
 - Very effective— removes chemicals before they get in the air.
 - Place near source of vapors and dusts.
 - Best systems vent vapors and dust outdoors, not back into the shop.
 - Systems which recirculate air need filters. Some have a separate charcoal filter for vapors, and a dust filter for dusts.
 - Place the system so it draws air away from you, not past your nose and mouth.
 - Don't place near a door, busy foot traffic area, or fan.
 - Get professional advice when buying or installing.
 - Test air flow, change filters, and maintain the system regularly.

- ▼ Use general dilution ventilation.
 - Not designed for chemical hazards, but may be the only ventilation you have.
 - May be mechanical or natural.
 - Mechanical systems remove stale air and supply replacement air. Replacement air is a mix of fresh air and recirculated air. An engineer can adjust the mix.
 - Position system so it blows chemicals away from you, not towards you. (See Graphic #1.)
 - Natural ventilation means opening windows and doors (weather permitting).



bad ventilation



good ventilation

Graphic #1

Protecting Yourself From Hazardous Chemicals/Part 2

OBJECTIVES

After completing this module, students will be able to:

- Recall the five key ways to reduce health or safety hazards from chemicals.
- Discuss two of these methods: safe work practices and personal protective equipment. (*More methods in Module 6.*)
- Explain the use of each method.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION AND REVIEW. What are the five key ways to reduce chemical hazards?	10 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart.
II. LECTURE AND DISCUSSION. What are some safe work practices to follow when you use chemicals? What are the types of personal protective equipment?	30 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart. • Handout A: <i>Quick Summary.</i>
III. GROUP EXERCISE. What's wrong with this picture?	20 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart. • Handout B: <i>What's Wrong With This Picture?</i>
Total Time: 1 Hour		

I. INTRODUCTION AND REVIEW (10 minutes)

- **Explain objectives of this module to the class.**
(See OBJECTIVES on previous page.)

In the last class, we saw that the different ways you can reduce chemical hazards at work are often grouped into five categories:

Five Key Ways to Reduce Chemical Hazards

- 1. Avoid hazardous chemicals.**
- 2. Isolate the work process.**
- 3. Use ventilation.**
- 4. Work in a safe way.**
- 5. Use personal protective equipment (sometimes called "PPE").**

- **Write this list on the chalkboard.**

We covered three of these methods in the last class—*avoid hazardous chemicals, isolate the process, and use ventilation*. In this class, we'll look at the last two methods—*work in a safe way and use personal protective equipment*.

Before we begin, let's review what we learned last time.

- **Ask the class:**

(I. INTRODUCTION AND REVIEW, continued)

Who can give an example of “avoiding hazardous chemicals”?

Possible answers are:

- Use heat pressing instead of chemical hair relaxing.
- Use wet styling aids instead of hairspray.
- Use pump spray instead of aerosol spray.

Who can give an example of “isolating the process”?

Possible answers are:

- Mix chemicals in a separate, well-ventilated room.
- Do nails in a separate area of the shop.

Who remembers which kind of ventilation is best, and why?

Answer:

Local exhaust ventilation is better than general dilution ventilation. Local exhaust ventilation actually *removes* chemicals from the shop.

Who can give an example of a local exhaust ventilation system used in the shop or salon?

Answer:

A fume hood or a vented manicure table.

Now let's turn to two more ways to reduce chemical hazards.

II. LECTURE AND DISCUSSION (30 minutes)

- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *When you use chemicals, how do you “work in a safe way”?*

Working safely with chemicals means that both the individual technician and the whole shop should follow certain guidelines, sometimes called *safe work practices*.

The shop should set up a written list of “do’s and don’ts,” or other rules, for every operation that uses chemicals. Every technician should get a copy of these rules and understand them. It’s a good idea for the whole shop to meet and go over these guidelines together. The guidelines will help protect both you and your clients.

Now let’s look at some of the guidelines that should be on your list. We’ve seen many of them before in other classes, but today we’ll try to put them all together.

(II. LECTURE AND DISCUSSION, continued)

2. **Chemical Storage: What are some guidelines for storing chemicals properly?**

DO:

- Store chemicals in their original labeled containers. It could be dangerous if someone doesn't know what they are.
- Close containers securely when storing them.
- Use a fireproof metal cabinet for flammable chemicals.

DON'T:

- Don't store chemicals where they will be exposed to heat or sunlight.
- Don't store chemicals where containers can fall and spill.
- Don't store flammable chemicals near sparks, open flames, lit cigarettes, or other possible sources of ignition.
- Don't store chemicals near food, or near eating areas.
- Don't store *incompatible* chemicals near each other. (Incompatibles are chemicals that can react with each other if they mix, like acids and bases.)

3. **Chemical Disposal: What are some guidelines for throwing chemicals away after you're done with them?**

Disposal guidelines depend upon the particular chemical. You have to be especially careful when disposing of some products.

(II. LECTURE AND DISCUSSION, continued)

DON'T:

- Don't pour dangerous chemicals down the sink drain.
- Don't throw dangerous chemicals in the regular trash.

DO:

- Check the label or MSDS for specific disposal instructions. Remember, the chemicals could hurt people outside the shop, or harm the environment.
- Follow California State Board of Barbering and Cosmetology guidelines for waste disposal:
 - Acrylic nail liquid and powder can be mixed together into solid form and thrown away like household garbage.
 - Quats *can* be poured down the sink.
 - For more information on chemical disposal, call your regional office of the California Department of Health Services, your county Environmental Health Department, or your local sewer district.

4. Chemical Mixing: What are some guidelines for mixing chemicals properly?

DON'T:

- Don't mix chemicals near food, or near eating areas.

DO:

- Set up a special area just for chemical mixing.
- Make sure the mixing area has good ventilation (like a fume hood).

(II. LECTURE AND DISCUSSION, continued)

- Make sure the mixing area has aprons, gloves, and goggles or other eye protection available.
- Make sure the mixing area has an emergency eye wash, and a place nearby to wash your hands.

5. *Eating/Smoking Policies: What guidelines should the shop have for eating, drinking, and smoking?*

Smoking creates heat and flame. These can make some chemicals burn or explode.

Also, eating, drinking, and smoking all involve putting things into your mouth. If your food, drink, or cigarettes have been contaminated by nearby chemicals or their vapors, you may end up swallowing those toxic substances.

DON'T:

- Don't eat, drink, or smoke around chemicals.

DO:

- Have separate areas available for eating, drinking, and smoking.

6. *Good Housekeeping: What are some guidelines for "good housekeeping" in the shop?*

DO:

- Keep areas where chemicals are used clean, neat, and dry.
- Clean up all spills right away.
- Use proper cleanup methods. (For example, clean up dusts and powders with a damp cloth or wet

(II. LECTURE AND DISCUSSION, continued)

mop. Don't sweep them up—sweeping puts them back in the air.)

- Keep all safety equipment in good working order.
- Test ventilation equipment regularly to make sure it's working properly.

7. *Work Scheduling: How can a different work schedule reduce your exposure to chemicals?*

If you do a lot of client services that involve strong chemicals, like perms, space them out through the day. That way, you won't be exposed to the same chemicals continuously. The shop's schedule shouldn't require anyone to do the same process all day long.

8. *Chemical Inventory: What chemical information should be kept in the shop?*

Employers are required by law to have certain information about chemicals on hand:

- An inventory that lists all hazardous chemicals used in the shop.
- A Material Safety Data Sheet (MSDS) for each hazardous chemical.

9. *Information and Training: What should your guidelines say about giving workers information and training?*

Your shop's guidelines should say that every employee has a right to get information and training about the hazards at work. In fact, this right is guaranteed by law.

The training should include:

(II. LECTURE AND DISCUSSION, continued)

- What specific hazards there are in the shop.
- How people can protect themselves.
- Where MSDSs are kept, and how to read them.
- What health and safety rules should be followed in the shop.
- What health and safety rights workers have under the law.

This information can be passed along through group training sessions, “one-on-one” discussions, or written materials. The information should be given in a way that everyone can understand. It might be necessary to translate training materials and classes into different languages.

10. *Emergency Planning: What are some guidelines for chemical emergencies?*

A chemical emergency might be a fire, an explosion, a spill, or someone being splashed by chemicals or overcome by vapors.

DO:

- Keep emergency equipment in the shop, like fire extinguishers, eye washes, and first aid kits.
- Know what to do in an emergency. Read all directions and warnings printed on chemical products *before* there’s an accident.
- If you get a hazardous chemical on your skin or clothes, remove affected clothing, flush your skin with water for 15 minutes, and get medical attention if necessary.
- Check the MSDS for information on handling emergencies.

(II. LECTURE AND DISCUSSION, continued)

DON'T:

- Don't try to fight a chemical fire unless you know how that chemical behaves.
- Don't try to fight a chemical fire unless you have the right kind of fire extinguisher for that chemical.
- Don't try to clean up a large chemical spill unless you know the right way to clean up that chemical.

- **Point out the list you wrote on the board before: *Five Key Ways to Reduce Chemical Hazards.***

Now we'll turn to the last of the Five Key Ways to Reduce Chemical Hazards: personal protective equipment.

11. What is personal protective equipment (PPE)?

Personal protective equipment (sometimes called *PPE*) is any piece of equipment that is designed to protect you from chemicals by placing a barrier between you and the chemical. Some examples are gloves, aprons, chemical goggles, respirators, and dust masks.

PPE is *not* the best way to protect yourself from chemicals. Unlike some of the other methods of protection, PPE doesn't remove the hazard from the shop. It only *shields* you from the hazard. It's better to get rid of the hazard altogether. Besides being less effective, some PPE can also be uncomfortable and awkward to use.

Still, *always* use PPE whenever the hazard can't be removed in some other way. It's a lot better than no protection at all. In many shops, which don't have better protective equipment, PPE is the *only* protection you have.

(II. LECTURE AND DISCUSSION, continued)

12. When should you wear gloves, and what kind should you use?

You should use special gloves to protect your hands and forearms whenever you work with chemicals. These are *not* ordinary gloves. They are specially designed for chemicals.

There are different types of gloves for different chemicals. You must use the right glove for the chemical you are working with. For example, if you're working with a hair relaxer that contains sodium hydroxide, then you must use a glove that will keep out sodium hydroxide. The glove's package should tell you which chemicals the glove is designed for.

Gloves keep chemicals out only for a limited time. For example, a glove may be effective against sodium hydroxide for only 15 minutes. After that, the glove starts to break down and the sodium hydroxide starts to get through. The length of time the glove will work well is called *breakthrough time*. When the breakthrough time is up, throw the glove away and use a new one. Look for a glove's breakthrough time on the package, or check with the manufacturer or dealer.

Many gloves are designed to be disposable. That means you should throw the glove away after using it once. If you keep using the glove, the chemical could start to get through. You might not even realize it.

Always wash your hands after you've been using gloves, or when you change gloves.

13. How can you protect your eyes?

From Splashes:

Chemical splash goggles are plastic goggles that you wear to protect your eyes from chemical splashes. It is a good idea to wear them whenever you are mixing or using a chemical product that could splash into your eyes. The goggles form a seal around your eyes.

(II. LECTURE AND DISCUSSION, continued)

Some types of goggles have side vents to allow air in. This keeps them from fogging up. The vents are designed so that splashing chemicals can't get through into the goggles.

From Flying Particles:

Flying particles, like nail fragments or nail dust, can be hazardous to your eyes. You can get some protection by wearing any kind of glasses (goggles, prescription glasses, or even sunglasses).

Special *safety glasses* offer better protection. They have *side shields* to protect your eyes from particles coming from the side.

14. What clothing can protect you from chemicals?

For certain chemical processes, you may want to wear an apron or smock. These coverings can keep chemicals off your street clothes and skin. It's best to use an apron or smock which is made of plastic or some other material that will keep out chemicals. Cloth will not do that job since it absorbs chemicals.

However, don't wear a plastic apron or smock when doing thermal processes. If hot equipment touches the plastic material, the plastic could melt.

15. How does a dust mask protect you?

Dust masks are white paper masks that cover your nose and mouth. They have straps to hold them against your face. They look like surgical masks used in hospitals, except that they usually have a metal band you can bend to fit around your nose.

A dust mask protects you *only* from dusts, not from chemical vapors. So never use a dust mask if you're trying to keep vapors out. You will still be breathing in the chemical.

(II. LECTURE AND DISCUSSION, continued)

For example, when you do a manicure there are usually two different chemical problems—vapors and nail dust. If you wear a dust mask, it will keep only the nail dust out of your nose and mouth. The chemical vapors will go through the dust mask. For the vapors, you need something else—like a vented manicure table or a *chemical cartridge respirator*.

16. What is a chemical cartridge respirator?

These are masks with special cartridges in them to capture chemical vapors and clean the air as you breathe it. They are hardly ever used by barbers and cosmetologists. They must be individually fitted to your face, and you must receive special training in how to use and maintain them.

17. How do you get the protective equipment you need?

OSHA rules say that the *employer* is responsible for supplying all necessary protective equipment. If you are an employee, your employer should have it available for you in the shop. If you're an owner or employer, you need to decide what your shop needs and where to get it. Independent contractors must supply their own protective equipment.

Many sources of safety products and supplies are listed in the phone book (Yellow Pages). These dealers usually have a wide range of gloves, goggles, safety glasses, aprons, and dust masks. Most of them also stock fire extinguishers, eye wash stations, warning signs, first aid kits, and other equipment.

Get catalogs from the dealers, and try to get samples of the items you need. Test the samples in the shop for a while. Does the product work? Do people like it? Is it comfortable? Is it practical and easy to use? If you don't like a product, get a sample of something else and try again.

(II. LECTURE AND DISCUSSION, continued)

Remember that some protective equipment has to be the right type for the chemical you are using. With gloves, for example, make sure you are using a type that's designed for the right chemical.

When you finally decide which protective equipment to buy, remember to keep an adequate supply on hand all the time.

III. GROUP EXERCISE (20 minutes)

- **Distribute Handout B: *What's Wrong With This Picture?***

We have now finished looking at the five ways you can protect yourself against chemicals at work. Remember that they are:

Five Key Ways to Reduce Chemical Hazards

- 1. Avoid hazardous chemicals.**
- 2. Isolate the work process.**
- 3. Use ventilation.**
- 4. Work in a safe way.**
- 5. Use personal protective equipment (sometimes called "PPE").**

- **This list should already be on the board from Section I.**

The drawing in **Handout B** shows a typical work situation in a salon. In the drawing, several things are wrong— there are chemical hazards and workers aren't taking the proper precautions. Using what we have learned, we're going to decide what kind of protective measures should be *added* in the picture to make the situation safe.

Look at the picture.

- **Ask the class:**

What's wrong with this picture?

(III. GROUP EXERCISE, continued)

- | |
|--|
| <ul style="list-style-type: none">• At the top left of the chalkboard, make a heading: PROBLEM. Under this heading, list students' answers in one column down the left side of the board. |
|--|

Possible answers are:

PROBLEM

- Client is smoking while hairspray is being applied.
- Food and drink are on counter while technician is working.
- Technician is mixing chemicals right next to the client area.
- Technician is mixing chemicals without wearing gloves or goggles.
- Manicure/sculptured nails table has no ventilation.
- Manicurist is not wearing gloves or a dust mask.
- Window is closed, cutting down on fresh air in the shop.
- Cotton balls, which may be saturated with chemicals, are on the floor.
- Heavy containers are stored on high shelves.
- Container in storage area is open, allowing vapors to get in the air.
- There is no fire extinguisher in the shop.

(III. GROUP EXERCISE, continued)

- **After a few minutes, if students haven't mentioned all the problems, give them the rest of the answers. Also write them on the board.**
- **Next, go over the hazards shown in the list on the board. For each hazard, ask the class:**

What protective measures could you use to solve this problem?

- **On the board, begin a right-hand column and head it PROTECTION. List students' answers in this column, next to the appropriate hazard.**
- **If students need help, ask them to look over the suggestions in Handout A.**
- **A completed list on the chalkboard might look like this (next page):**

(III. GROUP EXERCISE, continued)

PROBLEM	PROTECTION
<ul style="list-style-type: none">• Client is smoking while hairspray is being applied.	<ul style="list-style-type: none">• Enforce a no-smoking policy in the salon.
<ul style="list-style-type: none">• Food and drink are on counter while technician is working.	<ul style="list-style-type: none">• Do not allow food or drink in the work area.• Provide a place to eat away from chemicals.
<ul style="list-style-type: none">• Technician is mixing chemicals right next to the client area.	<ul style="list-style-type: none">• Mix chemicals in a separate area that has good ventilation.
<ul style="list-style-type: none">• Technician is mixing chemicals without wearing gloves or goggles.	<ul style="list-style-type: none">• Technician should wear gloves and goggles while mixing chemicals.
<ul style="list-style-type: none">• Manicure/sculptured nails table has no ventilation.	<ul style="list-style-type: none">• Get a vented manicure table.
<ul style="list-style-type: none">• Manicurist is not wearing gloves or a dust mask.	<ul style="list-style-type: none">• Manicurist should wear gloves and a dust mask if filing or grinding.
<ul style="list-style-type: none">• Window is closed, cutting down on fresh air in the shop.	<ul style="list-style-type: none">• Open the window (weather permitting) to increase the amount of fresh air in the room.
<ul style="list-style-type: none">• Cotton balls, which may be saturated with chemicals, are on the floor.	<ul style="list-style-type: none">• Dispose of used materials properly.
<ul style="list-style-type: none">• Heavy containers are stored on high shelves.	<ul style="list-style-type: none">• Store heavy items on lower shelves.
<ul style="list-style-type: none">• Container in storage area is open, allowing vapors to get in the air.	<ul style="list-style-type: none">• Keep all containers closed when not in use to prevent vapors from escaping.
<ul style="list-style-type: none">• There is no fire extinguisher in the shop.	<ul style="list-style-type: none">• Get a fire extinguisher of the right type.

- **End the class.**

This concludes our series of two classes on Protecting Yourself From Hazardous Chemicals.

Handout A

Protecting Yourself From Hazardous Chemicals/Part 2

QUICK SUMMARY

The best way to prevent illness and injury from chemicals is to *stop* your exposure to dangerous chemicals and their hazards altogether, or to *reduce* your exposure as much as possible.

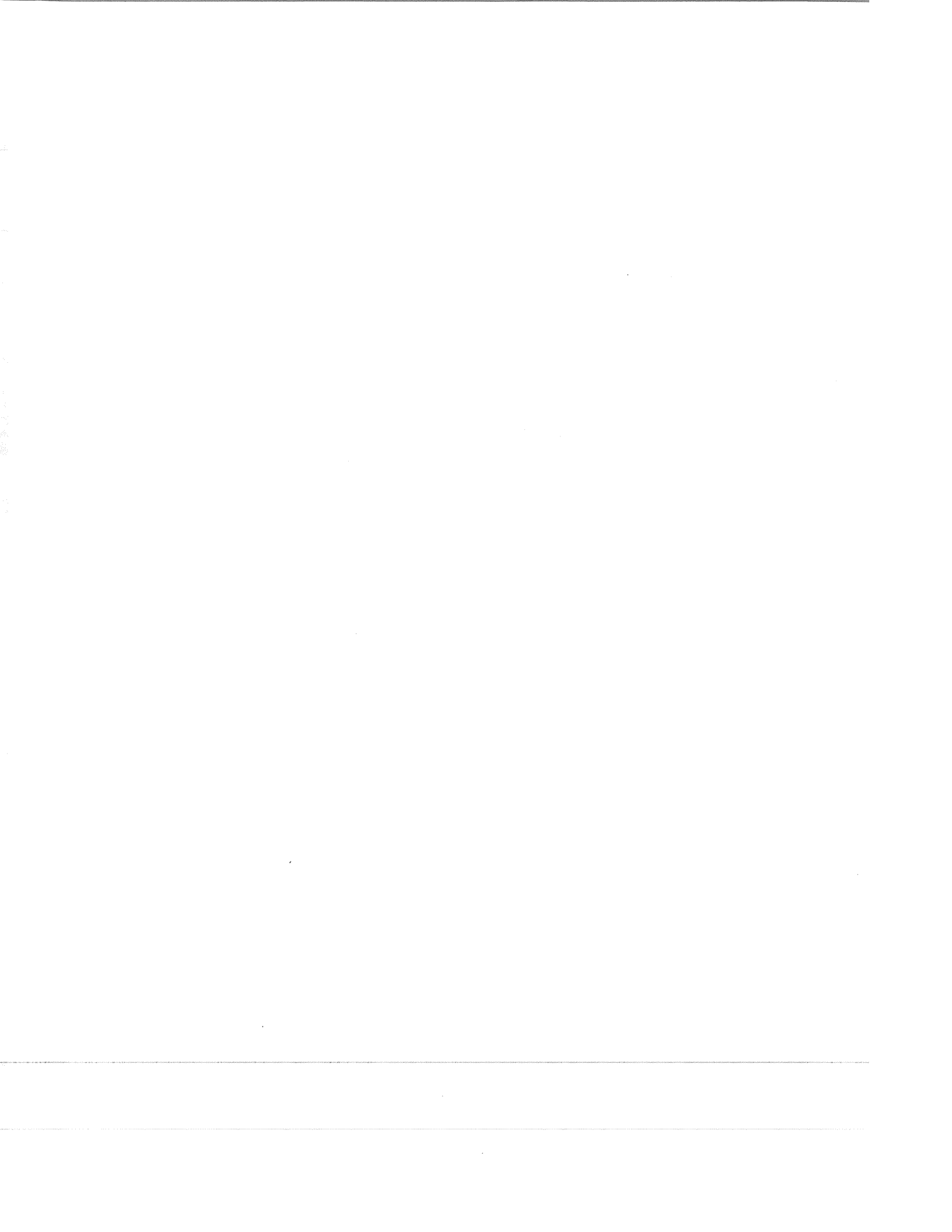
This lesson and the previous one (Modules 6 and 7) showed you five ways to reduce these hazards. All five are summarized below.

Five Key Ways to Reduce Chemical Hazards

1. AVOID HAZARDOUS CHEMICALS	<ul style="list-style-type: none">▼ Use a safer product. Example:<ul style="list-style-type: none">• Use wet styling aids instead of hairspray.• Use pump spray instead of aerosol spray.▼ Use a safer process. Example:<ul style="list-style-type: none">• Do heat pressing instead of chemical hair relaxing.
2. ISOLATE THE WORK PROCESS	Examples: <ul style="list-style-type: none">• Mix chemicals in a separate vented room.• Do nails in a separate vented area.
3. USE VENTILATION	<ul style="list-style-type: none">▼ Use local exhaust ventilation (like a vented manicurist's table or a fume hood).<ul style="list-style-type: none">• Very effective— removes chemicals before they get in the air.• Place near source of vapors and dusts.• Best systems vent vapors and dust outdoors, not back into the shop.• Systems which recirculate air need filters. Some have a separate charcoal filter for vapors, and a dust filter for dusts.• Place the system so it draws air away from you, not past your nose and mouth.• Don't place near a door, busy foot traffic area, or fan. <p style="text-align: right;"><i>(see next page)</i></p>

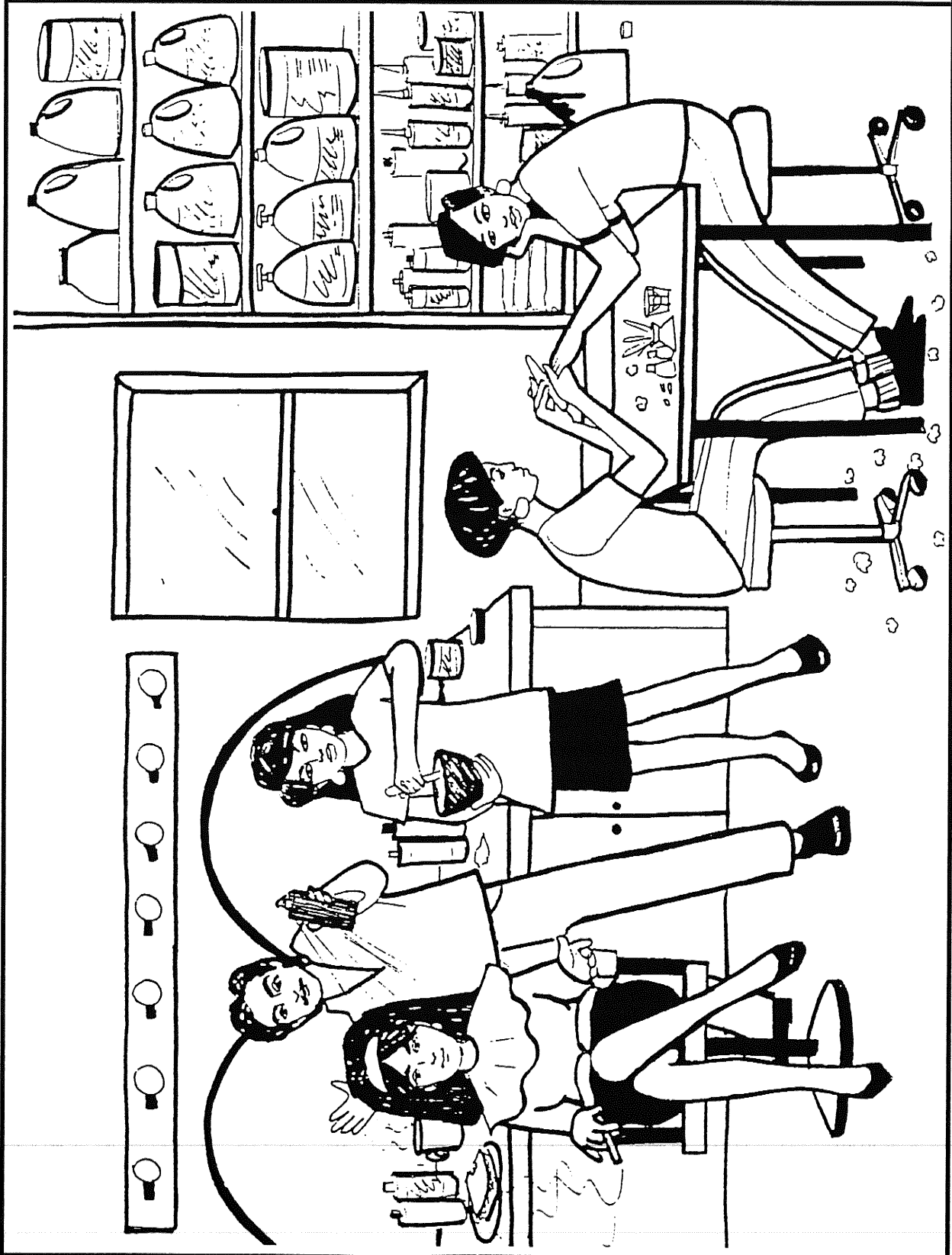
<p>3. USE VENTILATION (continued)</p>	<ul style="list-style-type: none"> • Get professional advice when buying or installing. • Test air flow, change filters, and maintain the system regularly. <p>▼ Use general dilution ventilation.</p> <ul style="list-style-type: none"> • Not designed for chemical hazards, but may be the only ventilation you have. • May be mechanical or natural. • Mechanical systems remove stale air and supply replacement air. Replacement air is a mix of fresh air and recirculated air. An engineer can adjust the mix. • Position system so it blows chemicals away from you, not towards you. • Natural ventilation means opening windows and doors (weather permitting).
<p>4. WORK IN A SAFE WAY</p>	<p>▼ Have a written list of safe work practices in the shop.</p> <p>▼ Store chemical products properly. Examples:</p> <ul style="list-style-type: none"> • Don't store incompatible chemicals together. • Don't store flammable chemicals near ignition sources. • Don't store any chemicals near food. • Don't store heavy items on high shelves. • Keep containers closed when not in use. <p>▼ Dispose of chemicals properly. Examples:</p> <ul style="list-style-type: none"> • Don't put dangerous chemicals down the drain or in the trash. <p>▼ Mix chemicals in a separate, well-ventilated area of the shop.</p> <p>▼ Don't eat, drink, or smoke near chemicals.</p> <p>▼ Practice good housekeeping. Examples:</p> <ul style="list-style-type: none"> • Clean up all spills immediately. • Use proper cleanup methods. • Maintain all ventilation and safety equipment. <p style="text-align: right;"><i>(see next page)</i></p>

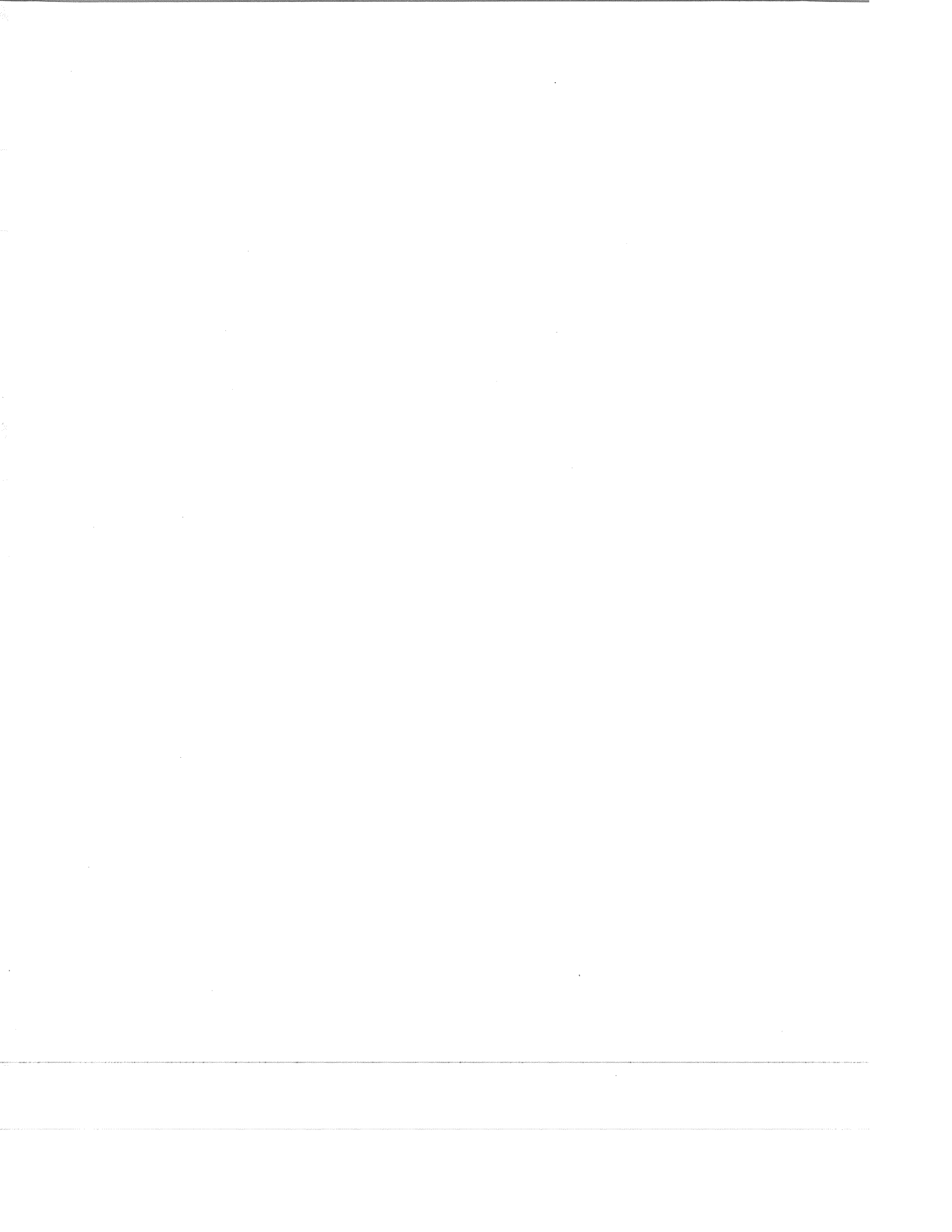
<p>4. WORK IN A SAFE WAY (continued)</p>	<ul style="list-style-type: none"> ▼ Schedule work to reduce exposure. Example: <ul style="list-style-type: none"> • Don't do the same chemical procedure all day long. ▼ Get information and training about chemicals. Examples: <ul style="list-style-type: none"> • Keep a chemical inventory. • Make sure everyone knows where MSDSs are kept. • Give people training on chemical hazards and how to protect themselves. ▼ Keep emergency equipment in the shop, and know what to do in an emergency. Example: <ul style="list-style-type: none"> • Have fire extinguishers, eye washes, first aid kits.
<p>5. USE PERSONAL PROTECTIVE EQUIPMENT (PPE).</p>	<ul style="list-style-type: none"> ▼ Use PPE only when other methods don't get rid of the hazard. ▼ Wear gloves. <ul style="list-style-type: none"> • Choose the correct glove for the chemical you are using. • Replace torn gloves immediately. • Dispose of gloves if a chemical gets inside. • Wash your hands after using gloves. Don't re-use disposable gloves. • All gloves will break down sooner or later. <i>Breakthrough time</i> tells you when. ▼ Use eye protection. Examples: <ul style="list-style-type: none"> • Use chemical splash goggles for liquid chemicals and safety glasses for particles or dust. ▼ Use a dust mask for nail dust. But dust masks are good only for dust, not chemicals. ▼ Have enough protective equipment available, and keep everything in good condition.



Handout B Protecting Yourself From Hazardous Chemicals/Part 2

WHAT'S WRONG WITH THIS PICTURE?





Ergonomics: Fitting the Job to the Person/Part 1

OBJECTIVES

After completing this module, students will be able to:

- Define the term *ergonomics*.
- Identify some ergonomic issues in a typical shop or salon.
- Describe some hand, wrist, and shoulder problems which technicians might get on the job.
- Explain how to reduce such problems by changing techniques used in hairstyling, manicuring, and other technical processes.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION. What aches and pains have you had which might be related to your job?	10 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart.
II. LECTURE/DISCUSSION/ DEMONSTRATION. How can technicians get hand, wrist, and shoulder problems? Can they be prevented?	35 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart. • Demonstration equipment: combs, shears, blow dryer, curling iron, hair curlers, and mannequin. • Handout A: <i>Quick Summary</i>.
III. GROUP EXERCISE. What techniques can prevent pain and injury?	15 minutes	<ul style="list-style-type: none"> • School's clinic area with client chair and typical equipment.
Total Time: 1 Hour		

I. INTRODUCTION (10 minutes)

- | |
|--|
| <ul style="list-style-type: none">• Explain objectives of this module to the class.
(See OBJECTIVES on previous page.) |
|--|

Today we will be discussing *ergonomics*. Ergonomics is a science which looks at:

- How people do their work
- What body movements and positions they use
- What tools and equipment they use
- What effect all these things have on their health and comfort.

Technicians spend a lot of time standing, bending, reaching, and repeating the same motions all day long. These activities can cause fatigue and pain in various parts of the body. Sometimes they can even cause serious injury.

Ergonomics suggests ways to design jobs and equipment so they are easier on the body. It can help us avoid movements and positions that might cause health problems. Good ergonomic design fits the job and tools to the needs of the worker's body. Ergonomics can make work in the shop more comfortable and less likely to cause injuries to the hand, wrist, shoulder, neck, back, foot, and leg.

Some of the solutions we'll present in this class require only simple, "common sense" changes in how you move and hold your body. Others may require use of different techniques, tools, or equipment, some of which may not be readily available. It will be your task to find the combination of solutions that will work best for you and for the shop.

(I. INTRODUCTION, continued)

- **Introduce this “brainstorming” exercise.**
- **Make two columns across the board:**
 - 1) WHERE WAS THE PAIN?** and
 - 2) WHAT KIND OF WORK?**
- **Ask the class the following questions:**

- *Have you ever felt aches or pains that seemed related to work in the shop?*
- *Where in your body did you feel these symptoms?*
- *What kind of work were you doing when you felt the pain?*

- **List students’ responses under the appropriate heading on the board.**
- **A completed chart might look like this (see next page):**

(I. INTRODUCTION, continued)

WHERE WAS THE PAIN?	WHAT KIND OF WORK?
Hands, wrists, or arms	Hair coloring Bleaching Perms Cutting hair Using rollers Using shears Using curling iron
Shoulders	Hair coloring Bleaching Perms Cutting hair Using hair dryer
Neck	Perms Using curling iron
Low back	Standing for long periods Giving facials Manicuring Shampooing Perms Highlighting
Feet	Standing for long periods

Our bodies may not feel these symptoms right away. Some problems occur immediately, but others develop gradually over a long period of time. We will discuss some steps we can take to prevent pain and injury now and in the future. Today's class will focus on the hand, wrist, and shoulder. In the next class, we'll look at the neck, back, foot, and leg.

II. LECTURE/DISCUSSION/DEMONSTRATION (35 minutes)

- **During this discussion, try to demonstrate the techniques discussed. Have combs, shears, a blow dryer, a curling iron, hair curlers, and a mannequin available.**
- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. This handout includes some pictures that we will be looking at today. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. How do your hand and wrist work?

Most of the muscles which move your hand and fingers are actually in your forearm. These muscles are connected to the hand and fingers by *tendons*, which are like cords passing through your wrist.

- **Demonstrate this experiment yourself as the students do it.**

Here's a simple exercise that lets you feel the muscles in your arm and the tendons in your wrist. With the fingers of your right hand, feel the muscles on the inside of your *left forearm*. Keep feeling them while you

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

gently open and close your left hand. (Make a fist and then open it.) You should feel the muscles moving in your left forearm. It's these muscles which are actually moving your left hand.

Next, with the fingers of your right hand, feel the tendons on the inside of your *left wrist*. Keep feeling them while you open and close your left hand again. You should feel the tendons moving in your left wrist. These tendons are passing the movement from the forearm muscles to the hand.

2. What is tendinitis?

Tendinitis is swelling and inflammation of the tendons. When you use your hand and wrist in certain ways, you can put stress on the tendons. If this stress continues over time, you may develop tendinitis. Tendinitis makes it painful to use your hand, especially to grasp things.

3. What is carpal tunnel syndrome?

The *carpal tunnel* is a tunnel in the wrist surrounded by bone and tissue. A nerve and several tendons pass through this tunnel. (Look at **Graphic #1** in **Handout A: Quick Summary**, passed out earlier.) If you have tendinitis and your tendons swell, there is less room in the tunnel for the nerve. When the nerve gets squeezed this way, the condition is called *carpal tunnel syndrome*.

Carpal tunnel syndrome often leads to numbness and weakness in the hand. If left untreated, it can make it very difficult to grasp things or use that hand.

Carpal tunnel syndrome is not very common among technicians. But if you start to feel numbness, tingling, or weakness in your hand, you should see a doctor immediately.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

4. *What motions might cause tendinitis and carpal tunnel syndrome?*

You can place stress on your tendons and nerves by:

- **Bending the wrist.**

When you bend your wrist a lot, the tendons must bend also, causing friction and irritation. (Look at **Graphic #2** in **Handout A.**)

When your wrist is bent, your muscles also have to work harder—both to support your hand and to move it.

It's better if you hold your wrist relatively straight, as when making a fist. Here's one way to tell if you're bending your wrist more than you should: when wrinkles appear on the back of your wrist, the wrist is bent backward too much.

- **Frequent or forceful pinching or gripping motions.**

The harder the muscles and tendons work, the more likely they are to become swollen.

- **Repeating the same hand and wrist motion over and over.**

If you repeat any motion many times without allowing the tendons to rest, they can become swollen and inflamed.

- **Doing more than one of the above.**

For example, if you both bend your wrist and repeat the same motion over and over, like when curling hair, your chance of tendinitis or carpal tunnel syndrome increases.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

5. Which jobs in the salon make you bend your wrist?

- Cutting hair. As you cut different sections of the hair, you may hold the shears with your wrist in a bent position.

- **With shears and a mannequin, demonstrate bending the wrist while cutting hair.**

- Holding a hair dryer. When you hold a hair dryer at the crown or the frontal area of a client's head, and you stand behind or beside the client, you may bend your wrist downward.

- **With a hair dryer, demonstrate how the wrist might be bent downward.**

- Using a round brush or a curling iron. These tools make you bend your wrist both downward and backward. Especially when curling the crown of the head, your wrist may be bent downward.

- **With a curling iron and mannequin, demonstrate how the wrist may be bent downward when curling the crown of the head.**

6. When might you use forceful pinching or gripping motions?

- Cutting with dull shears.
- Cutting with shears that are adjusted too tight—they require force to open and close.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

- Cutting with shears that have not been lubricated properly.
- Cutting with shears that don't fit your hand well—you must grip harder to control them.
- Massaging a client.
- Curling, especially with a hot iron—it's heavy and requires a lot of effort to hold and turn it.
- Using a comb that doesn't glide smoothly.

7. *In which processes do you repeat motions over and over?*

- Cutting hair. You may use shears all day long. If they are dull, you'll have to cut more times to get the same work done.
- Combing and holding hair while you cut it. You repeat this process for every single cut with the shears.
- Curling hair. There are more motions when you curl *long* hair, and when you use small rollers. Small rollers take up less hair so you have to use more.

- **Write on the board:**

CAUSES OF TENDINITIS AND CARPAL TUNNEL SYNDROME

- Bending the wrist a lot
- Pinching or gripping with force
- Repeating a motion over and over.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

We've looked at these main causes of hand and wrist problems. Now we'll talk about how to prevent these problems.

8. How can you prevent hand and wrist problems?

In ergonomics, you can get a better "fit" between your body and the job by either:

- Changing how you do the job, or
- Changing your tools and equipment.

Keep these in mind as we go through the next few questions. Some of the solutions involve changing how you work and others involve better equipment.

9. How can you keep from bending your wrist when you work on a client?

- **Adjust the height of the chair** when cutting, curling, or drying hair to allow your wrist to be straight. Lower the chair to work on the crown of the head, and raise it to work below ear level. To avoid bending your wrist, the chair should be a type which goes up and down at least five inches.
- **Swivel the chair** so you don't have to reach over or across the client.
- **Tilt the client's head** so you don't have to bend your arm, hand, and wrist as much.
- **Hold the hair dryer sideways.** When drying the crown or far side of the head, change your grip on the hair dryer handle so that you hold the dryer sideways (not like a pistol). (Look at **Graphic #3 in Handout A.**) Or use a hair dryer with a flexible handle, so you can bend the handle instead of your wrist.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

- **Practice good hair cutting technique.** Good technique can go a long way towards protecting your hand and wrist. For example, instead of keeping your wrist bent downward when cutting the sides, back, and front, use techniques that allow you to keep your wrist straight. (Look at **Graphic #4 in Handout A.**)

10. How can you avoid forceful pinching or gripping?

- **Choose shears that fit your hand,** just as you would choose a pair of gloves. Shears come in different sizes and designs. If you have slender fingers, you may need to use plastic rings in the finger holes so your fingers will fit snugly inside. The finger holes should stay near your fingertips and shouldn't "ride up" toward your hand.
- **Check the lubrication, sharpness, and tension adjustment of your shears** every day, to reduce the effort involved in cutting hair.
- **Practice good hair cutting technique.** Proper positioning of the client's head will help reduce pinching and gripping.
- **Choose a comfortable comb.** It should feel well-balanced in your hand, and should glide through hair with as little friction as possible. A comb with a silicone coating often glides more easily.
- **Use new tools,** such as electric round brushes and new comb designs, as they become available.

11. How can you reduce the number of repetitive motions?

- **When using a round brush, twirl the handle** between your thumb and index finger, instead of con-

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

tinually bending your wrist. Choose a brush with a handle that allows you to do this comfortably.

- **Keep shears sharp.** Sharp shears will allow you to use fewer cuts to remove the same amount of hair.

Now we'll turn to shoulder problems.

12. How does your shoulder work, and what parts does it have?

The muscles in your shoulder are connected to your arm by tendons. Between the shoulder tendons and the bones of the shoulder are small sacs of fluid called *bursa*. They help "lubricate" the shoulder so it moves easily.

13. What shoulder problems might a technician get on the job?

When you use or move your shoulder in certain ways, you can put stress on the muscles, tendons, and bursa. The result may be muscle aches, tendinitis, or bursitis.

14. What causes muscle aches in the shoulder?

Muscle aches in the shoulder usually are the result of overworking the shoulder. It's not designed for long periods of use without rest. For example, when you keep your arm raised about your shoulder or at shoulder height, the muscles of your shoulder and neck begin to ache after a short time. They tire easily.

- | |
|--|
| <ul style="list-style-type: none">• Demonstrate this experiment yourself as the students do it. |
|--|

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

Try this experiment. Hold one arm at shoulder height, straight out in front of you. Notice that, after just a few seconds, your shoulder muscles start to feel tired.

15. What causes tendinitis in the shoulder?

Tendinitis can occur in the shoulder as well as in the hand and wrist. The shoulder tendons become swollen and inflamed, causing pain. Tendinitis can be caused by frequent stress on the shoulder. You might get tendinitis in your shoulder if you:

- Often reach out or reach up
- Often hold your arm up, so your elbow is above shoulder height
- Repeat shoulder movements over and over.

16. How do you get bursitis?

Remember that the *bursa* are sacs filled with fluid. They are located between the tendons and bones in your shoulder. When they get squeezed between the tendons and bones, the bursa can become inflamed. This is *bursitis*. Bursitis can make it painful, or even impossible, to raise your arm.

You can get bursitis if you often raise your arm too high, so that your elbow is above your shoulder.

Notice that shoulder problems like muscle aches, tendinitis, and bursitis all have something in common. They all can be caused by holding your arm stretched away from your body, or holding your arm above shoulder height, or both. You're especially likely to have problems if you do these things often.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

17. What activities in the shop might cause shoulder problems?

- Reaching to the crown of a client's head to cut, dry, or curl.
- Reaching across a client's body to shampoo or dry hair.
- Reaching across a table to manicure.
- Reaching for shears and combs on the counter.
- Reaching for supplies on a high shelf.
- Holding heavy clippers, especially if your arm is stretched out.

- With shears, a hair dryer, a curling iron, and mannequin, demonstrate how some of the activities listed may require holding the arm stretched out, or above shoulder height.**

18. How can you avoid shoulder problems when you work on a client?

Always try to keep your elbows close to you body, and not too high. That way, the muscles and tendons of your shoulder have better leverage and don't have to work as hard. Also, the bursa don't get squeezed like they do when your arm is raised.

In the shop you could:

- **Adjust the height of the chair** when you work on a client so your arms are close to your sides. (Look at **Graphic #5 in Handout A.**)

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

- **Swivel the chair** and get as close to the client as possible when cutting, perming, coloring, styling, and shampooing.
- **Tilt the client's head** to a position which is comfortable for you.
- **Hold your tools so you don't have to raise your arms.** For example, when drying the crown or far side of the head, change your grip on the hair dryer handle so that you hold the dryer sideways.
- **Use good hair cutting technique** which allows you to keep your elbows close to your sides.
- **Have the client extend her hand toward you** when you're doing her nails; don't reach for the client's hand.
- **Use an armrest** when you do a manicure, or support your arms on folded towels.

III. GROUP EXERCISE (15 minutes)

- **Do this exercise in your school's clinic area.**
- **Have one student sit in the client's chair, while another student pretends to cut hair. (Or you could use a mannequin as the client.)**
- **Explain the exercise.**

Watch the technician cut hair. Notice his or her positions and movements—especially the hand, wrist, and shoulder. Try to answer these questions:

Wrist

- Is the technician's wrist bent or straight?
- Is the technician making any pinching or gripping motions?
- Is the technician repeating any motions over and over?

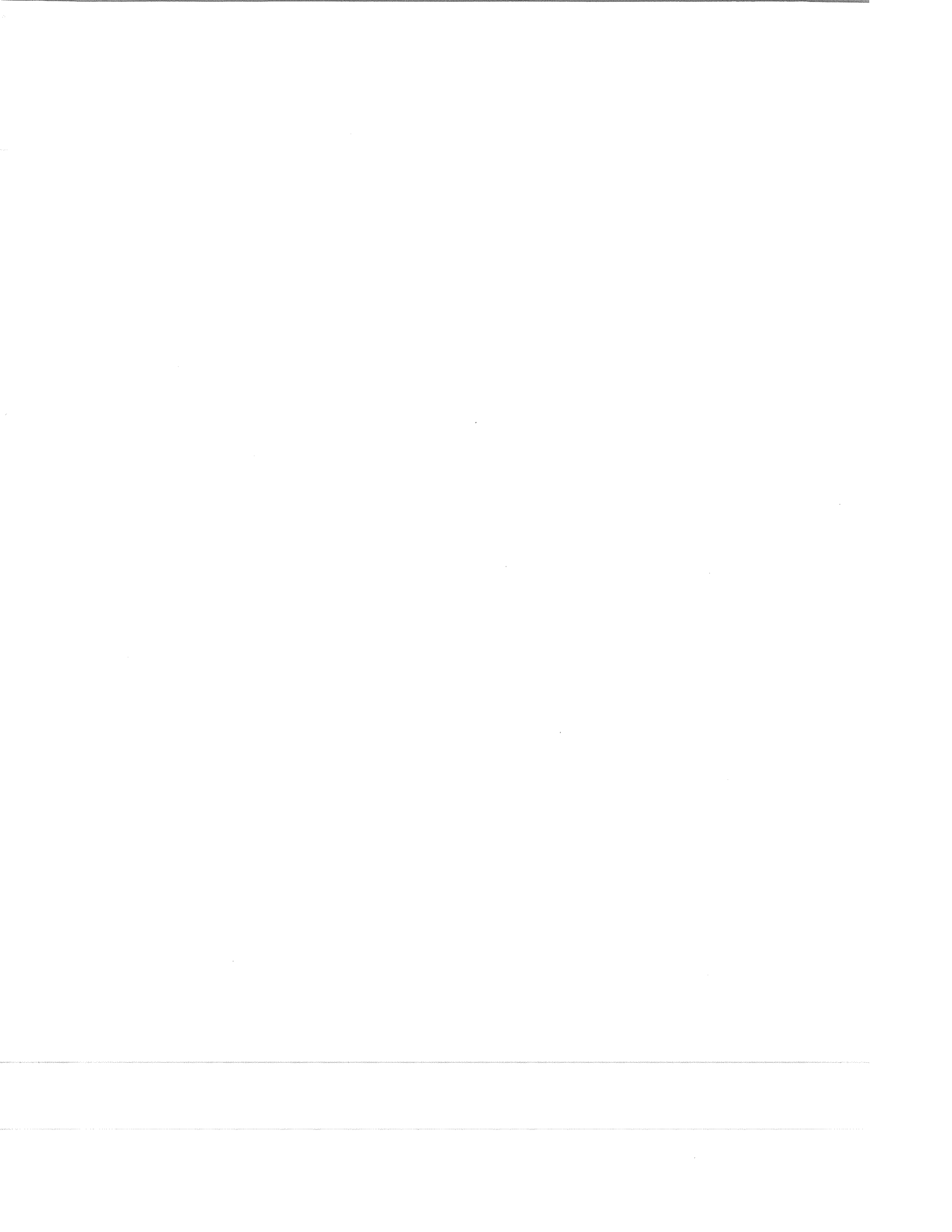
Shoulder

- Is the technician often reaching out or reaching up?
- Is the arm often held in an extended position, away from the body?
- Is the arm often raised too high, above the shoulder?

(III. GROUP EXERCISE, continued)

- **As students answer each question above, ask them how to improve the technician's positions and movements. What changes in technique or equipment could help prevent pain and injury?**
- **Encourage students to refer to Handout A to find ideas that might help.**
- **Repeat the entire exercise for other processes:**
 - **Using a hair dryer**
 - **Using a curling iron**
 - **Doing nails.**
- **End the class.**

This concludes our discussion of hand, wrist, and shoulder problems. In our next class on Ergonomics we will talk about neck, back, foot, and leg problems.



Handout A

Ergonomics: Fitting the Job to the Person/Part 1

QUICK SUMMARY

Technicians spend a lot of time standing, bending, reaching, and repeating the same motions all day long. These activities can cause fatigue and pain in various parts of the body. Sometimes they can even cause serious injury. You should understand how to prevent hand, wrist, shoulder, neck, back, foot, and leg problems.

Many aches, pains, and injuries develop slowly over a long period of time. Often they can be prevented by good posture, better work habits, and proper equipment.

Ergonomics

Ergonomics is a science which looks at:

- How people do their work
- What body movements and positions they use
- What tools and equipment they use
- What effect all these things have on their health and comfort.

Ergonomics gives us ideas for designing jobs and equipment so they are easier on the body.

This module covers hand, wrist, and shoulder problems. The next module (Module 9) covers the neck, back, foot, and leg.

Hands and wrists

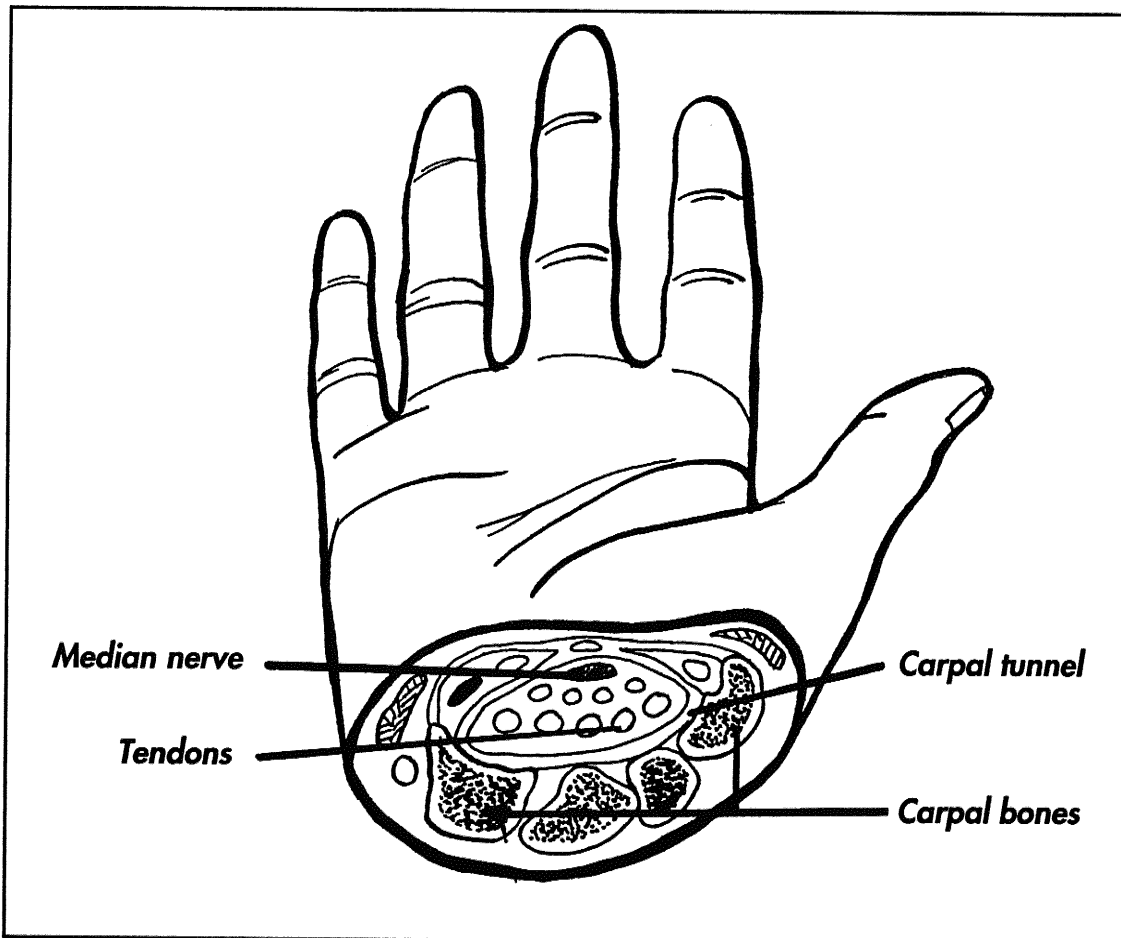
Most of the muscles which move your hand and fingers are actually in your forearm. These muscles are connected to the hand and fingers by *tendons*, which are like cords passing through your wrist. When the tendons get inflamed, it's called *tendinitis*.

(see next page)

The *carpal tunnel* is a tunnel in the wrist, surrounded by bone and tissue. A nerve and several tendons pass through this tunnel. (See **Graphic #1.**) If you have tendinitis, the tendons swell and the nerve in the tunnel gets pinched. This condition is called *carpal tunnel syndrome*. It can make your hand numb and weak.

The main causes of tendinitis and carpal tunnel syndrome are:

- Bending your wrist a lot
- Pinching or gripping with force
- Repeating a motion over and over.



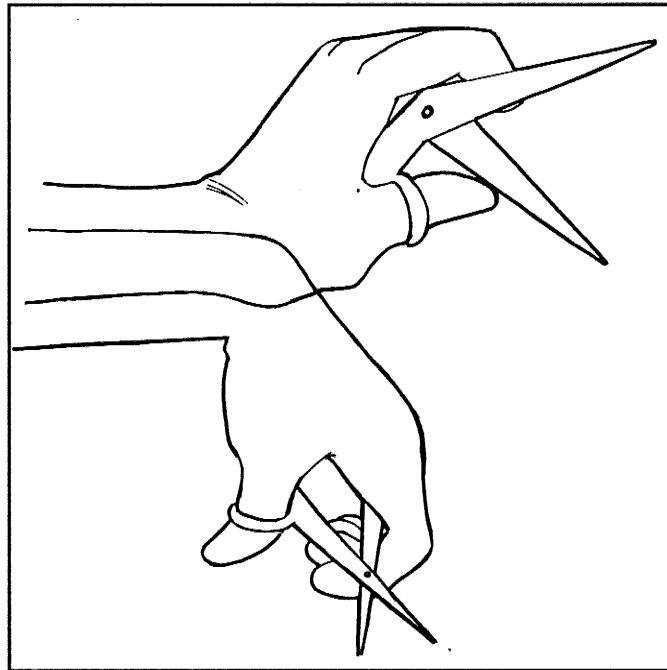
Graphic #1

(see next page)

You may bend your wrist a lot when you:

- Cut hair.
- Hold a hair dryer.
- Use a round brush, curlers, or curling iron.

See **Graphic #2** for an illustration of bending your wrist and its effect on your tendons.



Graphic #2

You may use forceful pinching or gripping motions when you:

- Cut with shears which don't fit your hand.
- Cut with shears which are dull or not lubricated properly.
- Massage a client.
- Curl with a hot iron.
- Use a comb which doesn't glide smoothly.

(see next page)

Some ways to prevent hand and wrist problems are:

- **Adjust the height of the chair.** Lower it to work on the crown of the head, and raise it to work below ear level. To avoid bending your wrist, the chair should be a type which goes up and down at least five inches.
- **Swivel the chair** so you don't have to reach over or across the client.
- **Tilt the client's head** so you don't have to bend your arm, hand, and wrist as much.
- **Hold the hair dryer sideways,** or use a dryer with a flexible handle, so you can keep your wrist straight. (See **Graphic #3.**)

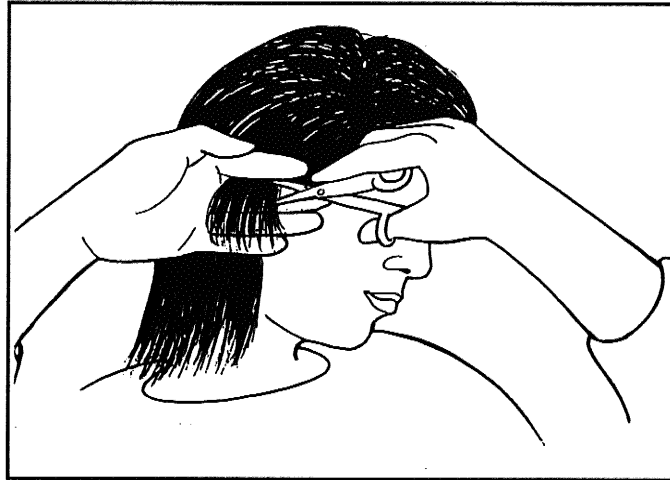


Graphic #3

- **Use sharp shears which fit your hand,** and which are correctly adjusted and lubricated. You'll be able to make fewer cuts, and you won't need to apply as much force for each one.
- **Twirl the handle of your round brush** between your thumb and index finger, instead of continually bending your wrist.

(see next page)

- **Use a hair cutting technique that helps you keep your wrists straight.** (See **Graphic #4.**)



Graphic #4

Shoulders

Your shoulder has muscles and tendons. It also has *bursa*, which are sacs filled with fluid. If you strain your shoulder, you can get muscle aches, tendinitis, or bursitis.

It's easy to strain your shoulder if you often hold your arm stretched away from your body, or if you often hold your arm up, with your elbow above shoulder height.

You may strain your shoulder when you:

- Reach up to cut, dry, or curl the crown of the head.
- Reach across the client's body to shampoo or dry hair.
- Reach across a table to manicure.
- Reach for shears and combs on the counter.
- Reach for supplies on a high shelf.
- Hold heavy clippers, especially if your arm is stretched out or raised.

(see next page)

Some ways to prevent shoulder problems are:

- **Adjust the height of the chair** when you work on a client so your arms are close to your sides. (See **Graphic #5**.)



Graphic #5

- **Swivel the chair** and get as close to the client as possible.
- **Tilt the client's head** to a position which is comfortable for you.
- **Hold your tools so you don't have to raise your arms.** For example, hold a blow dryer sideways.
- **Use good hair cutting technique.** Some techniques allow you to keep your elbows close to your sides.
- **Have the client extend her hand toward you** when you're doing her nails; don't reach for her hand.
- **Use an armrest** when you do a manicure, or support your arms on folded towels.

Ergonomics: Fitting the Job to the Person/Part 2

OBJECTIVES

After completing this module, students will be able to:

- Describe some neck, back, foot, and leg problems which technicians might get on the job.
- Explain how to reduce such problems by changing techniques used in hairstyling, manicuring, and other technical processes.
- Discuss how space and equipment in the shop can be designed to prevent many types of pain and injury.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION AND REVIEW.	5 minutes	• Chalkboard or flipchart.
II. LECTURE/DISCUSSION/ DEMONSTRATION. How can technicians get neck, back, foot, and leg problems? Can they be prevented? How can space and equipment in the shop be designed to reduce ergonomic problems?	35 minutes	• Chalkboard or flipchart. • Demonstration equipment: combs, shears, blow dryer, curling iron, hair curlers, and mannequin. • Handout A: <i>Quick Summary</i> .
III. GROUP EXERCISE. What techniques can prevent pain and injury?	20 minutes	• School's clinic area with client chair and typical equipment.
Total Time: 1 Hour		

I. INTRODUCTION AND REVIEW (5 minutes)

- | |
|---|
| <ul style="list-style-type: none">• Explain objectives of this module to the class.
(See OBJECTIVES on previous page.) |
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Today we will continue our discussion of Ergonomics. Let's quickly review what *ergonomics* means:

Ergonomics is a science which looks at:

- How people do their work
- What body movements and positions they use
- What tools and equipment they use
- What effect all these things have on their health and comfort.

Ergonomics suggests ways to design jobs and equipment to fit them to the needs of a worker's body. It can make work more comfortable and less likely to cause injury.

In the last class, we saw how ergonomics can help reduce hand, wrist, and shoulder problems. We will begin today's class by discussing the neck and back. Later today we'll also look at the foot and leg. Finally, we'll consider how space and equipment in the shop can be designed to reduce ergonomic problems.

II. LECTURE/DISCUSSION/DEMONSTRATION (35 minutes)

- **During this discussion, try to demonstrate the techniques discussed. Have combs, shears, a blow dryer, a curling iron, hair curlers, and a mannequin available.**
- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. This handout includes some pictures that we will be looking at today. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *What are the important parts of your neck and back?*

Your spine runs from the top of your neck down to your lower back. It is made up of many bones called *vertebrae*, one below another. Between each pair of vertebrae are *joints* and *discs*. These give your neck and back flexibility, so they can move. (Look at **Graphic #1 in Handout A: *Quick Summary***, passed out earlier.) Discs are flexible because they have a substance like jelly inside.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

2. What neck and back problems can you get by bending forward?

When you stand in a normal posture, you have a small hollow in the back of your neck and another small hollow in your back. When you bend forward, these hollows disappear. The result is that the discs get squeezed. (Look at **Graphic #2** in **Handout A.**)

As the discs are squeezed, they can press on different parts of the spine, including nerves. This can cause pain in the neck or back. It can also cause pain or numbness down the arm or leg, often called a *pinched nerve* or *sciatica*.

If you spend many years bending forward, squeezing the discs, the “jelly” inside a disc might begin to leak out. If a big blob leaks out at one time, we say that the disc is *ruptured* or *herniated*. This problem can cause a lot of pain and numbness if it irritates a nerve. If it occurs in the neck, you may feel pain or numbness down one or both of your arms. If it happens in the lower back, you may feel pain or numbness in your hip or leg.

3. What neck and back problems can you get by twisting your body?

If you have to twist your body to get closer to a client, or to reach for something you need, the discs in your neck and back also get squeezed. The result can be all the same problems you get from bending forward — a pinched nerve, pain or numbness in your arm or leg, and, after time, a ruptured disc.

4. What jobs in the salon or shop make you bend forward or twist?

You may bend forward or twist your body when you:

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

- Give a shampoo
 - Cut hair (especially low on the client's head, below ear level)
 - Do a facial
 - Give a manicure
 - Give a pedicure.
- 5. How can you avoid bending forward or twisting when you give a shampoo?**
- **Work with your back straight.** This is the most important rule. Bend at the hips instead of the waist, which is called the *straight-back bend*. Your spine is tilted, but not bent or twisted. (Look at **Graphic #3** in **Handout A**.)
 - **Use a free-standing sink** that lets you stand behind the client and reach his/her hair without twisting. (This is called a *back wash system*.) Unfortunately, these sinks require special plumbing and installation. Most shops don't have them.
- 6. How can you avoid bending forward or twisting when you cut hair?**
- **Work with your back straight.** Bend at the hips instead of the waist.
 - **Raise the client's chair** to a height which is comfortable for you.
 - **Tilt the client's head** to a better position.
 - **Have the client stand up** if his/her hair is long.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

7. How can you avoid bending forward or twisting while doing facials, manicures, or pedicures?

Although you often hear that sitting up straight is good for the back, it's very difficult to do facials, nails, or pedicures in that position.

Still, there are some ways to follow the basic rule: **work with your back straight**. Bend at the hips instead of the waist. Many technicians sit at the front edge of the chair so they can do this. Some chairs have a seat which tilts forward, so the chair does the bending for you. A kneeling chair or a chair with a wedge-shaped cushion might also help. (Look at **Graphic #4** in **Handout A**.)

8. Besides bending forward or twisting, what are some other ways you can hurt your back?

Reaching overhead, bending backward, or standing for long periods of time can put extra pressure on the joints between vertebrae. This pressure can cause low back pain.

Sometimes you may bend backward without being aware of it. When you stand for a long time, you might begin to "sway" or lean backward without noticing. Also, you tend to bend backward when you stand or walk in high-heeled shoes.

9. When might you reach up or bend backward during work in the shop or salon?

You can hurt your back if you:

- Reach for supplies on a high shelf
- Wear boots or shoes with high heels
- Stand for so long that you "sway" or lean backward.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

10. How can you prevent back problems caused by reaching up or bending backward?

- **Bend your knees slightly**, and pull in your abdominal muscles at the “belly button,” when you have to reach up. This is called a *pelvic tilt*. It will keep you from arching backward.
- **Place one foot on a small stool**, or on a rung under the client’s chair, when you have to stand for long periods of time.
- **Avoid high-heeled shoes.**
- **Stand on a foot stool when you reach for supplies** on a high shelf. Store supplies you use often on lower shelves.

11. What are some foot and leg problems which technicians can get?

- Swelling of the feet and ankles. The blood circulated to the feet is pumped back up the legs by the calf muscles. When you stand still for a long time, the calf muscles don’t work hard enough to pump the blood very well. As a result your feet and ankles might swell. Your feet may ache, and your shoes may feel tight.
- *Varicose veins* (swollen veins). If you stand up for long periods of time, you also have more risk of getting varicose veins.
- Calluses and irritation. Pressure on any part of the foot reduces circulation. You can get calluses, irritation, and other problems at the “pressure point.” One cause might be shoes that don’t fit well.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

12. What activities in the shop can cause foot and leg problems?

- Standing for long periods of time. Your feet and ankles may swell, and you may eventually get varicose veins.
- Wearing high-heeled shoes (heels higher than 1-1/2 inches). High heels put more pressure on your toes, especially if the shoes have pointed toes. You may get calluses or skin irritation on your toes.
- Wearing shoes with poor arch support, hard soles, or improper fit. They put pressure on one part of your foot.
- Standing on a hard floor. Pressure can build up on your heel or the "ball" of your foot.

13. What can you do to prevent these foot and leg problems?

- **Don't stand for long periods of time** without taking a break and sitting down.
- **Change position frequently.** Spend part of your day standing and part sitting.
- **Raise your feet on a stool** when you take a break. It's best if the stool is at least as high as your chair so your legs go out straight, but this may be uncomfortable for some people.
- **Use a stool or moveable seat** so you can sit and rest your feet while you work on a client. Some seats attach to the client's chair and swivel to different positions around the client as you work.
- **Wear comfortable, rubber-soled shoes** with good arch support. They will help spread the pressure of standing to your entire foot.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

- **Use shock-absorbing inserts inside your shoes.** These are available at many stores. They are especially important if you are wearing shoes with hard soles.
- **Avoid shoes with high heels or pointed toes.**
- **Use a cushioned floor mat** around the client's chair so you don't have to stand on the hard floor. That way, pressure is more evenly spread around your whole foot. The mat should have sloped edges to reduce the chance of people tripping on it.
- **Use support hose** to reduce swelling in your legs. They will also help your legs feel less tired.

14. How can the salon or shop be designed to make work easier on your body?

Good positions and movements are easier if space and equipment in the shop are well-designed.

Good design can help prevent all the different types of injuries we've discussed in both our classes on Ergonomics—from hand to foot and everything in between.

Poor design can force you to bend, stoop, twist, and reach in awkward ways. Bad designs include:

- Work stations that are too close together. If there's too little space, you can't have rollabout tables for supplies in your work area. Then you may have to reach farther for supplies.
- Work stations (like countertops) that extend out too far from the wall. These force you to bend forward to get to a basin or something else near the back of the counter.
- Low cabinets above work surfaces. You might have to bend under them to avoid hitting your head.

(II. LECTURE/DISCUSSION/DEMONSTRATION, continued)

- High cabinets. You might have to reach too high to get supplies.

Well-designed work stations and equipment allow you to keep your wrists, shoulders, neck, and back in good positions. They make your movements easy and convenient. They also make it possible to move around, instead of standing in one place for a long time. They let you switch between sitting and standing, so you are not in either position all day.

Here are a few ideas for good work station design:

- **Hydraulic chairs for clients should be adjustable** at least five inches up and down. The foot pedal should be easy to reach and use. Very short or tall technicians may need an electric lift chair, which can adjust up and down as much as twelve inches.
- **Stools or rolling seats should be available.** These let you sit while you work on the client.
- **Manicure stations should have arm rests** both for the client and the technician. If no arm rests are available, folded towels can help support the arms.
- **Manicurists' chairs should have a seat or cushion which tilts forward towards the table.** This allows you to lean forward at the hips without bending your spine.

III. GROUP EXERCISE (20 minutes)

- **Do this exercise in your school's clinic area.**
- **Have one student sit in the client's chair, while another student pretends to cut hair. (Or you could use a mannequin as the client.)**
- **Explain the exercise.**

Watch the technician cut hair. Notice his or her positions and movements—especially the neck, back, foot, and leg. Try to answer these questions:

Neck and Back

- Is the technician often bending?
- Is the technician twisting?
- Does the technician often reach overhead?
- Is the technician often bending backward?
- Does this service require standing for a long time? If so, do you notice the technician “swaying” or leaning backward?

Foot and Leg

- Does this service require standing still for long periods of time?
- Is the technician wearing shoes with high heels, poor arch support, hard soles, or improper fit?
- Is the floor too hard?

(III. GROUP EXERCISE, continued)

- **As students answer each question above, ask them how to improve the technician's positions and movements. What changes in techniques or equipment could help prevent pain and injury?**
- **Encourage students to refer to Handout A to find ideas that might help.**
- **Repeat the entire exercise for other processes:**
 - Using a hair dryer
 - Using a curling iron
 - Doing nails.
- **End the class.**

This concludes our series of two classes on Ergonomics. In our previous ergonomics class, we talked about hand, wrist, and shoulder problems. In this class, we looked at the neck, back, foot, and leg. Many of these problems can be prevented by good shop design, good equipment, and good work technique.

Handout A

Ergonomics: Fitting the Job to the Person/Part 2

QUICK SUMMARY

Technicians spend a lot of time standing, bending, reaching, and repeating the same motions all day long. These activities can cause fatigue and pain in various parts of the body. Sometimes they can even cause serious injury. You should understand how to prevent hand, wrist, shoulder, neck, back, foot, and leg problems.

Many aches, pains, and injuries develop slowly over a long period of time. Often they can be prevented by good posture, better work habits, and proper equipment.

Ergonomics

Ergonomics is a science which looks at:

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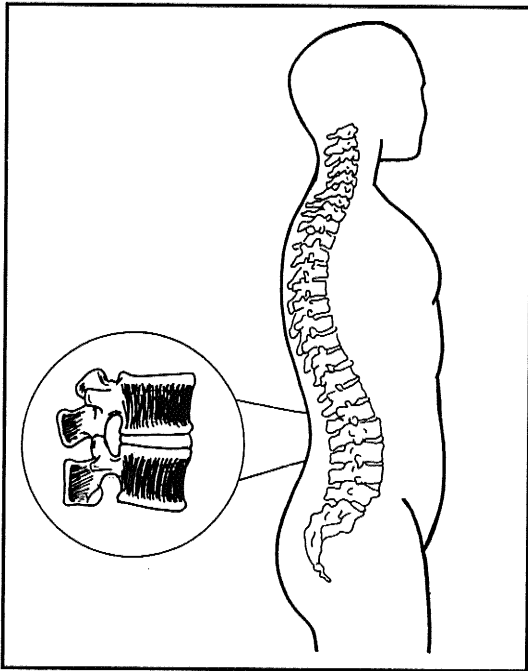
Ergonomics gives us ideas for designing jobs and equipment so they are easier on the body.

Module 8 covered hand, wrist, and shoulder problems. This module covers the neck, back, foot, and leg.

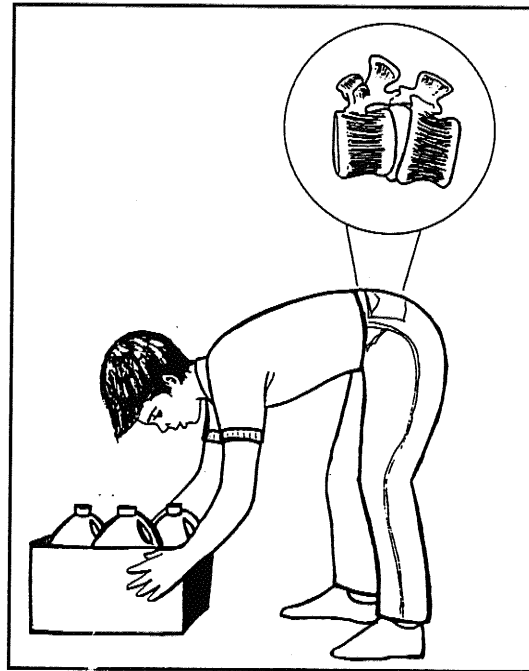
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Neck and back

Your spine runs from the top of your neck down to your lower back. It is made up of many bones called *vertebrae*, one below another. Between each pair of vertebrae are *joints* and *discs*. These give your neck and back flexibility, so they can move. (See **Graphic #1**.)



Graphic #1



Graphic #2

Discs are flexible because they have a substance like jelly inside.

Both joints and discs can be hurt if you strain them. Discs get squeezed if you bend forward or twist your body. (See **Graphic #2**). This can cause pain in your neck, back, arm, or leg, especially if a disc *ruptures* (the jelly inside leaks out).

You can strain your neck or back in the shop if you:

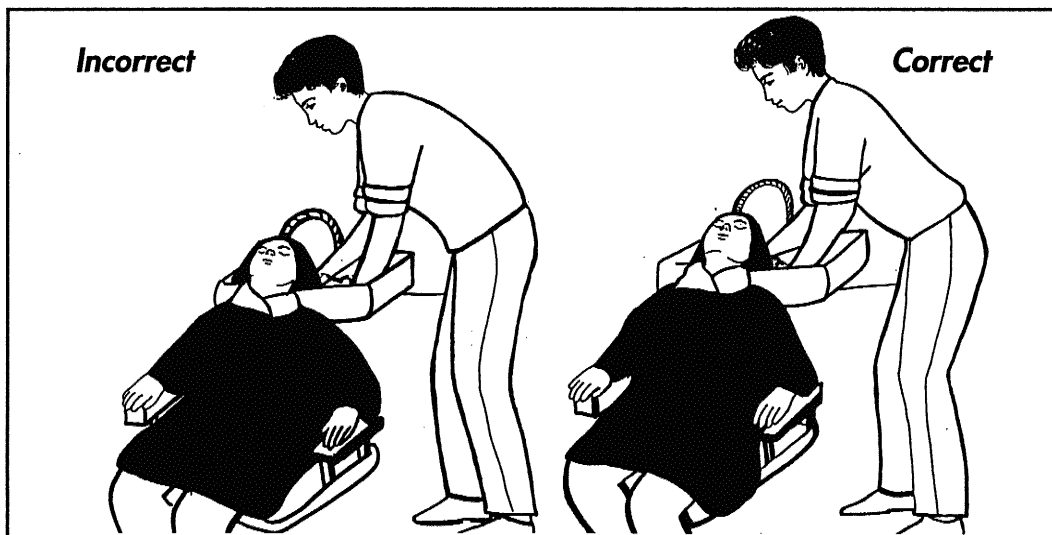
- Bend forward when giving a shampoo, haircut, facial, manicure, or pedicure.

(see next page)

- Twist your body to get closer to a client or to reach for something.
- Reach overhead for supplies.
- Arch (lean) backward because you've been standing for a long time.
- Stand for a long time in high-heeled shoes.

Some ways to prevent neck and back problems are:

- **Work with your back straight.** Bend at the hips instead of the waist (a *straight-back bend*). (See **Graphic #3**.)

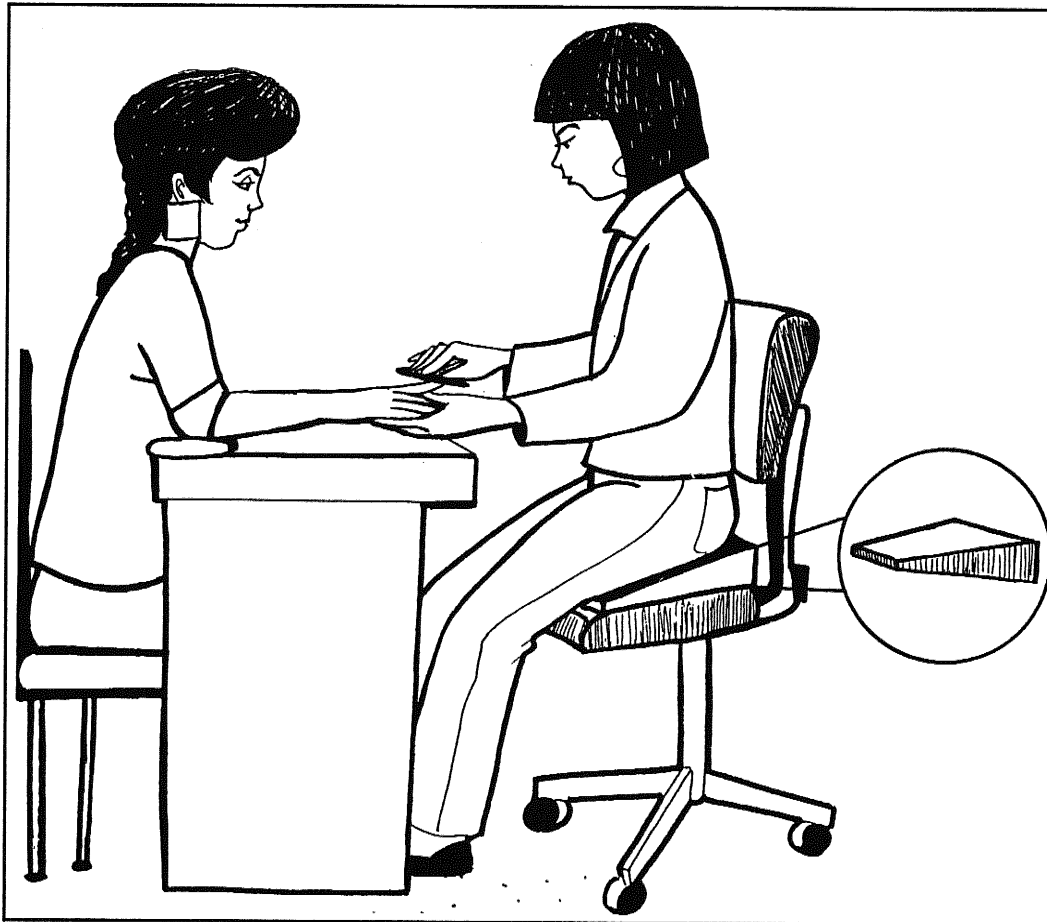


Graphic #3

- **Use a free-standing sink** for shampooing so you can reach the client's hair without twisting. (These are sometimes called *back wash systems*.)
- **Adjust the height of the client's chair.**
- **Tilt the client's head** to a position which is comfortable for you.
- **Have the client stand up** if the hair is very long.

(see next page)

- **Use a chair with a tilted seat** when doing manicures. Or sit on a wedge-shaped cushion which tilts your body forward. (See **Graphic #4.**)



Graphic #4

- **Bend your knees slightly**, and pull in your abdominal muscles, when you have to reach up. This is called a *pelvic tilt*. It keeps you from arching backward.
- **Place one foot on a stool**, or on a rung under the client's chair, when you stand for long periods of time.
- **Avoid high-heeled shoes.**
- **Stand on a foot stool** when you reach for supplies on a high shelf.

(see next page)

Foot and leg

If you stand for a long time, your feet and ankles may swell and you have more risk of getting *varicose veins* (swollen veins). Also, if any part of your foot is under pressure, you can get calluses or skin irritation at the pressure point.

You can get foot and leg problems from work in the shop if you:

- Stand for long periods, especially on a hard floor.
- Wear high-heeled shoes, especially if the toes are pointed.
- Wear shoes with poor arch support or hard soles.
- Wear shoes that don't fit well.

Some ways to prevent foot problems are:

- **Don't stand for long periods of time** without sitting.
- **Change position frequently.** Spend part of the day standing and part sitting.
- **Raise your feet on a stool** when you take a break.
- **Use a stool or moveable seat** so you can sit and rest your feet while you work on a client.
- **Wear comfortable, rubber-soled shoes with good arch support.**
- **Use shock-absorbing inserts inside your shoes.**
- **Avoid shoes with high heels or pointed toes.** They increase pressure on the toes and jam them into the front of the shoe.
- **Use a cushioned floor mat** to reduce the fatigue of standing on a hard floor.
- **Use support hose** to reduce leg swelling.

(see next page)

Work station design

Good positions and movements are easier if space and equipment in the shop are well-designed.

Poor design can force you to bend, stoop, twist, and reach in awkward ways. Bad designs include:

- Work stations that are too close together.
- Work surfaces (like countertops) that extend out too far from the wall.
- Cabinets that are too low or too high.

Well-designed work stations and equipment allow you to keep parts of your body in good positions. They make your movements easy and convenient. They also make it possible to move around, and to switch between sitting and standing, so you're not in either position all day.

Some ideas for good work station design are:

- **Hydraulic chairs for clients should adjust** up and down at least five inches.
- **Stools or rolling seats should be available**, to let you sit while you work.
- **Manicure stations should have arm rests** for the technician and client.
- **Manicurists' chairs should have tilted seats.**

Communicable Diseases in the Workplace

OBJECTIVES

After completing this module, students will be able to:

- Identify the types of organisms that cause communicable diseases.
- Describe how communicable diseases are spread.
- Discuss some specific communicable diseases which could be spread in the shop or salon.
- Explain how technicians can protect themselves against diseases at work.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	5 minutes	
II. LECTURE AND DISCUSSION. How are various communicable diseases spread? Which ones might be spread in the shop or salon, and how?	20 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart. • Handout A: <i>Quick Summary</i>.
III. SMALL GROUP EXERCISE: CASE STUDIES. What could you do to protect yourself from disease in "real life" situations at work?	15 minutes	<ul style="list-style-type: none"> • Handouts B,C,D,E: <i>Case Studies</i>.
IV. REPORT BACK AND DISCUSSION. How did students solve the problems presented in the Case Studies?	20 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION (5 minutes)

- **Explain objectives of this module to the class. (See OBJECTIVES on previous page.)**

Today we'll discuss the problems you face when you work with clients who have communicable diseases. For example, you might be exposed to a cold, the flu, or a skin infection.

We will look at some specific diseases to which you might be exposed on the job, and how the exposure might occur. We'll also suggest some ways you can protect yourself.

One disease you've probably heard a lot about is AIDS (sometimes called HIV, named for the virus that causes it). We will *not* cover HIV/AIDS today, since a separate class in this series will be devoted to it and to other diseases which are transmitted through blood, like Hepatitis B.

- **Warning: Explain that technicians should *never* give medical advice to clients. Advice and treatment should be given only by a qualified medical professional.**

II. LECTURE AND DISCUSSION (20 minutes)

- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *What is a communicable disease?*

A communicable disease is an illness that is spread from *person to person* or from *animals to people*. There are several kinds of organisms that cause communicable diseases: bacteria, viruses, parasites, and fungi.

2. *What has to happen for you to get infected with a communicable disease?*

You can get infected if:

- There is a harmful organism present (bacteria, virus, parasite, or fungus) in large enough numbers.
- The organism gets into your body.
- Your immune system is unable to fight off the organism. (You usually have a "lowered resistance" to infection when you are already sick, or when you are under stress.)

(II. LECTURE AND DISCUSSION, continued)

3. *How can harmful organisms get into your body?*

These are the main ways:

- **Through the air.** You may breathe air that has been contaminated by an infected person. For example, many respiratory diseases can be spread through the air when an infected person coughs, sneezes, sings, or spits.
- **Through water or food.** You may swallow water or food that has been contaminated by someone's stool. Many harmful organisms live in the intestine, and leave the body in the stool. For example, stool may contain bacteria or viruses that cause diarrhea. The organisms in stool can be spread if someone goes to the bathroom, does not wash, and then handles food.
- **Through an insect or animal bite.** Many insects, and animals like mice or rats, can transmit disease organisms through their bites. Insects and animals that do this are called *vectors*.
- **Through direct contact.** Organisms on the skin can spread if an infected person touches someone else.

A few diseases can be transmitted through contact with the **blood** of an infected person. These diseases include HIV/AIDS and Hepatitis B. They will be covered in another class.

4. *Can you name some diseases that are spread in each of the main ways we have listed?*

- **Air.** Tuberculosis (TB), common cold, measles, chicken pox, pneumonia, and whooping cough.
- **Water or food.** Hepatitis A, salmonella, shigella, giardia, and polio.

(II. LECTURE AND DISCUSSION, continued)

- **Insect bite.** Malaria (an infection carried by a mosquito).
- **Direct contact.** Scabies, ringworm, and lice can be spread by direct contact with someone who is infested. Colds may be spread by direct contact with someone's saliva or runny nose. Touching contaminated objects (like handkerchiefs or tissues) can also spread colds.

You can get chicken pox and impetigo if you touch the open sores of an infected person.

5. *What communicable diseases could you be exposed to when working on clients?*

- **List diseases on the chalkboard as people suggest them.**

Possible answers are:

lice
scabies
Hepatitis A
herpes (cold sore)
common cold
ringworm

- **For each disease on this list, ask the questions below.**
- **For help with the answers, refer to Handout A: *Quick Summary*.**

(II. LECTURE AND DISCUSSION, continued)

- ***How could this disease be spread in your workplace?***
- ***How could you protect yourself from getting this disease at work?***

Keep in mind that a technician is at no greater risk of getting these communicable diseases than the general population. But also remember that technicians have a special responsibility, because you could also pass your own diseases along to a client. For example, if you have a cold sore and touch it, and then touch your client, you could infect the client with a disease like herpes. So it's important to follow the proper precautions at work to protect both yourself and your client.

III. SMALL GROUP EXERCISE: CASE STUDIES (15 minutes)

In this exercise, we will work in small groups. I'll give each group one Case Study describing a situation that could actually occur in a shop or salon. In each Case Study there is some problem that involves a communicable disease.

Your small group should read over its Case Study and try to answer all the questions that appear on the same page. You can use **Handout A: Quick Summary**, which was passed out earlier today, as reference material to help you answer the questions. You will have 15 minutes. This is *not* a test and you won't have to turn your answers in.

Each small group should pick someone to be the recorder. The recorder will take notes on your discussion and report your group's answers to the entire class later on.

- **Break the class into small groups, with no more than 5 people in each group.**
- **From the four Case Studies at the end of this module (Handouts B, C, D, and E), choose one for each small group. (If you have more than four groups, it's OK to give the same Case Study to more than one group.)**
- **Give a copy of each group's Case Study to each person in that group.**
- **Make sure that each group chooses a recorder.**
- **Give the groups 15 minutes to work.**

IV. REPORT BACK AND DISCUSSION (20 minutes)

- **Bring the whole class back together.**
- **Read the class the first Case Study (Handout B). As you read the first question, ask the recorders from the small groups that worked on this Case Study each to give their group's answer to that question.**
- **Add any points that the recorders do not cover, and discuss the correct answer briefly. (Answers and Discussion Points are below.)**
- **Proceed to the next question.**
- **Continue in the same way with the rest of the questions and the other Case Studies.**

Case Studies—Answers and Discussion Points

CASE STUDY #1 (See Handout B)

There is an outbreak of lice in your community. You are working as a barber. Your shop's policy is to check each child's hair for evidence of lice before working on it. A client brings in his seven-year-old son for a haircut. As you inspect the child's hair, you see white specks close to the scalp. You suspect that they might be lice eggs (nits).

(a) How could you get lice in this situation?

Lice could crawl from the child's head onto your skin or clothing. They could then get into your hair and lay eggs. (Lice do *not* jump.)

(IV. REPORT BACK AND DISCUSSION, continued)

(b) How could you protect yourself?

Don't touch infested clients or their clothing. If you do, wash your hands immediately with soap and water. Properly sanitize any towels, combs, scissors, or other objects that touched the client.

(c) What should you say to your client?

"We do not work on clients who have lice. This is a requirement of the California State Board of Barbering and Cosmetology." (See the Board regulations.) Recommend that the child see a doctor and return when the condition has cleared up.

CASE STUDY #2 (See Handout C)

You are working in a salon doing facials. A client requests a facial. You notice that she has a cold sore around the corner of her mouth. It looks cracked and you think that it might drain during the facial.

(a) What diseases could you get by touching a draining sore with your bare hand?

You could get exposed to Herpes Simplex 1 or impetigo from various types of sores.

(b) How could you protect yourself?

Don't touch a cold sore or fever blister. Use gloves if you think that you might accidentally touch any open sore. If you use gloves, make sure you don't touch your skin with a contaminated glove.

(IV. REPORT BACK AND DISCUSSION, continued)

(c) What should you say to your client?

“We never work on a client who has open sores in the areas where we will be working.”

Recommend that the client see a doctor and return when the condition has cleared up.

(Notice that there is a health risk not only to the technician, but also to the client. A technician could infect a client by touching the client’s open sore. Bacteria from the technician’s hand could get into the sore.)

(Likewise, the technician might become infected with a disease by touching the sore.)

CASE STUDY #3 (See Handout D)

You are working on a client in the summertime. You notice that he has red, scaly patches shaped like rings on his scalp. You also notice these rings on his face and neck.

(a) What disease could you get by touching the scaly patches with your bare hand?

You could get exposed to *ringworm*. It is seen most often in the warmer months of the year.

(b) What should you say to your client?

“We don’t work on clients who have infectious diseases. I think that you have ringworm.” Recommend that the client see a doctor and return when the condition clears up.

(IV. REPORT BACK AND DISCUSSION, continued)

(c) What should you do to protect yourself after the client leaves?

Disinfect everything that came into contact with the client—for example, tools and the chair. Sanitize the towel and the drape used to cover the client. Wash your hands with soap and water.

CASE STUDY #4 (See Handout E)

When one of your favorite clients is making an appointment, he mentions that he has a bad cold but desperately needs his hair cut and styled for an important job interview.

(a) How could you get a cold from this client?

You might get infected if he sneezes or coughs on you. He might also pass along the cold virus if he touches you, or touches any item in your work area that you touch also.

(b) How could you protect yourself?

You could refuse to work on him that day. Or, if you decide to let him come in, you might wear a mask and ask him to wear one also. Wash your hands, and any items he touches, with soap and water to disinfect them.

(c) What should you say to your client?

Tell him you do not work on sick clients. Ask if he would like to reschedule. Or, if you decide to work on him, ask him to wear a mask so that you and other people don't get the cold.

(IV. REPORT BACK AND DISCUSSION, continued)

- **End the class.**

This concludes our class on Communicable Diseases. As you can see from our discussion and the handout, it is possible to protect yourself from exposure to many of these diseases at work. Washing your hands before and after serving a client, using gloves to cover sores, and disinfecting your equipment properly will help prevent infection.

In another session we will be discussing HIV/AIDS and Hepatitis B.

Handout A

Communicable Diseases in the Workplace

QUICK SUMMARY

DISEASE OR HEALTH PROBLEM	HOW IT IS SPREAD IN THE SHOP	HOW TO PREVENT IT
<p>COMMON COLD</p> <p>Type of organism: Virus.</p> <p>Incubation period: 1-3 days.*</p> <p>Symptoms: Chills, headache, coughing, sneezing, sore or scratchy throat, runny nose, muscle aches, and fatigue.</p>	<ul style="list-style-type: none"> • Breathing air contaminated by an infected client coughing, sneezing, or spitting. • Touching something that is contaminated, then touching your own mouth, nose, or eyes. 	<ul style="list-style-type: none"> • Cover your mouth and nose when coughing or sneezing, and have the client do the same. • Wash your hands with soap and water before and after serving each client.** • Work in a well-ventilated room.
<p>HEPATITIS A</p> <p>Type of organism: Virus.</p> <p>Incubation period: 15-50 days, with an average of 28-30 days.*</p> <p>Symptoms: Hepatitis means inflammation of the liver. Symptoms include: fever, fatigue, loss of appetite, abdominal pain, nausea, vomiting, dark urine, light stools, and jaundice (yellowing of the skin or the whites of the eyes).</p>	<ul style="list-style-type: none"> • Eating or drinking anything that has been contaminated with particles of infected stool. (If someone with Hepatitis A does not wash after going to the bathroom, then touches your food, you could get sick from the food.) 	<ul style="list-style-type: none"> • Wash your hands with soap and water before and after serving each client.** • Wash your hands with soap and water, and have the client do the same, before touching food.

* Incubation period is the length of time it takes after exposure to show symptoms of the disease.

** Rules and Regulations of the State Board of Barbering and Cosmetology, Title 16, Chapter 9, California Code of Regulations.

(see next page)

DISEASE OR HEALTH PROBLEM	HOW IT IS SPREAD IN THE SHOP	HOW TO PREVENT IT
<p>HERPES SIMPLEX — TYPE 1</p> <p>Type of organism: Virus.</p> <p>Incubation period: 2-12 days with an average of 4 days.*</p> <p>Symptoms: Cold sores or painful blisters on the face, gums, lips, or mouth. Sores are often recurring.</p>	<ul style="list-style-type: none"> • Touching an infected client's cold sores or fever blisters. • Touching fluid draining from the eyes. • Touching something contaminated with saliva, phlegm (mucus discharged through the mouth), or nasal discharge. 	<ul style="list-style-type: none"> • Don't touch cold sores or fever blisters. • Use gloves to prevent accidentally touching a sore or blister. • Wash your hands with soap and water before and after serving each client.** • Properly disinfect equipment.** • Properly sanitize towels.**
<p>IMPETIGO</p> <p>Type of organism: Bacteria.</p> <p>Incubation period: 2-4 days.*</p> <p>Symptoms: Rash — the blisters turn into honey-colored crusts. May occur anywhere, but most often around the mouth, in the nose, and on the chin. May last for 2-3 weeks.</p>	<ul style="list-style-type: none"> • Touching an open sore on a client's mouth, nose, or chin. • Touching something contaminated with the fluid from a sore, especially if you then touch your own nose or mouth. 	<ul style="list-style-type: none"> • Don't touch open sores. • Use gloves to prevent accidentally touching an open sore. • Wash your hands with soap and water before and after serving each client.** • Properly disinfect equipment.** • Properly sanitize towels.**

* Incubation period is the length of time it takes after exposure to show symptoms of the disease.

** Rules and Regulations of the State Board of Barbering and Cosmetology, Title 16, Chapter 9, California Code of Regulations.

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DISEASE OR HEALTH PROBLEM	HOW IT IS SPREAD IN THE SHOP	HOW TO PREVENT IT
<p>LICE (HEAD, BODY, OR PUBIC)</p> <p>Type of organism: Vector.</p> <p>Incubation period: Eggs hatch in 5-8 days; the lice mature in two weeks and are then able to lay more eggs.*</p> <p>Symptoms: The scalp, genital area, or other hairy part of the body gets infested with eggs (nits). Larvae (like worms) hatch from the eggs and later grow into adult lice. The person who is infested feels severe itching.</p>	<ul style="list-style-type: none"> • Touching an infested client. Lice crawl (they don't jump) from one person to another. • Touching articles that are infested. (Examples are chairs, combs, hats, and clothing.) 	<ul style="list-style-type: none"> • Don't touch infested clients or their clothes. • Properly disinfect equipment.** • Properly sanitize towels.**
<p>RINGWORM</p> <p>Type of organism: Yeast (a fungus).</p> <p>Incubation period: 10-14 days.*</p> <p>Symptoms: A small, red, raised area spreads on the skin or scalp, later developing into scaly patches. Patches are ring-shaped. Infected hairs become brittle and break off. On the scalp, this can lead to temporary baldness.</p>	<ul style="list-style-type: none"> • Touching the patches on a client's skin or scalp. (Lesions may be moist, dry, or crusted.) • Touching contaminated articles, like chairs, scissors, combs, or towels. 	<ul style="list-style-type: none"> • Don't touch patches on client's skin or scalp. • Use gloves to prevent accidentally touching patches. • Wash your hands with soap and water before and after serving each client.** • Properly disinfect equipment.** • Properly sanitize towels.**

* Incubation period is the length of time it takes after exposure to show symptoms of the disease.

** Rules and Regulations of the State Board of Barbering and Cosmetology, Title 16, Chapter 9, California Code of Regulations.

(see next page)

DISEASE OR HEALTH PROBLEM	HOW IT IS SPREAD IN THE SHOP	HOW TO PREVENT IT
<p>SCABIES</p> <p>Type of organism: Vector (a mite).</p> <p>Incubation period: 2-6 weeks.*</p> <p>Symptoms: There is a red, itchy rash on the skin. Tiny tunnels appear between the fingers, on wrists and elbows, under the arms, or in other warm, moist areas. Itching is more intense at night. Itching may continue 1-2 weeks after treatment.</p>	<ul style="list-style-type: none"> • Prolonged contact with the skin of an infested client. • Touching a client's infested clothing. 	<ul style="list-style-type: none"> • Don't touch infested clients or their clothes.** • Wash your hands with soap and water before and after serving each client.** • Properly disinfect equipment.** • Properly sanitize towels.**
<p>TUBERCULOSIS (TB)</p> <p>Type of organism: Bacteria.</p> <p>Incubation period: After initial infection with TB, the disease may lie dormant for a lifetime. Otherwise lung lesions may develop in 4-12 weeks. In approximately 80-95% of people these lesions will heal. The only sign they were once infected will be a positive skin test. Some people will later develop active TB. The greatest risk of active disease is within 1-2 years after initial infection.*</p> <p>Symptoms: Fever, weight loss, night sweats, cough, chest pain, coughing up blood, positive TB skin test, abnormal chest X-ray.</p>	<ul style="list-style-type: none"> • Breathing air contaminated by an infested client coughing, sneezing, or singing. Contact must be over a prolonged period of time. • Touching droplets from the nose or throat of an infested client, then touching your own nose, mouth, or eyes. 	<ul style="list-style-type: none"> • Cover your mouth and nose when coughing or sneezing, and have the client do the same. • Wash your hands with soap and water before and after serving each client.** • Work in a well-ventilated room.

* Incubation period is the length of time it takes after exposure to show symptoms of the disease.

** Rules and Regulations of the State Board of Barbering and Cosmetology, Title 16, Chapter 9, California Code of Regulations.

Handout B Communicable Diseases in the Workplace

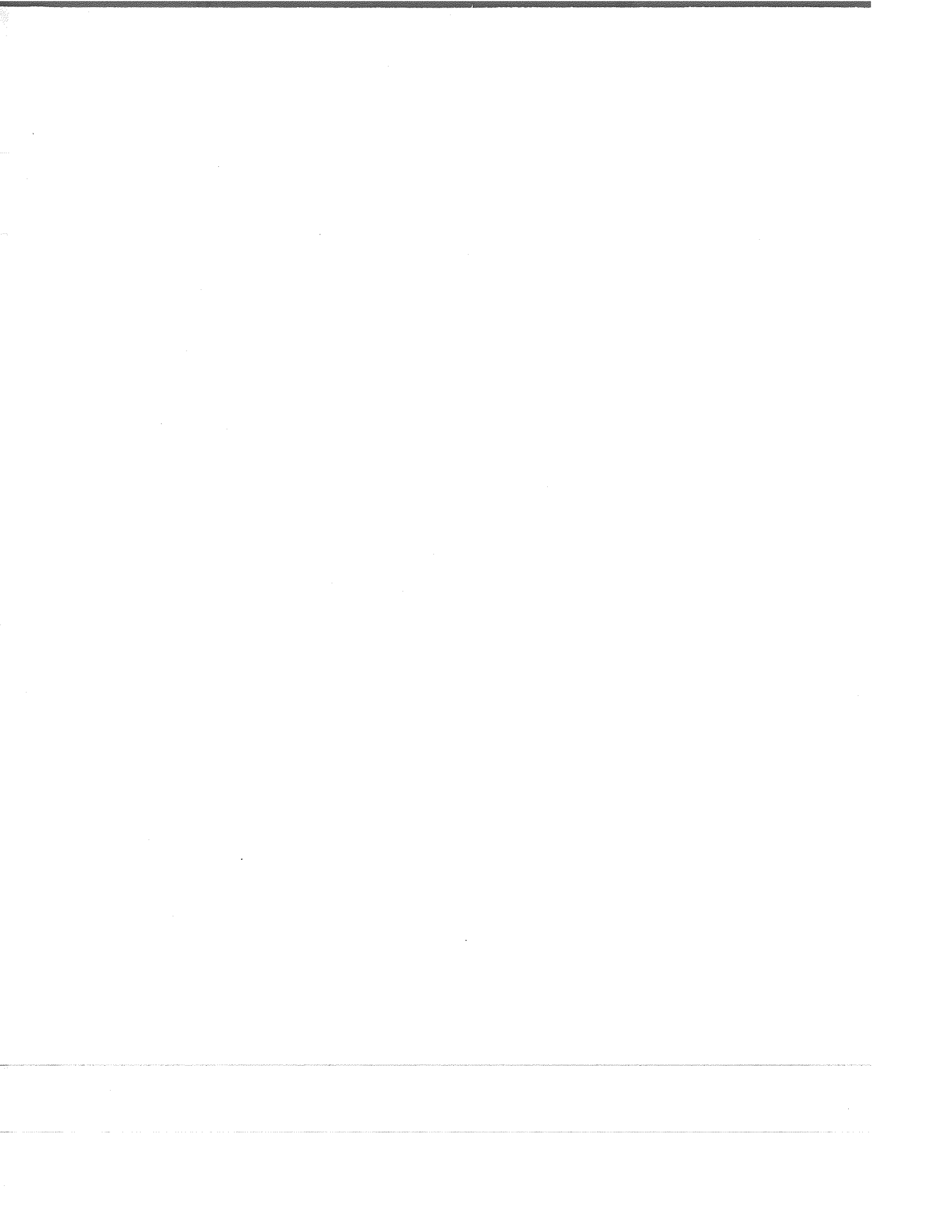
CASE STUDY #1

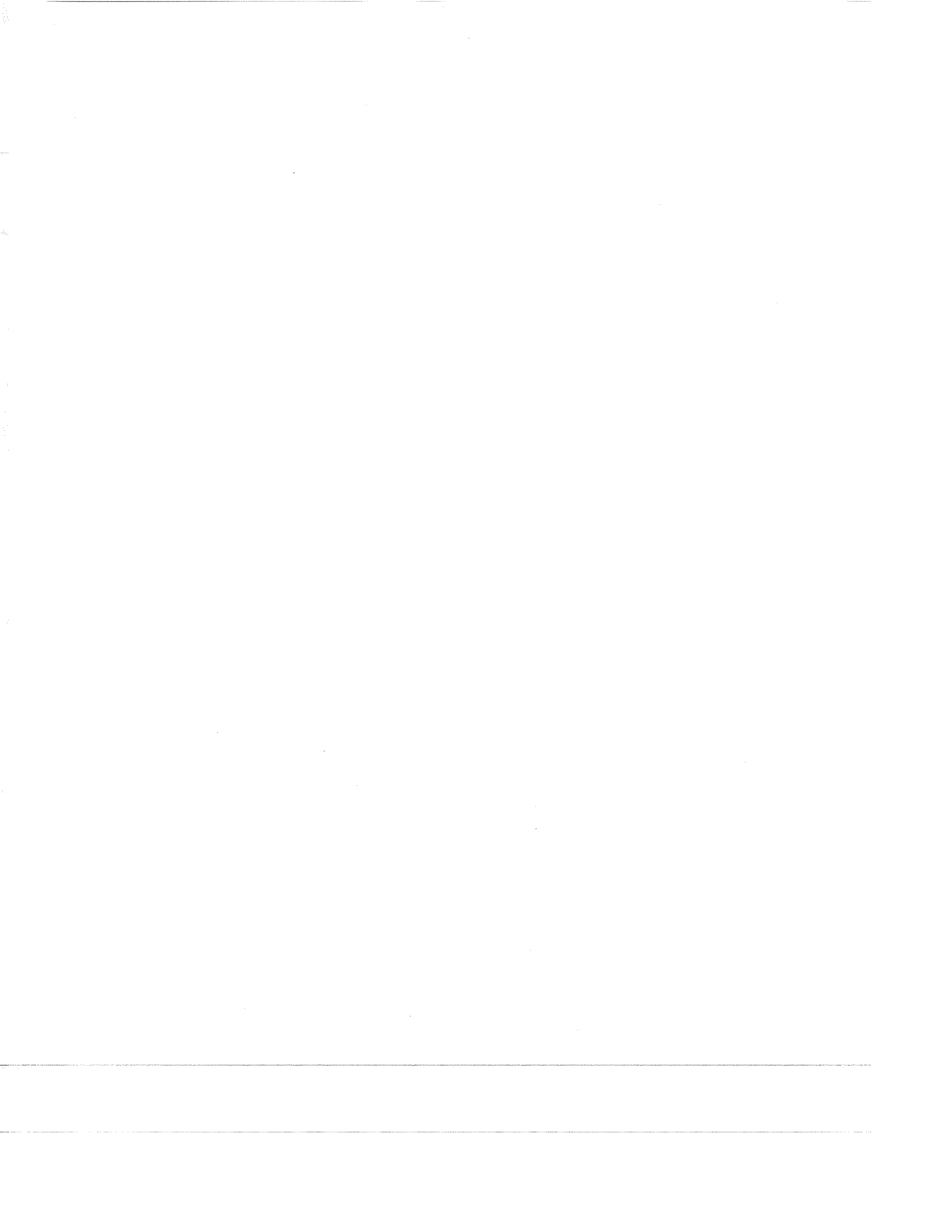
There is an outbreak of lice in your community. You are working as a barber. Your shop's policy is to check each child's hair for evidence of lice before working on it. A client brings in his seven-year-old son for a haircut. As you inspect the child's hair, you see white specks close to the scalp. You suspect that they might be lice eggs (nits).

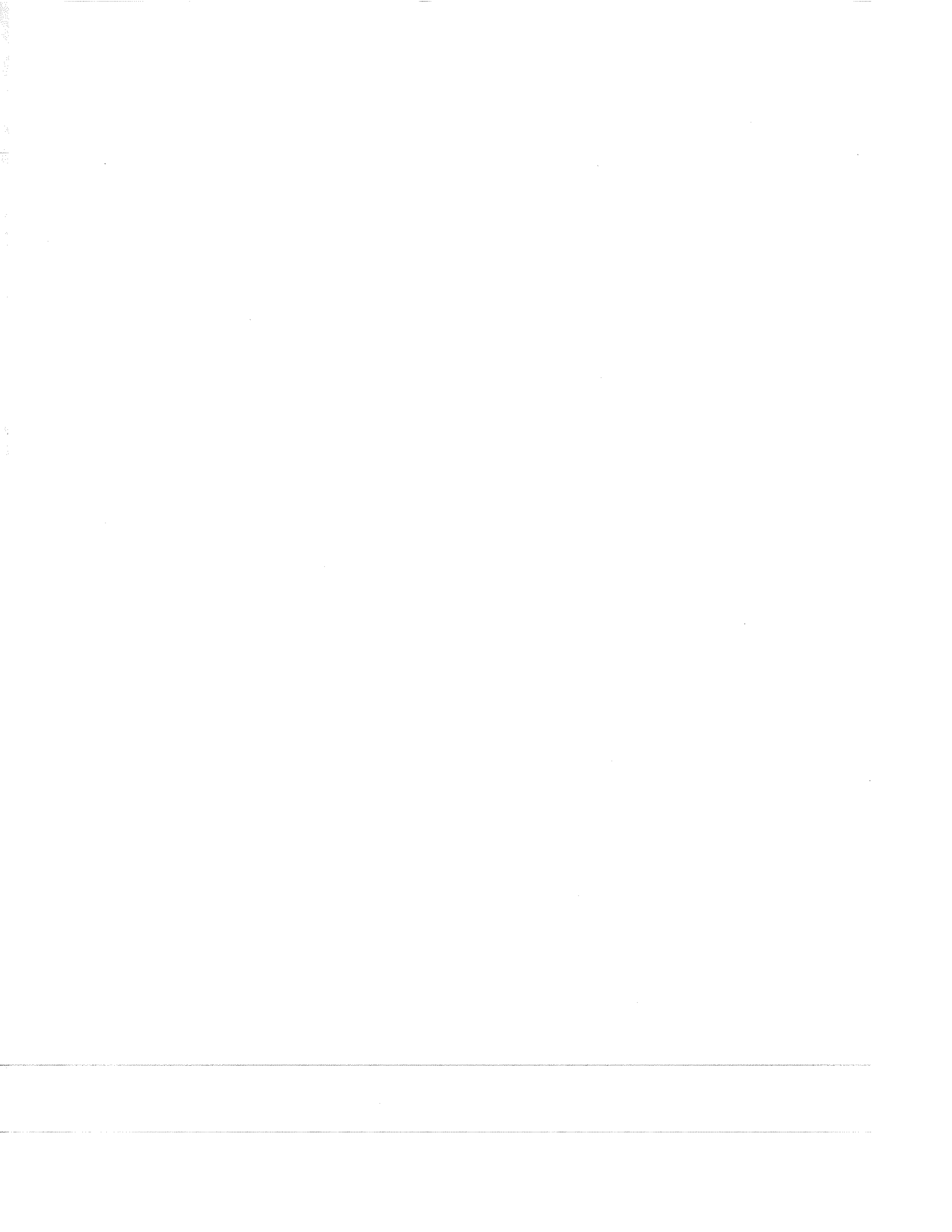
(a) How could you get lice in this situation?

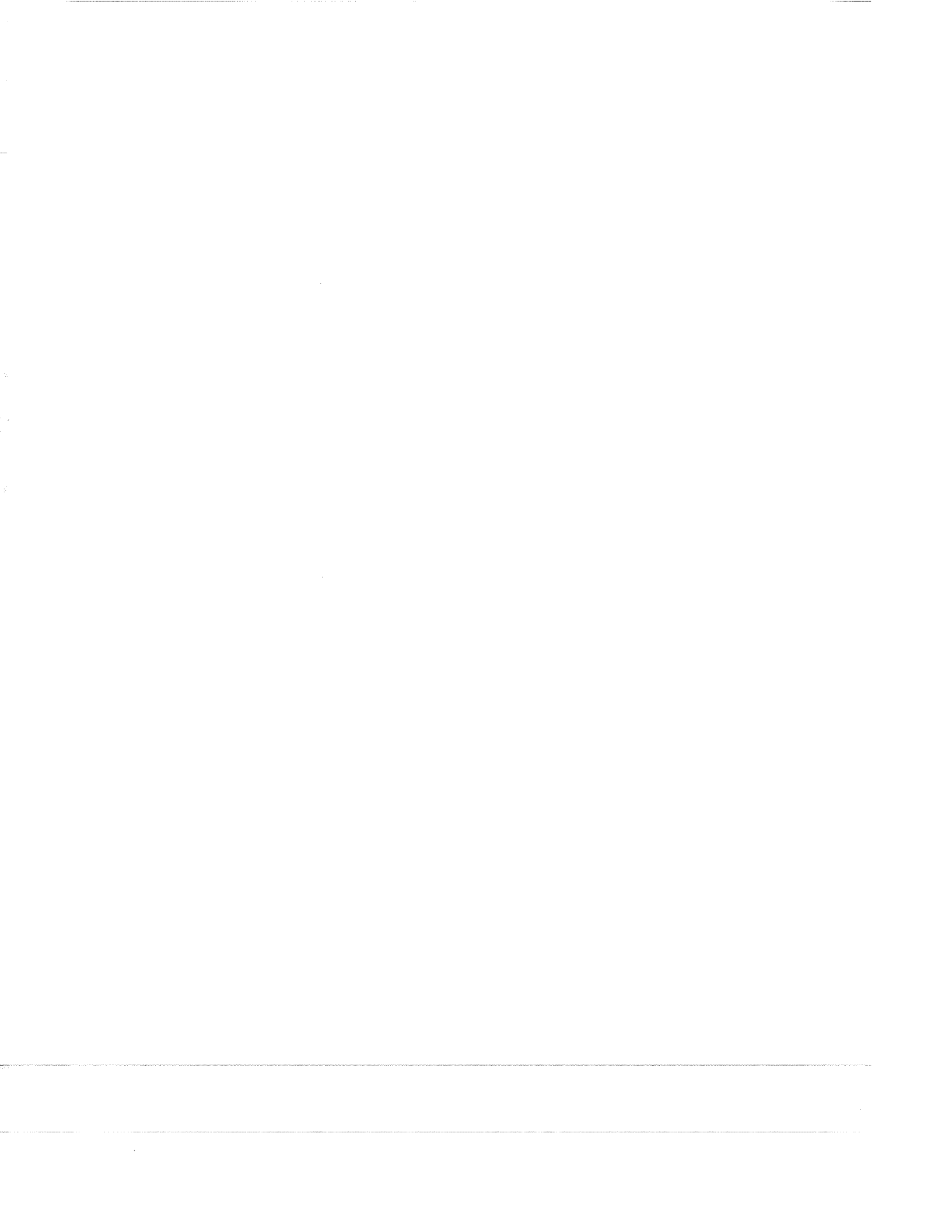
(b) How could you protect yourself?

(c) What should you say to your client?









HIV/AIDS and Hepatitis B

OBJECTIVES

After completing this module, students will be able to:

- Describe the diseases caused by the Human Immunodeficiency Virus (HIV) and the Hepatitis B Virus (HBV).
- Define AIDS (Acquired Immune Deficiency Syndrome).
- List several ways that HIV/AIDS and HBV can be spread on and off the job.
- Identify some work practices that could expose a technician to HIV/AIDS or HBV.
- Explain how technicians can protect themselves against HIV/AIDS and HBV.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	5 minutes	
II. HIV/AIDS GAME. Instructor poses questions on HIV/AIDS to four teams.	30 minutes	<ul style="list-style-type: none">• Chalkboard or flipchart.• Game prizes for students.
III. LECTURE AND DISCUSSION. What is Hepatitis B? How is it spread? What rules does OSHA have on exposure to blood?	15 minutes	<ul style="list-style-type: none">• Chalkboard or flipchart.
IV. GROUP EXERCISE. What precautions can you take to protect yourself from HIV/AIDS and Hepatitis B?	10 minutes	<ul style="list-style-type: none">• Chalkboard or flipchart.• Handout A: <i>Quick Summary.</i>
Total Time: 1 Hour		

I. INTRODUCTION (5 minutes)

- **Explain objectives of this module to the class.**
(See OBJECTIVES on previous page.)

Today we'll talk about two very serious communicable diseases—HIV/AIDS and Hepatitis B.

HIV stands for *Human Immunodeficiency Virus*, the virus that causes AIDS. AIDS stands for *Acquired Immune Deficiency Syndrome*. It has become the disease of our time, and you've probably heard a lot about it already. There's a lot of misinformation about AIDS around, so today we'll look at the facts. We'll find out what AIDS is and how you get it.

Another dangerous disease is Hepatitis B. It's actually a lot more common than HIV/AIDS, and much easier to get.

It's possible for you to get exposed to HIV/AIDS and Hepatitis B at work, but it's not too likely. These diseases are spread by blood and body fluids. It is important to note that most tasks done in the shop or salon do *not* expose you to these diseases. You have a much greater chance of getting these diseases *off* the job than in the workplace.

There have been *no* reported cases of barbers or cosmetologists getting infected with HIV on the job. Still, it is *possible* for you to be exposed to either HIV/AIDS or Hepatitis B at work. When you use sharp instruments like razors, clippers, or tweezers, they might puncture the client's skin and then accidentally puncture yours. If the client has one of these diseases in the bloodstream, you could get exposed this way. Because such exposure is possible, it's important to learn how to protect yourself.

Clients also face a risk of infection. If equipment in the shop isn't properly disinfected, it can pass disease organisms from one client to another.

II. HIV/AIDS GAME (30 minutes)

We're going to play a game to see what you already know about HIV/AIDS. You'll be divided into four teams. I'll give the first team a question, and you'll have 30 seconds to answer it. Members of the team should talk it over and come up with just *one* answer.

If the team doesn't answer the question correctly, any other team can try to answer the same question.

Next, I'll give the second team a question, and so on.

Each correct answer is worth 5 points. The team with the most points wins and each person on that team gets a prize.

- **Ask one person from the class to volunteer to keep the time and score.**
- **Divide the rest of the class into four teams.**
- **Read the first question below, and ask the first team to answer within 30 seconds.**
- **If the first team cannot give the correct answer, ask if any other team has the answer.**
- **The correct answer directly follows each question. For some questions, there is also "Extra Info" to present to the class when you explain the answer.**
- **Read the second question and ask the second team to answer; continue with the rest.**
- **Each team with a correct answer gets 5 points.**
- **Make sure you have a prize for each member of the winning team. Prizes could be candy, beauty supplies, or even condoms. Be creative!**

(II. HIV/AIDS GAME, continued)

1. What does "AIDS" stand for? What does the name mean?

Answer: AIDS stands for *Acquired Immune Deficiency Syndrome*.

Acquired means that you aren't born with the disease, you get it from other people. (You "acquire" it.)

Immune Deficiency means that the disease damages your body's immune system, so it doesn't work as well. Without a healthy immune system, you have trouble fighting off all kinds of organisms that can make you sick.

Syndrome means that it is not a single disease. AIDS is a collection of different illnesses. When your immune system is damaged, many different organisms can infect your body.

Extra Info: The federal Centers for Disease Control publish a list of infections, diseases, and cancers that people with AIDS often get. The list helps medical professionals to diagnose AIDS in their patients.

2. What virus causes AIDS?

Answer: The *Human Immunodeficiency Virus (HIV)*. This virus is transmitted through blood and other body fluids.

3. Is there a vaccine to prevent HIV/AIDS, or a cure for it?

Answer: No. Right now, there is no vaccine. There is no cure either. Scientists are working on them.

4. Name three symptoms of HIV infection.

Answer: Any of these:

(II. HIV/AIDS GAME, continued)

- Fatigue
- Night sweats
- Fever
- Chills
- Weight loss
- Oral thrush (white creamy patches in the mouth)
- Enlarged lymph nodes (in the neck, armpits, or groin).

5. People with AIDS get many diseases because of their weak immune systems. Name the most common disease among people with AIDS in the U.S.

Answer: *Pneumocystis carinii pneumonia*. Sometimes called *PCP*, this is a very rare form of pneumonia. (If students say “pneumonia,” that is a good enough answer.)

Extra Info: Other common diseases, infections, and cancers that people with AIDS get are:

- Tuberculosis—a bacterial infection which can sometimes cause severe lung damage.
- Kaposi’s sarcoma—a rare form of skin cancer which produces purple spots (lesions) on the skin.
- AIDS dementia—a nervous system disorder which can cause loss of memory and physical coordination.
- Cryptosporidia—an infection which causes severe diarrhea.
- Severe yeast infection (candidiasis)—in both men and women; in the vagina, throat, or lungs.

Remember that AIDS is not one single disease, but a group of infections a person gets because of a weak immune system. People with AIDS die from one of the infections or cancers their immune systems can’t fight.

(II. HIV/AIDS GAME, continued)

6. HIV/AIDS is a problem only for gay men and drug users. True or False?

Answer: False.

Extra Info: Anyone can get HIV/AIDS. Heterosexuals get it, women get it, and people who don't inject drugs get it.

7. Name two body fluids that can spread HIV/AIDS.

Answer: Any of these:

- Blood
- Semen
- Vaginal fluid
- Breast milk
- Any body fluid that contains blood.

8. Name two body fluids that do not spread HIV/AIDS.

Answer: Any of these:

- Saliva
- Sweat
- Tears
- Nasal secretions
- Vomit.

9. Name three kinds of contact among people that can spread the AIDS virus.

Answer:

- Sexual contact with an infected person (vaginal intercourse, anal sex, or oral sex).
- Sharing drug needles and syringes with an infected person.

(II. HIV/AIDS GAME, continued)

- From an infected mother to her baby during pregnancy, in childbirth, or through breast milk.

10. Name two ways that you cannot get HIV/AIDS, even though some people are afraid you can.

Answer: Any of these:

- Through the air
- Shaking hands
- Eating together
- Sharing books, paper, pens, or telephones
- Sharing the bathroom
- Insect bites
- Donating blood.

Extra Info: You cannot get infected with HIV from *donating blood* in the U.S. because a new sterile needle is used for each donor. Your chance of receiving HIV through a *blood transfusion* is very low because the blood supply is tested, and any infected blood is destroyed.

11. How do most people with HIV/AIDS get infected?

Answer: Two-thirds of the people with HIV/AIDS got infected from sexual contact with an infected partner. It can be either heterosexual or homosexual contact.

12. How can you tell if you are infected with the AIDS virus?

Answer: You can get a blood test that will tell you.

Extra Info: The blood test is called an *antibody test*. It is not actually a test for AIDS, although many people call it the "AIDS test." It's a test to see if you have antibodies to the AIDS virus in your blood.

Your blood produces antibodies to fight off foreign sub-

(II. HIV/AIDS GAME, continued)

stances that enter the body, like viruses. When HIV gets into your bloodstream, a specific antibody is produced. It's this antibody which the test looks for.

The HIV antibody test may not be positive right after you are exposed. You usually produce antibodies within three months, but sometimes it takes up to six months. As soon as you begin to produce antibodies, you'll test positive. But remember—even then, you may not have any symptoms of HIV/AIDS. Symptoms may not show up until years later.

For information about testing and counseling, call:

- Your doctor
- Your local Public Health Department
- An AIDS service organization
- Your local Red Cross chapter
- The Northern California AIDS Hotline (no charge):
1-800-FOR-AIDS
- The Southern California AIDS Hotline (no charge):
1-800-922-AIDS.

13. You can be fired from your job if you test positive for HIV. True or False?

Answer: False.

Extra Info: First, you have a right to keep your test results confidential. You don't have to tell anyone, not even your employer. Second, even if you do tell your employer, you can't be fired. People with HIV/AIDS are protected from job discrimination under state and federal law.

(II. HIV/AIDS GAME, continued)

14. You should protect yourself by staying away from a co-worker with HIV/AIDS. True or False?

Answer: False.

Extra Info: You can't get HIV/AIDS from any kind of *casual contact* with another person. You won't get HIV/AIDS from clothes, phones, or toilet seats. You can't get HIV/AIDS by eating together or sharing bathrooms. You don't get it through the air or from food.

If a person has HIV/AIDS, his or her greatest need is for your friendship, understanding, and help. Staying away is the *worst* thing you could do.

15. Name one way that you can protect yourself from getting HIV/AIDS in your personal life off the job.

Answer: Any of these:

- Use a latex condom for any kind of sexual contact.
- Don't inject drugs. If you do, use a clean needle.

Extra Info: A condom is more effective against HIV/AIDS and other diseases if it is used with a spermicide. Many people also use a lubricant with the condom. If you do, use a water-based lubricant, like K-Y® Brand Jelly. An oil-based lubricant (like petroleum jelly) can damage the condom.

16. Name one way that a technician might get exposed to HIV/AIDS on the job.

Answer: Although there have been *no* reported cases of barbers or cosmetologists getting infected on the job, you *might* be exposed in these ways:

- You could puncture your skin with a tool or instrument that carries infected blood. For example, you

(II. HIV/AIDS GAME, continued)

might cut yourself with a contaminated razor, nail clippers, or tweezers.

- Blood from an infected person could enter your body through an open wound, cut, sore, or skin rash.

17. Name two ways that technicians can protect themselves from getting exposed to blood at work.

Answer: Any of these:

- Handle all sharp instruments very carefully (razors, nail clippers, etc.).
- Use a puncture-proof container when you throw away sharp objects like razor blades.
- Disinfect tools, equipment, and surfaces if they get blood on them.
- Disinfect all instruments after they are used on clients, even if you see no blood.
- Wash your hands before and after contact with each client.
- If a client bleeds, hand the client a cotton ball to stop the bleeding. Have the client dispose of it rather than doing so yourself.
- If you get someone's blood on your skin, immediately wash with plain soap and water. Lather for at least 10 seconds, then rinse.
- If you have sores, scratches, cuts, or broken skin (from dermatitis), wear latex gloves.

Extra Info: The U.S. Public Health Service says that all U.S. workers must follow certain guidelines if they might come into contact with blood or body fluids on

(II. HIV/AIDS GAME, continued)

the job. These guidelines are called *Universal Precautions*. OSHA (the Occupational Safety and Health Administration) has similar rules. These agencies say that to protect yourself you must treat *all* blood, and body fluids containing blood, as if you *know* they are infected. In other words, there's no need to decide if a client or co-worker might have HIV/AIDS, or to take different precautions with different people. That won't work! You usually can't tell who has HIV/AIDS. But if you treat *all* blood as if it is infected, you protect yourself all the time.

18. How should you disinfect tools and instruments that you have used on a client?

Answer: Any of these:

- To clean razors, scissors, tweezers, clippers, or other sharp instruments, wash them in water with either a soap or a detergent. Then totally immerse them for at least ten minutes in an EPA-registered disinfectant proven to kill bacteria, fungi, and viruses. (The label should tell you.) (**Reference:** Rules and Regulations of the California State Board of Barbering and Cosmetology.)
- After you use electrical equipment on a client, clean it with an EPA-registered disinfectant proven to kill bacteria, fungi, and viruses. (The label should tell you.) (**Reference:** Rules and Regulations of the California State Board of Barbering and Cosmetology.)

- **At the end of the HIV/AIDS game, ask the person keeping score which team has the most points. Give each member of the winning team a prize.**

III. LECTURE AND DISCUSSION (15 minutes)

- **Distribute Handout A: *Quick Summary*.**

I am passing out a summary of today's lesson for you to refer to during the class. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. *What is hepatitis?*

Hepatitis is an inflammation of the liver. It can be caused by many different things—viruses, bacteria, drugs, or chemicals. When it's caused by viruses or bacteria, it's called *infectious hepatitis*.

There are several different types of infectious hepatitis. People often get them confused. Hepatitis A is covered in another class in this series, on Communicable Diseases. Hepatitis B is the type we'll talk about today. A and B are the common types. There are others, but they are rare and we won't cover them.

2. *What is Hepatitis B?*

Hepatitis B is one kind of hepatitis. It is caused by a virus that grows in liver cells. When the virus inflames the liver, the condition is called *acute Hepatitis B*. Symptoms may take from six weeks to six months to appear. The symptoms include: fever, fatigue, loss of appetite, nausea, vomiting, dark urine, abdominal

(III. LECTURE AND DISCUSSION, continued)

pain, and jaundice (the eyes and skin turn yellow). Patients may get very sick or even die, but they usually get better.

Some people don't get better after an acute Hepatitis B infection. The disease can develop into *chronic* Hepatitis B. It can eventually lead to cirrhosis (hardening of the liver) and liver cancer.

3. How is Hepatitis B spread?

The Hepatitis B Virus is sometimes called *HBV*. HBV is spread in the same body fluids as HIV: blood, semen, vaginal fluid, and breast milk. But *unlike* HIV, HBV can also be spread in saliva (for example, through a human bite.) HIV has *never* been spread by saliva or a bite.

Ten percent of adults who get infected with Hepatitis B become *carriers*. They don't usually have any symptoms. You can get the disease from them, but you can't tell that they are infected by looking at them.

4. How does HIV compare to HBV—which virus is the greater risk to technicians?

HBV is the greater risk because:

- HBV is a much sturdier virus. It can survive outside the body for seven days, even if it dries out. That's why it is very important to disinfect tools, equipment, and surfaces if you get blood on them. On the other hand, HIV dies within a few hours when it is outside the body.
- HBV is more concentrated in the blood of an infected person. For example, just a few drops of blood infected with HBV can contain up to *100 million particles* of the virus. On the other hand, a few drops of blood infected with HIV contain only about *100 particles* of the virus.

(III. LECTURE AND DISCUSSION, continued)

5. What should you do to protect yourself from Hepatitis B at work?

Since Hepatitis B is spread in the same ways HIV is, take the same precautions. For example, handle sharp instruments carefully, and dispose of them in puncture-proof containers. Disinfect them if you're going to re-use them. Wash your hands before and after you have contact with a client. Wash off any blood immediately, and wear gloves if you have cuts or sores.

6. Does OSHA have regulations covering job exposure to blood?

Federal OSHA has new rules on *Occupational Exposure to Bloodborne Pathogens*. In California, Cal/OSHA has similar rules. (The Cal/OSHA rules are in Section 5193 of the California Code of Regulations, Title 8, General Industry Safety Orders.)

These rules are designed to protect workers against Hepatitis B, HIV/AIDS, and other diseases which are spread by blood. They cover all workers who "reasonably anticipate" contact with blood on the job. Most of those directly affected are healthcare and public safety workers, but the rules may also cover workers in many other types of jobs.

OSHA and Cal/OSHA consider job exposure to blood to mean someone's blood getting into your body through skin contact; through mucous membranes (in your eyes, nose, or mouth); or through a sharp instrument. For you to be covered by the bloodborne disease rules, this exposure must occur while you are performing your job duties.

Because barbers and cosmetologists have some chance of blood exposure on the job, it is possible that they are covered by the new rules. It is the *employer's* responsibility, not OSHA's or Cal/OSHA's, to determine if employees are covered. Employers can call the Cal/

(III. LECTURE AND DISCUSSION, continued)

OSHA Consultation Service to ask whether the Bloodborne Pathogen rules apply to their workers.

Workers who feel that they are being exposed to blood and are not being properly protected have a right to file a Cal/OSHA complaint.

You can find phone numbers for the Cal/OSHA Consultation Service and for filing Cal/OSHA complaints in your local phone book. Check the "Government Pages" under "California, State of, Industrial Relations Department, Occupational Safety and Health."

Remember that if you are a student or independent contractor, you are *not* covered by OSHA or Cal/OSHA at all.

7. What do Cal/OSHA's Bloodborne Pathogen rules say?

Under these new rules, employers must:

- Develop a written **exposure control plan** that identifies *who* has exposure to blood and how to reduce the danger.
- Follow **Universal Precautions**. Everyone in the workplace must treat *all* blood as if it could be infected.
- Use **engineering controls** where feasible to isolate or remove the danger of exposure to blood. For example, puncture-proof boxes should be available to dispose of contaminated sharp instruments like razors.
- Train workers on proper **work practices** so they can perform their jobs in the safest way.
- Provide **personal protective equipment** whenever exposure to blood is likely. The equipment might include gloves and eye protection (like goggles).

(III. LECTURE AND DISCUSSION, continued)

- Use **good housekeeping practices** like a regular cleaning schedule and proper decontamination procedures for equipment.
- Give workers an opportunity to receive **free Hepatitis B vaccine** if they will have any possible exposure to blood.
- Set up a **hazard communication program** to notify workers when they are around possible blood hazards. For example, there should be special signs and labels.
- Give **information and training** to workers about Cal/OSHA's Bloodborne Pathogen rules, infectious bloodborne diseases in general, safe work practices, and what to do if exposed to blood on the job.
- Provide a **post-exposure medical evaluation** after any worker gets exposed to blood. This should include free and confidential medical testing, counseling, and follow-up.

As with all Cal/OSHA regulations, employers can be cited and fined if they don't follow these rules.

8. *What should you do if you get stuck by a razor or other sharp instrument that might be contaminated with blood?*

- Make your wound bleed immediately. (Bleeding helps get contamination out.)
- Wash your wound with soap and water.
- Report the incident to your supervisor or employer.
- Get medical treatment.

Cal/OSHA also requires your employer to give you free

(III. LECTURE AND DISCUSSION, continued)

medical evaluation and follow-up after you have any blood exposure. This process should be confidential.

The employer should send you to a medical professional who will:

- Investigate and document how the exposure occurred
- Identify the person to whose blood you were exposed
- Test that person for disease (with his or her consent)
- Test *you* (with your consent) to see if a Hepatitis B or HIV infection occurred
- Give you immediate treatment when needed, including the Hepatitis B vaccine or other medications
- Give you counseling
- Evaluate any illness you report in the future that might be related to the exposure.

IV. GROUP EXERCISE (10 minutes)

- Introduce this “brainstorming” exercise.
- Make three columns across the board:
1) TASK, 2) HOW EXPOSED? and
3) PRECAUTIONS.
- Ask the class:

What tasks that you do in the shop might expose you to blood?

- List down the left column the procedures which students mention. If a task mentioned has no exposure risks, discuss why it shouldn't be listed on the board.
- Then ask the class:

How could you get exposed to blood when you do each of these tasks?

- For each task, record student's answers on the board in the middle column.
- Then ask the class:

What could you do to protect yourself when you do each task?

- For each task, record students' answers on the board in the right column.
- A completed chart might look like this:

(IV. GROUP EXERCISE, continued)

TASK	HOW EXPOSED?	PRECAUTIONS
Shave	Cutting client with razor	<ul style="list-style-type: none"> • Handle the razor carefully. • Dispose of used razor blades in a puncture-proof container. • Disinfect the razor after use. • Wash your hands before and after working on the client. • Wash off any blood immediately. • Wear gloves if you have cuts or sores. • If a client bleeds, hand the client a cotton ball to stop the bleeding. Have the client dispose of it.
Haircut	Cutting client with razor or scissors	<ul style="list-style-type: none"> • Handle the razor and scissors carefully. • Dispose of used razor blades in a puncture-proof container. • Disinfect the razor and scissors after use. • Wash your hands before and after working on the client. • Wash off any blood immediately. • Wear gloves if you have cuts or sores. • If a client bleeds, hand the client a cotton ball to stop the bleeding. Have the client dispose of it.
Manicure or pedicure	Cutting client with cuticle clippers	<ul style="list-style-type: none"> • Handle the clippers carefully. • Disinfect the clippers after use. • Wash your hands before and after working on the client. • Wash off any blood immediately. • Wear gloves if you have cuts or sores. • If a client bleeds, hand the client a cotton ball to stop the bleeding. Have the client dispose of it.

(IV. GROUP EXERCISE, continued)

- **End the class.**

This concludes our class on HIV/AIDS and Hepatitis B. It is important to remember that most tasks done by technicians do *not* expose you to blood. Therefore the chance of getting exposed to HIV/AIDS and Hepatitis B in the workplace is very low. If you take the precautions that we have talked about today, you will protect yourself quite well against exposure.

Handout A

HIV/AIDS and Hepatitis B

QUICK SUMMARY

HIV/AIDS and Hepatitis B are serious diseases which are spread by contaminated blood. Barbers and cosmetologists have a very low risk of getting these diseases on the job. Still, it's important to know how to protect yourself, both in your personal life and at work.

What is AIDS?

AIDS stands for *Acquired Immune Deficiency Syndrome*. It is a disease that attacks the body's immune system, leaving it unable to fight off infections. AIDS is caused by the *Human Immunodeficiency Virus (HIV)*.

How is HIV/AIDS spread?

- Sexual contact with an infected person (vaginal, anal, or oral sex).
- Sharing drug needles and syringes with an infected person.
- From an infected mother to her baby during pregnancy, in childbirth, or through breast milk.
- You *cannot* get HIV/AIDS through casual contact with an infected person, through food, through sharing equipment at work, or when donating blood.

How can you tell if you are infected?

- You can get an HIV antibody test. Your blood will be tested to see if it has antibodies to the AIDS virus. If there are antibodies, you have been infected.
- You may not test positive right away. You usually produce antibodies within three months, but sometimes it takes up to six months.

(see next page)

- For more information about free testing and counseling, contact your doctor, local Public Health Department, an AIDS service organization, or your local Red Cross chapter. Or you can call the Northern California AIDS Hotline (no charge) at 1-800-FOR-AIDS, or the Southern California AIDS Hotline at 1-800-922-AIDS.

What is Hepatitis B?

Hepatitis B is one type of hepatitis. (Hepatitis A, another type, is covered in another class.)

Hepatitis B is caused by a virus that attacks and inflames the liver. The inflammation is called *acute* Hepatitis B. Symptoms include fever, fatigue, loss of appetite, nausea, vomiting, dark urine, abdominal pain, and jaundice (the eyes and skin turn yellow). Most people recover, but some people don't get better and the disease develops into *chronic* Hepatitis B. It can eventually lead to cirrhosis and liver cancer.

How is Hepatitis B spread?

The main ways are the same as for AIDS. (See above.)

How could you get exposed to HIV or Hepatitis B on the job?

There are *no* recorded cases of a barber or cosmetologist getting infected with the AIDS virus on the job.

However, there is a slight possibility that you could get exposed to one of these diseases on the job in these ways:

- Puncturing your skin with a tool or instrument that carries infected blood (razor, tweezers, or clippers).
- Blood from an infected person entering your body through an open wound, cut, sore, or skin rash.

(see next page)

Hepatitis B poses a much greater risk to technicians than HIV. Hepatitis B is a sturdier virus and can live outside the body for seven days. HIV dies outside the body in a few hours. Also, Hepatitis B is more concentrated in the blood of an infected person. A few drops of blood can contain up to 100 million particles of the Hepatitis B Virus, but only about 100 particles of HIV.

What should you do to protect yourself from HIV/AIDS and Hepatitis B at work?

- Follow the federal government's *Universal Precautions*. Treat *all* blood as if it is infected. Don't guess.
- Handle all sharp instruments carefully, and dispose of them in puncture-proof containers.
- Disinfect tools, equipment, and surfaces if they get blood on them.
- Disinfect all instruments after they are used on clients, even if you see no blood.
- To disinfect instruments, wash them in water with soap or detergent, then immerse for at least ten minutes in an EPA-registered disinfectant proven to kill bacteria, fungi, and viruses. (The label should tell you.)
- To disinfect electrical equipment after use on a client, also use a disinfectant registered with the EPA. Check the label.
- Wash your hands before and after contact with each client.
- If a client bleeds, hand the client a cotton ball to stop the bleeding. Have the client dispose of it rather than doing so yourself.
- Immediately wash off any blood that you get on your skin with soap and water.
- Wear latex gloves if you have cuts, sores, or dermatitis.

(see next page)

Does OSHA have regulations covering job exposure to blood?

Federal OSHA has new rules on *Occupational Exposure to Bloodborne Pathogens*. In California, Cal/OSHA has similar rules. (The Cal/OSHA rules are in Section 5193 of the California Code of Regulations, Title 8, General Industry Safety Orders.)

These rules are designed to protect workers against Hepatitis B, HIV/AIDS, and other diseases which are spread by blood. They cover all workers who “reasonably anticipate” contact with blood on the job. Most of those directly affected are healthcare and public safety workers, but the rules may also cover workers in many other types of jobs.

OSHA and Cal/OSHA consider job exposure to blood to mean someone’s blood getting into your body through skin contact; through mucous membranes (in your eyes, nose, or mouth); or through a sharp instrument. For you to be covered by the bloodborne disease rules, this exposure must occur while you are performing your job duties.

Because barbers and cosmetologists have some chance of blood exposure on the job, it is possible that they are covered by the new rules. It is the *employer’s* responsibility, not OSHA’s or Cal/OSHA’s, to determine if employees are covered. Employers can call the Cal/OSHA Consultation Service to ask whether the Bloodborne Pathogen rules apply to their workers.

Workers who feel that they are being exposed to blood and are not being properly protected have a right to file a Cal/OSHA complaint.

You can find phone numbers for the Cal/OSHA Consultation Service and for filing Cal/OSHA complaints in your local phone book. Check the “Government Pages” under “California, State of, Industrial Relations Department, Occupational Safety and Health.”

Remember that if you are a student or independent contractor, you are *not* covered by OSHA or Cal/OSHA at all.

(see next page)

What are the highlights of the OSHA and Cal/OSHA rules on bloodborne diseases?

Under these new rules, employers must:

- Develop a written **exposure control plan** that identifies *who* has exposure to blood and how to reduce the danger.
- Follow **Universal Precautions**. Everyone in the workplace must treat *all* blood as if it could be infected.
- Use **engineering controls** where feasible to isolate or remove the danger of exposure to blood. For example, puncture-proof boxes should be available to dispose of contaminated sharp instruments like razors.
- Train workers on proper **work practices** so they can perform their jobs in the safest way.
- Provide **personal protective equipment** whenever exposure to blood is likely. The equipment might include gloves and eye protection (like goggles).
- Use **good housekeeping practices** like a regular cleaning schedule and proper decontamination procedures for equipment.
- Give workers an opportunity to receive **free Hepatitis B vaccine** if they will have any possible exposure to blood.
- Set up a **hazard communication program** to notify workers when they are around possible blood hazards. For example, there should be special signs and labels.
- Give **information and training** to workers about the Cal/OSHA Bloodborne Pathogen rules, infectious bloodborne diseases in general, safe work practices, and what to do if exposed to blood on the job.
- Provide a **post-exposure medical evaluation** after any worker gets exposed to blood. This should include free and confidential medical testing, counseling, and follow-up.

As with all Cal/OSHA regulations, employers can be cited and fined if they don't follow these rules.

(see next page)

What should you do if you get stuck by a razor or other sharp instrument that might be contaminated with blood?

- Make your wound bleed immediately. (Bleeding helps get contamination out.)
- Wash your wound with soap and water.
- Report the incident to your supervisor or employer.
- Get medical treatment.

Cal/OSHA also requires your employer to give you free medical evaluation and follow-up after you have any blood exposure. This process should be confidential. The employer should send you to a medical professional who will:

- Investigate and document how the exposure occurred
- Identify the person to whose blood you were exposed
- Test that person for disease (with his or her consent)
- Test *you* (with your consent) to see if a Hepatitis B or HIV infection occurred
- Give you immediate treatment when needed, including the Hepatitis B vaccine or other medications
- Give you counseling
- Evaluate any illness you report in the future that might be related to the exposure.

Health and Safety Laws and Agencies/Part 1

OBJECTIVES

After completing this module, students will be able to:

- Describe the most important health and safety rights which workers have under the law.
- List several state and federal agencies that oversee health and safety in the shop.
- Explain the role of each agency.
- Identify the most important laws and regulations enforced by each agency.
- Explain how these agencies and laws protect technicians, and identify where there are gaps in protection.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	5 minutes	• Chalkboard or flipchart.
II. SMALL GROUP EXERCISE. How much do you know about health and safety laws and regulations? (Students work in pairs to answer "20 Questions.")	20 minutes	• Handout A: <i>Exercise—20 Questions.</i>
III. REPORT BACK AND DISCUSSION. How did students answer the "20 Questions?"	65 minutes	• Chalkboard or flipchart. • Handout B: <i>Quick Summary.</i>
Total Time: 1-1/2 Hours		

I. INTRODUCTION (5 minutes)

- **Explain objectives of this module to the class.**
(See OBJECTIVES on previous page.)

Today's class is about your health and safety rights. We will also look at the many agencies that regulate health and safety in the barbering and cosmetology professions.

This topic is complicated because technicians work in many different employment situations. They may be owners, employees, or independent contractors (self-employed technicians who rent their stations). Health and safety rights and regulations are different for each kind of employment.

Here are some important legal rights you have if you are an employee:

- Your workplace is required to be safe.
- You must be given information about the chemicals you work with, and training on how to work safely.
- You may file a complaint with Cal/OSHA (the agency that enforces workplace health and safety laws), and have your workplace inspected.

If you are a shop owner, you have a *responsibility* to keep the workplace safe and to give your employees information and training.

Laws and regulations can be important tools to use in solving health and safety problems. But, as you will see, there are some gaps in protection, areas where there are no laws or regulations whatsoever.

In our next class we will see how various laws and agencies can help solve some specific health and safety problems in the shop. But today, let's start at the beginning and look at legal rights and regulations, what they mean, and where they come from.

(I. INTRODUCTION, continued)

- **Ask the class:**

Can anyone give an example of an agency that regulates health and safety in the shop and salon?

- **List answers on the board as people suggest them.**

Possible answers are:

Cal/OSHA (California Occupational Safety and Health Administration)

OSHA (Occupational Safety and Health Administration)

FDA (Food and Drug Administration)

California State Board of Barbering and Cosmetology

II. SMALL GROUP EXERCISE (20 minutes)

- **Ask each student to pick a partner for this exercise. Students will work in pairs.**
- **Distribute Handout A: *Exercise—20 Questions*.**

Let's see how much you already know about health and safety laws and regulations. In this handout are 20 questions I'd like you to think about and answer. Some are multiple choice, and some are "True or False." You will work in pairs. Please pick a partner and take 20 minutes to answer as many questions as you can. Some questions may have more than one right answer.

Later we'll go over all the questions together. Be ready to give your answers and explain them. This is *not* a test, and you won't have to turn your answers in.

- **Students work in pairs on the questions for 20 minutes.**

III. REPORT BACK AND DISCUSSION (65 minutes)

- **Bring the whole class back together.**
- **Read the class the first question, and the list of possible answers.**
- **Ask the students which answer they chose, and why.**
- **Discuss the correct answer briefly, and add any points that have not been covered. (Answers and Discussion Points are below.)**
- **Proceed to the next question.**
- **Continue in the same way with the remaining questions.**

Answers and Discussion Points

1. Which agency is responsible for regulating cosmetic products, like those used in the shop and at home?

- _____ a. Food and Drug Administration (FDA)
- _____ b. Environmental Protection Agency (EPA)
- _____ c. Occupational Safety and Health Administration (OSHA)
- _____ d. California State Board of Barbering and Cosmetology

Answer: (a) The federal Food and Drug Administration (FDA).

(III. REPORT BACK AND DISCUSSION, continued)

2. The FDA makes sure that every cosmetic is safe before it is marketed. True or False?

Answer: False.

The FDA cannot force cosmetic manufacturers to prove that their products are safe before putting them on the market. If manufacturers have not conducted safety tests, they must simply put a warning label on the product that states "Warning: The Safety of This Product Has Not Been Determined."

Most products don't have this warning. Does this mean that products without this warning have all been tested? Probably not. The FDA does not have the power to check up on a manufacturer's claim that safety testing was done. The FDA has to take the manufacturer's word for it.

The FDA also does not routinely test products on its own. Of the hundreds of possibly harmful chemicals used in cosmetics, the FDA has conducted tests on only a small number. The FDA usually decides to test a product only after receiving consumer complaints. Therefore, it is very important that people using a product report problems not only to the manufacturer, but also directly to the FDA.

The FDA is primarily concerned with public and consumer safety, not worker safety. When safety testing is done by a manufacturer or the FDA, they are looking at whether or not the product is dangerous to consumers, not technicians. Of course, a chemical found to be hazardous to consumers will also be hazardous to people using it on their jobs. But a chemical found to be relatively safe for consumers may *not* be safe for technicians who use it over and over for long periods of time.

(III. REPORT BACK AND DISCUSSION, continued)

3. Once the FDA finds out that a product contains harmful chemicals, it can take steps to remove it from the market. True or False?

Answer: True.

The FDA *does* have the power to take action against a product if:

- it is *adulterated*, that is, it contains an ingredient that will harm users under normal conditions of use; or
- it is *misbranded*, that is, the label includes information that is false or misleading.

If the FDA decides that a cosmetic is either adulterated or misbranded, it can request that the manufacturer voluntarily take it off the market. In special cases, the FDA can ban the use of a substance that is proven to cause serious illness or disease, like cancer. For example, in 1976 the FDA banned the use of chloroform from cosmetics.

Unfortunately, steps like this are taken only *after* a product is sold and has caused harm. Since the FDA can't require the industry to prove products are safe before they are sold, it can't take steps to prevent consumer injuries or illnesses beforehand.

4. When an ingredient in some hair dyes, known as coal tar dye, was found to cause cancer, the FDA banned it. True or False?

Answer: False.

While the FDA *does* have the power to ban the use of hazardous chemicals, there is one exception to this rule: the *coal tar dye exemption*. When the FDA tried to ban coal tar dyes, the hair dye manufacturers strongly objected. Under this pressure from the industry, the FDA agreed not to ban the ingredient. Instead, it now

(III. REPORT BACK AND DISCUSSION, continued)

requires products with coal tar dye to have a label saying: "Caution—This product contains ingredients which may cause skin irritation on certain individuals and a preliminary test according to accompanying directions should first be made. This product must not be used for dyeing the eyelashes or eyebrows; to do so may cause blindness." Unfortunately, this label does not warn people that the product may also cause cancer.

5. The FDA requires that all products used in the shop be labeled with their ingredients. True or False?

Answer: False.

"Professional Use" products are not covered by the Fair Packaging and Labeling Act (FPLA). This law, enforced by the FDA, requires most cosmetics sold in retail establishments to contain a list of ingredients on their labels. But for "Professional Use" products sold for use only in salons, ingredient labels are not required. This exemption makes it very difficult for both technicians and consumers to know what is in those products.

6. Which agency is responsible for making sure that the workplace is safe?

- a. Food and Drug Administration (FDA)
- b. Environmental Protection Agency (EPA)
- c. Occupational Safety and Health Administration (OSHA)
- d. California State Board of Barbering and Cosmetology

Answer: (c) The Occupational Safety and Health Administration (OSHA).

In 1970, Congress passed the federal Occupational

(III. REPORT BACK AND DISCUSSION, continued)

Safety and Health Act. This law is designed to prevent worker injuries and illnesses caused by the job. It says that every employee has the right to work in a workplace free of health and safety hazards.

The Occupational Safety and Health Act set up the federal *Occupational Safety and Health Administration (OSHA)*. OSHA issues health and safety regulations, which are called *standards*. These require employers to:

- Limit worker exposure to certain chemicals
- Give workers health and safety training
- Have safety equipment, like respirators and ventilation systems, where necessary
- Reduce fire and electrical hazards
- Keep records of job-related injuries and illnesses
- Take many other steps to make the workplace safe.

States are allowed to run their own OSHA programs if they choose. However, the state standards must be at least as strong as the standards set nationwide by federal OSHA. California has its own *Cal/OSHA* which protects California workers. If employers do not follow Cal/OSHA standards that apply to them, they are breaking the law.

Workers with a health and safety question or complaint can call any Cal/OSHA office. Publications which explain the standards can also be obtained from Cal/OSHA offices. Cal/OSHA has many offices located throughout the state. For the phone number of your local office, check the "Government Pages" of your phone book under "California, State of, Industrial Relations Department, Occupational Safety and Health."

Cal/OSHA standards which apply to barbers, cosmetologists, and many other occupations are called *Gen-*

(III. REPORT BACK AND DISCUSSION, continued)

eral Industry Safety Orders, and are found in Title 8 of the California Code of Regulations. Many libraries have copies.

7. Cal/OSHA protects only factory workers. True or False?

Answer: False.

Cal/OSHA covers almost all workers in the state, no matter what job they do. There are a few exceptions, like people who work for the federal government. State and local government workers *are* covered.

8. Cal/OSHA covers independent contractors. True or False?

Answer: False.

Independent contractors (self-employed technicians who rent their stations) are *not* covered by Cal/OSHA because they are not considered “employees” as defined by the State Labor Code. However, determining whether a person is an employee or an independent contractor can be tricky.

Which category a person falls into usually depends on how much control he or she has over the work. Some factors to consider include: who assigns the work; who sets the hours; and who supplies the products and materials. If the salon owner has control over these matters, then the technician is probably considered an employee under the law. This is true even if there is signed contract indicating that he or she is an independent contractor. In a case like this, the technician is probably covered by Cal/OSHA.

If you want advice about whether Cal/OSHA would consider you an employee or an independent contractor, call Cal/OSHA and describe your situation.

(III. REPORT BACK AND DISCUSSION, continued)

9. Who is responsible for providing a safe and healthful workplace under state and federal law?

- a. The employer
- b. The technician
- c. OSHA and Cal/OSHA
- d. The union

Answer: (a) The employer.

The employer is legally responsible for providing a safe and healthful workplace. The employer must comply with all health and safety standards. Cal/OSHA can order the employer to correct hazardous conditions, and can fine the employer for not following the standards.

10. How can a worker make a Cal/OSHA complaint? (Check all that apply.)

- a. By calling any Cal/OSHA office
- b. By writing a letter to Cal/OSHA
- c. By filling out and sending in a Cal/OSHA complaint form
- d. By calling the publisher of your favorite trade magazine

Answer: (a), (b), and (c).

All three are ways to file a Cal/OSHA complaint.

When you see what you believe is an unsafe condition at work, you can complain to Cal/OSHA. Call your local Cal/OSHA office and ask to be sent a complaint form. In most cases, it's best to use the complaint form. Make

(III. REPORT BACK AND DISCUSSION, continued)

telephone complaints only when someone faces an immediate danger of serious injury or harm.

When filling out the complaint form, be specific and detailed. Describe the specific task, equipment, or chemicals you are concerned about. Even if you don't know whether a Cal/OSHA standard or regulation is actually being violated, you still have the right to make a complaint.

You should sign the complaint form, but Cal/OSHA won't give out your name to anyone if you ask them not to.

After receiving your complaint, Cal/OSHA will send an inspector to your workplace without giving advance notice to the employer. You (or someone you'd like to represent you, like a union rep) are allowed to go around with the inspector and point out hazards.

If a violation is found, Cal/OSHA may give the employer a citation or fine. A citation orders the employer to fix some unsafe condition, and sets a time limit for solving the problem. The citation must be posted in the workplace.

After the inspection, the employee who filed the complaint has the right to receive a copy of the inspector's findings and information about any citations or fines the employer received. The employer has the right to appeal citations and fines.

11. Shop owners or employers can ask Cal/OSHA to help solve health and safety problems. True or False?

Answer: True.

Cal/OSHA has a program called the Cal/OSHA Consultation Service. It provides free consultation to employers on how to identify and correct hazardous

(III. REPORT BACK AND DISCUSSION, continued)

conditions. This service is separate from the Cal/OSHA Compliance Unit which investigates complaints and cites and fines employers. Therefore, employers can ask the Cal/OSHA Consultation Service for assistance without fear of being cited or fined.

12. Cal/OSHA does not cover ventilation systems in shops and salons. True or False?

Answer: False.

There are two Cal/OSHA ventilation standards that apply to salons. These are Sections 5142 and 5143 of the California Code of Regulations, Title 8, General Industry Safety Orders. They set minimum requirements for ventilation systems.

Section 5142 requires that heating, ventilating, and air conditioning systems always be *turned on* during working hours, except when they are being repaired. Ventilation systems should be inspected by the employer at least once a year, and any problems should be fixed within a reasonable time. Records of these inspections should be in writing and available to any employee who requests them.

Section 5143 covers some of the design requirements for ventilation systems. For example, it says that the exhaust part of the system (the part that takes air out of the room) should be designed to reduce worker exposure to hazardous substances in the air. In other words, the system should pull hazardous vapors and dusts *away* from your work area.

13. Workers can't be fired, disciplined, or laid off because they made a health and safety complaint. True or False?

Answer: True.

(III. REPORT BACK AND DISCUSSION, continued)

Under both federal and California health and safety laws, you cannot be fired or punished for filing a complaint about job hazards. If you believe that you were punished for using your rights, you can file a discrimination complaint with the California Department of Industrial Relations' Division of Labor Standards Enforcement (State Labor Commissioner).

The State Labor Commissioner will investigate and may take the employer to court. If the court finds that the employer discriminated against you for exercising your legal rights, your discipline will be overturned. If you were fired, you may be rehired with back pay and benefits. (This protection against discrimination is guaranteed by Section 6310 of the California Labor Code.)

14. You have the right to know what chemicals are in the products you use, and their possible health effects. True or False?

Answer: True.

Cal/OSHA has a standard on *Hazard Communication* (Section 5194 of the California Code of Regulations, Title 8, General Industry Safety Orders). It gives you the right to information about workplace chemicals and their health effects. It also gives you the right to be trained to handle workplace chemicals safely. It's often called the "Right to Know" Standard.

Under this standard the employer must give workers information in several ways:

- **Material Safety Data Sheets (MSDSs)**

These are information sheets that manufacturers of chemical products (including barbering and cosmetology products) must fill out. For each product, the MSDS must include:

- Manufacturer's name, address, and telephone number

(III. REPORT BACK AND DISCUSSION, continued)

- Names of the chemicals in the product
- Legal limits which have been set for employee exposure to each chemical
- Short and long-term health effects
- Symptoms of exposure
- Whether the product is flammable or can explode
- Safety procedures for working with the product
- Emergency procedures (for spills, etc.).

Another class in this curriculum covers MSDSs in more detail.

Manufacturers or suppliers are required to send an MSDS whenever they ship a product to a customer for the first time. Employers are required to make sure that they have an MSDS on file for every product they use. These information sheets must be made available for workers to see and copy on request.

Many MSDSs are inaccurate, outdated, or incomplete. You cannot rely on them to give you all the information you need about a particular product. They can be used as a first step to learning about chemical hazards, but only a first step. Once you have found out the chemical ingredients in a product from the MSDS you can get more information about the chemicals from Cal/OSHA, a library, or other health and safety resource groups. A list of groups will be distributed at another class. (**Module 16.**)

- **Training**

The employer must provide workers with training about the hazardous chemicals in the workplace. Training should include:

(III. REPORT BACK AND DISCUSSION, continued)

- How to read an MSDS
- Possible health hazards of the chemicals used in the workplace
- How to use specific chemicals safely and protect yourself from their hazards
- Retraining when you begin to use a new hazardous chemical.

- **Labeling**

Most hazardous chemical products must be clearly labeled with their name, their ingredients, and a warning about their possible health and safety risks. However, since cosmetic products are regulated by the Food and Drug Administration, cosmetics are not covered by this Cal/OSHA labeling requirement. Remember, the FDA requires labeling of only some cosmetic products, not those intended for "Professional Use" only. (See *Question 5.*)

Still, all the other provisions of the Cal/OSHA Hazard Communication standard *do* apply to cosmetic products. MSDSs must be available, and training must be given.

15. By law, the employer must provide workers with which of these types of information, upon request? (Check all that apply.)

- a. Records of work-related injuries and illnesses
- b. Results of tests done to monitor chemicals in the workplace
- c. Information on the personal lives of co-workers
- d. Copies of their own employee medical records

(III. REPORT BACK AND DISCUSSION, continued)

Answer: (a), (b), and (d).

- (a) If you work in a shop with more than ten employees, Cal/OSHA requires your employer to keep a written record of all work-related injuries and illnesses. This record is called the *Log 200*. You have the right to see and copy all *Log 200*s for the past five years. Also, a summary of the information on the *Log 200* must be posted in the workplace every February for the entire month. It must be in a place where everyone can see it.

(These requirements are found in Sections 14300-14400 of the California Code of Regulations, Title 8.)

Shops with ten or fewer employees are not required to keep a *Log*.

- (b) Your employer must allow you to see and copy any workplace monitoring records, which include:
- Tests the employer has done to measure the amount of chemicals in the air
 - Medical tests the employer has given to see how much of a toxic chemical has been absorbed into your body.

You also have the right to observe these tests when they are done.

(These requirements are found in Section 3204 of the California Code of Regulations, Title 8, General Industry Safety Orders.)

- (d) Your employer must allow you to see and copy your own company medical records, which include:
- Information from medical questionnaires or histories conducted by your employer

(III. REPORT BACK AND DISCUSSION, continued)

- Results of medical examinations conducted or requested by your employer
- Any medical opinion or diagnosis
- Information on medical treatment.

(These requirements are found in Section 3204 of the California Code of Regulations, Title 8, General Industry Safety Orders.)

16. California employers must have a written plan for preventing worker injuries and illnesses. True or False?

Answer: True.

Since 1991, Cal/OSHA has required every California employer to have an effective Injury and Illness Prevention Program. It must be in writing and available to workers. (This requirement is in Section 3203 of the California Code of Regulations, Title 8, General Industry Safety Orders.)

Employers must:

- Identify who is responsible for health and safety in the workplace
- Set up a system to communicate with all workers about health and safety
- Identify and evaluate all workplace hazards, using such methods as regular inspections
- Find methods to correct unsafe work practices and conditions
- Provide health and safety training using language workers can understand
- Set up a process to investigate accidents and illnesses

(III. REPORT BACK AND DISCUSSION, continued)

- Encourage workers to report hazards on the job without fear of firing or discrimination.

17. If you're an independent contractor and not covered by Cal/OSHA, there is nothing you can do to protect your health and safety on the job. True or False?

Answer: False.

If you're an independent contractor, you're considered "self employed" and can't rely on an employer or Cal/OSHA to protect you. But there's a lot you *can* do to protect your own health. You should find out what chemicals are in the products you work with by getting Material Safety Data Sheets (MSDSs) from the manufacturers. You can also draw up a plan for protecting yourself from health and safety hazards. If there are several independent contractors in your salon, you can work together to develop an Injury and Illness Prevention Program (like the one described above) that will protect everyone.

Injury and Illness Prevention Programs are a good idea for independent contractors, but they aren't legally required as they are for owners and employers.

18. The California State Board of Barbering and Cosmetology's main responsibility is to protect the worker. True or False?

Answer: False.

As we saw earlier, Cal/OSHA is responsible for ensuring workplace health and safety. The California State Board of Barbering and Cosmetology primarily protects the *consumers* who use your professional services. To do that, the Board has set standards for each service. For example, it requires that all equipment be disinfected. The Board examination tests your ability to meet these standards and to perform services without harming the client.

(III. REPORT BACK AND DISCUSSION, continued)

However, the Board also sees the need for you to learn about the dangers *you* may face when using chemicals on clients. At the request of the Board, California law now requires that the Board examination include questions about hazardous substances used on your job. In the end, both you and the client are better protected from the harmful effects of chemicals.

19. An employer can legally make the shop smoke free. True or False?

Answer: True.

Except in rare situations (for example, a labor contract that prohibits smoking restrictions), an employer *can* make the shop smoke free. There is no law that prohibits an employer from setting this type of smoking policy. People don't have a constitutional right to smoke.

Even if the employer is not interested in establishing a workplace smoking policy, a policy may be required by local law. In California, a growing number of cities and counties have passed local ordinances to restrict smoking in the workplace. To date, over 250 cities have such restrictions. Employers should contact the local health department to find out if there is an ordinance and how to be sure they are following the law.

If an employer needs assistance in developing and implementing a smoke free workplace policy, s/he should contact the local American Lung Association office.

20. Barbers and cosmetologists have more fun. True or False?

Answer: True.

Particularly if they work in a safe and healthy workplace!

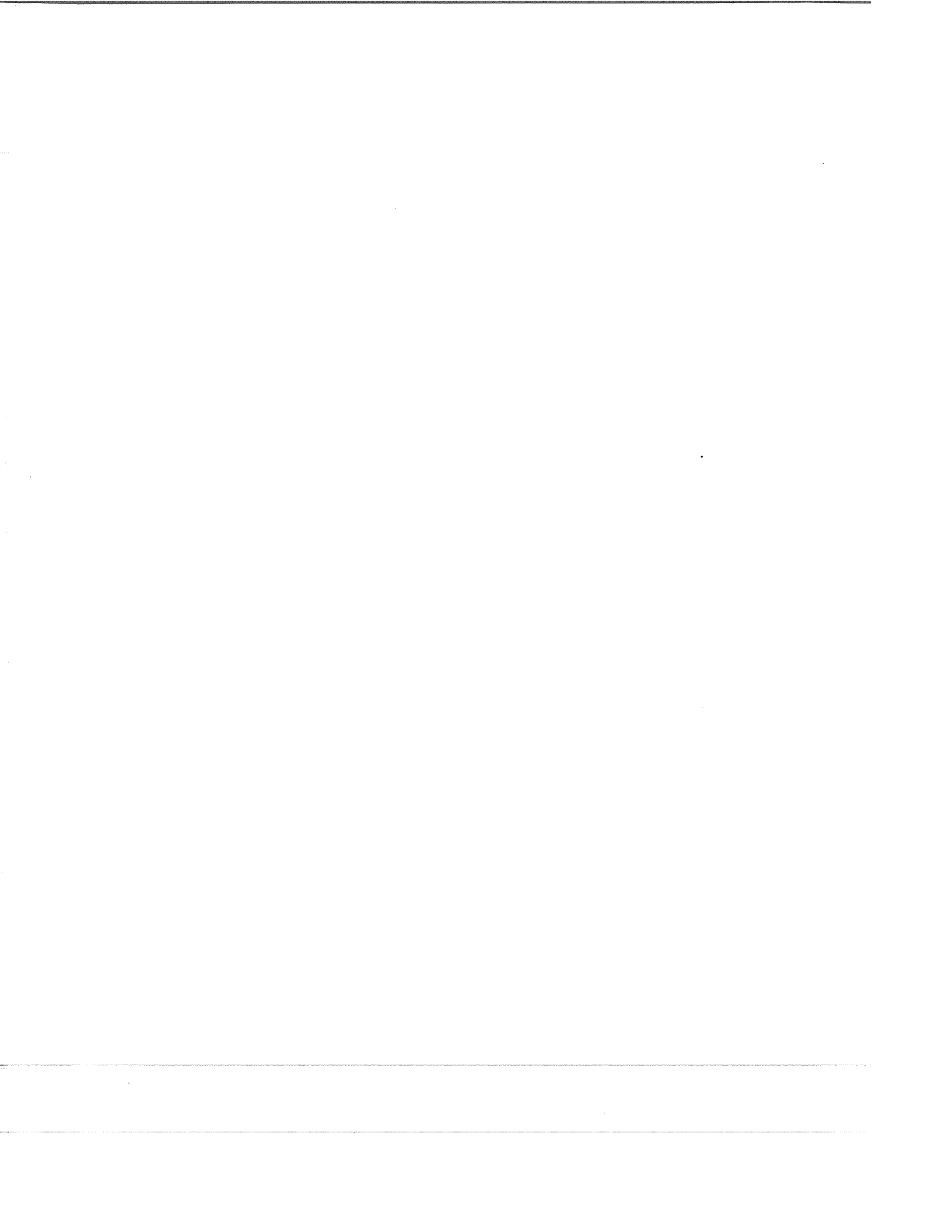
(III. REPORT BACK AND DISCUSSION, continued)

- **Distribute Handout B: *Quick Summary*.**

I am passing out a summary of today's lesson. Please take it home to read in more detail later on, and keep it as a permanent reference.

- **End the class.**

In our second session on Health and Safety Laws and Agencies, we will discuss how to use laws and regulatory agencies to solve specific health and safety problems that could occur in a typical shop.



Handout A
Health and Safety Laws and Agencies/Part 1

EXERCISE—20 QUESTIONS

1. Which agency is responsible for regulating cosmetic products, like those used in the shop and at home?
 - ___ a. Food and Drug Administration (FDA)
 - ___ b. Environmental Protection Agency (EPA)
 - ___ c. Occupational Safety and Health Administration (OSHA)
 - ___ d. California State Board of Barbering and Cosmetology

2. The FDA makes sure that every cosmetic is safe before it is marketed. True or False?

3. Once the FDA finds out that a product contains harmful chemicals, it can take steps to remove it from the market. True or False?

4. When an ingredient in some hair dyes, known as coal tar dye, was found to cause cancer, the FDA banned it. True or False?

5. The FDA requires that all products used in the shop be labeled with their ingredients. True or False?

(see next page)

6. Which agency is responsible for making sure that the workplace is safe?

- a. Food and Drug Administration (FDA)
- b. Environmental Protection Agency (EPA)
- c. Occupational Safety and Health Administration (OSHA)
- d. California State Board of Barbering and Cosmetology

7. Cal/OSHA protects only factory workers. True or False?

8. Cal/OSHA covers independent contractors. True or False?

9. Who is responsible for providing a safe and healthful workplace under state and federal law?

- a. The employer
- b. The technician
- c. OSHA and Cal/OSHA
- d. The union

10. How can a worker make a Cal/OSHA complaint? (Check all that apply.)

- a. By calling any Cal/OSHA office
- b. By writing a letter to Cal/OSHA
- c. By filling out and sending in a Cal/OSHA complaint form
- d. By calling the publisher of your favorite trade magazine

(see next page)

11. Shop owners or employers can ask Cal/OSHA to help solve health and safety problems. True or False?

12. Cal/OSHA does not cover ventilation systems in shops and salons. True or False?

13. Workers can't be fired, disciplined, or laid off because they made a health and safety complaint. True or False?

14. You have the right to know what chemicals are in the products you use, and their possible health effects. True or False?

15. By law, the employer must provide workers with which of these types of information, upon request? (Check all that apply.)
 - a. Records of work-related injuries and illnesses
 - b. Results of tests done to monitor chemicals in the workplace
 - c. Information on the personal lives of co-workers
 - d. Copies of their own employee medical records

16. California employers must have a written plan for preventing worker injuries and illnesses. True or False?

17. If you're an independent contractor and not covered by Cal/OSHA, there is nothing you can do to protect your health and safety on the job. True or False?

(see next page)

18. The California State Board of Barbering and Cosmetology's main responsibility is to protect the worker. True or False?

19. An employer can legally make the shop smoke free. True or False?

20. Barbers and cosmetologists have more fun. True or False?

Handout B Health and Safety Laws and Agencies/Part 1

QUICK SUMMARY

(This *Quick Summary* covers both Module 12 and Module 13.)

Food and Drug Administration (FDA)

The federal Food and Drug Administration (FDA) regulates cosmetic products, including many used by barbers and cosmetologists. However, the FDA has certain limits:

- It does not routinely test products on its own. It usually tests only after receiving many consumer complaints.
- Its tests focus on the risk to consumers, not workers. Workers face different risks because they may use products over and over for long periods of time.

When a product is found to be harmful, the FDA can take steps to remove it from the market if:

- It is *adulterated*—it contains an ingredient that will harm users, or
- It is *misbranded*—the label has false or misleading information.

The FDA usually asks the manufacturer to recall such a product voluntarily. But if it is found to cause serious illness or disease, like cancer, the FDA can ban it. Although coal tar dye, used in some hair colorings, was found to cause cancer, the industry objected when the FDA tried to ban it. Instead, products with coal tar dye are only required to have a warning label, which doesn't even mention cancer.

The FDA requires cosmetics sold at retail to have a list of ingredients on their labels. However, "Professional Use" products sold for use only in salons are not covered by this requirement.

(see next page)

Occupational Safety and Health Administration (OSHA and Cal/OSHA)

The federal Occupational Safety and Health Administration (OSHA) requires all employers to provide a safe and healthful workplace. It issues regulations, called *standards*, that require employers to take specific steps to prevent job-related injuries and illnesses. If employers don't follow the standards that apply to them, they are breaking the law.

States can run their own OSHA programs if they are at least as effective as federal OSHA. California has its own *Cal/OSHA* to protect workers.

- **Who is covered?**

Cal/OSHA covers almost all California workers. It doesn't cover people who work for the federal government and a few others. You are *not* covered if you are defined as an independent contractor. Check with Cal/OSHA if you're not sure.

- **Filing a complaint**

If you're covered by Cal/OSHA, you can make a complaint about unsafe conditions at work. Call your local Cal/OSHA office and ask them to send you a complaint form. If someone faces an immediate danger of serious injury, you can make your complaint over the phone.

Fill out the form, being as specific and detailed as possible. Even if you aren't sure a standard is being violated, you can still make a complaint. You should sign the form, but Cal/OSHA won't give out your name to anyone if you ask them not to.

After receiving your complaint, Cal/OSHA will send an inspector to your workplace without advance warning. You (or someone you'd like to represent you) can go around with the inspector and point out hazards.

If a violation is found, Cal/OSHA can cite or fine your employer. The citation must be posted in the workplace.

(see next page)

After the inspection, the employee who filed the complaint can get a copy of the inspector's findings upon request. The employer has a right to appeal citations and fines.

- **Cal/OSHA Regulations**

There are some important Cal/OSHA rules that apply to shops and salons. Except where noted, they are found in the California Code of Regulations, Title 8, General Industry Safety Orders (GISO).

- ▼ **Ventilation**

- Heating, ventilating, and air conditioning systems must always be turned on during working hours. Systems should be inspected by the employer at least once a year, and problems fixed within a reasonable time. Any worker may see inspection records upon request. (*GISO Section 5142.*)
- Ventilation systems should be designed so they pull hazardous dusts and vapors away from your work area. (*GISO Section 5143.*)

- ▼ **Anti-discrimination**

The law protects you from being fired or disciplined for filing a complaint about job hazards. (*California Labor Code, Section 6310.*)

- ▼ **Access to Information**

Many Cal/OSHA regulations give employees the right to get important health and safety information:

- **Hazard Communication (“Right to Know”)**

Under this standard, you have the right to know what chemicals are in the products you use, and their possible health effects. The standard requires employers to have chemical information sheets called Material Safety Data Sheets (MSDSs) for nearly every product used in the workplace. Your employer should give you training on how to

(see next page)

read MSDSs, the possible health hazards of chemicals you use, and how to protect yourself. (*GISO Section 5194.*)

— **Log 200**

Cal/OSHA requires all employers with more than ten employees to keep a written record of all work-related injuries and illnesses, called the *Log 200*. Any worker can see and copy the Log upon request. A summary of the Log must be posted in the workplace every February. (*Title 8, Sections 14300-14400.*)

— **Workplace Monitoring**

Your employer must allow you to see the results of any tests done to measure the amount of chemicals in the air or the amount absorbed into your body. You also have the right to observe the tests when they are done. (*GISO Section 3204 and others.*)

— **Company Medical Records**

You have a right to see any of your own medical records which the employer keeps, like medical questionnaires or test results. (*GISO Section 3204.*)

▼ **Injury and Illness Prevention Programs**

Every California employer is required to have an effective injury and illness prevention program. The employer must:

- Identify who is responsible for health and safety
- Set up a system to communicate with all workers about health and safety
- Identify and evaluate all workplace hazards
- Find methods to correct unsafe work practices and conditions
- Provide health and safety training using language workers can understand
- Set up a process to investigate accidents and illnesses

(see next page)

— Encourage workers to report hazards on the job without fear of firing or discrimination.

(GISO Section 3203.)

- **Cal/OSHA Consultation**

Cal/OSHA has a Consultation Service which provides free advice to employers on how to identify and correct hazardous conditions. Employers can ask for help without fear of being cited or fined.

California State Board of Barbering and Cosmetology

The California State Board of Barbering and Cosmetology primarily protects the consumer. It sets standards for all barbering and cosmetology services. For example, these include the requirement that all equipment be disinfected.

The Board also sees the need for you to learn about dangers *you* may face when using chemicals at work. It now tests students on hazardous substances used in cosmetology. In the end, both you and the client are better protected from the harmful effects of chemicals.

Health and Safety Laws and Agencies/Part 2

OBJECTIVES

After completing this module, students will be able to:

- Identify at least five health and safety laws and regulations that apply to barbers and cosmetologists.
- Use these laws, and the agencies that enforce them, to solve specific health and safety problems at work.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	5 minutes	
II. SMALL GROUP EXERCISE: CASE STUDIES. Which laws and agencies could help you solve some "real life" problems at work?	25 minutes	<ul style="list-style-type: none">• Handout A: <i>Quick Summary.</i>• Handout B: <i>Case Studies.</i>
III. REPORT BACK AND DISCUSSION. How did students solve the problems presented in the Case Studies?	30 minutes	<ul style="list-style-type: none">• Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION (5 minutes)

- **Explain objectives of this module to the class.**
(See OBJECTIVES on previous page.)

In our previous session on Health and Safety Laws and Agencies, we learned about the many laws and agencies that regulate health and safety in your workplace. Today, we'll see how these laws and agencies can help you tackle some "real life" health and safety problems at work. As you will see, correcting health and safety problems can require many different strategies.

Often the laws and regulations are limited, or they have gaps or loopholes. Calling Cal/OSHA or the FDA is not always the best solution to a health and safety problem. In fact, as we discussed in the last class, self-employed technicians (independent contractors) are usually not even covered by Cal/OSHA. However, in spite of these problems, the law does provide some very important protection. It can be an important tool for you to use in making sure that your workplace is safe.

II. SMALL GROUP EXERCISE: CASE STUDIES (25 minutes)

- **Distribute Handout A: *Quick Summary*.**
- **Distribute Handout B: *Case Studies*.**

The eight Case Studies in **Handout B** present some situations that could actually occur at a shop or salon. I would like you to work in small groups to discuss each situation and figure out which laws and agencies could help you solve the problem. Though there may be many solutions to these problems, think specifically about how laws, regulations, and agencies can help. In a future class we will look at other actions you can take to solve problems like these.

For help in answering the questions, your group can refer to **Handout A: *Quick Summary***, which I have also just passed out. (This is the same handout you were given at our previous class on Health and Safety Laws and Agencies.)

Each small group should pick someone to be the recorder. The recorder will take notes on your discussion and report your group's answers to the entire class later on.

You will have approximately 25 minutes. This is *not* a test, and you won't have to turn your answers in.

- **Break the class into small groups, with no more than 5 people in each group.**
- **Make sure that each group chooses a recorder.**
- **Give the groups 25 minutes to work.**

III. REPORT BACK AND DISCUSSION (30 minutes)

- **Bring the whole class back together.**
- **Read the class the first Case Study (Handout B) and the question(s) following it.**
- **Ask the recorder from one small group to explain how that group addressed the problem.**
- **Ask the other groups to comment on this solution, and to explain their own approach, if different.**
- **Discuss the correct answer briefly, and add any points that have not been covered. (Answers and Discussion Points are below.)**
- **Proceed to the next Case Study. Call on a different group's recorder to give an answer.**
- **Continue in the same way with the remaining Case Studies.**

Case Studies—Answers and Discussion Points

CASE STUDY #1 (See Handout B)

You're concerned that the other technicians are not disinfecting their instruments properly.

(a) Which agency could you turn to for help? What can that agency do?

The California State Board of Barbering and Cosmetology. (916) 445-7061.

Disinfection is *required* by Board regulations. If people are unaware of proper disinfecting techniques, you can

(III. REPORT BACK AND DISCUSSION, continued)

call the Board and ask them to send you a copy of these regulations. The regulations are also required to be posted in the shop. They say that the owner and the technicians are *all* responsible for making sure proper disinfection occurs.

If you share this information with your co-workers and the owner, but there is still a problem, you can call the Board's Enforcement Unit to file a complaint. The Enforcement Unit gives priority to complaints where the client has been harmed. It will respond to your complaint more quickly if you can include the name, address, and phone number of someone who has been harmed as a direct result of the lack of disinfection. (You may even want to get the person who was harmed to file a complaint.) But even if no harm has occurred to a consumer, the Board will have an inspector visit the shop and check on the complaint.

CASE STUDY #2 (See Handout B)

You think that a particular cosmetic product used in your shop might be causing skin irritation among clients and co-workers. You wonder if consumers have ever reported problems with the product.

(a) Which agency could you contact for this information? How can that agency help you?

The federal Food and Drug Administration (FDA).

The FDA is responsible for regulating cosmetics and salon products. While they don't routinely test products for safety, they do take consumer complaints and keep records of them. The FDA can tell you whether they have received complaints about the particular product you are investigating.

It is also important to tell the FDA what problems *you* have experienced using that product. If they receive a

(III. REPORT BACK AND DISCUSSION, continued)

lot of complaints about a particular product, they may decide to conduct safety tests.

You should also see whether your shop has a Material Safety Data Sheet (MSDS) on file for the product you're concerned about. The MSDS should have information on ingredients and health effects.

CASE STUDY #3 (See Handout B)

You have been working in a large salon for several years. Recently you've developed asthma and wonder if it could be related to something you're doing at work. You want to find out if any other employees in that salon have had similar problems in the past.

(a) Under the law, what record can you get that might give you this information?

The Cal/OSHA Log 200.

If you work in a large salon with more than ten employees, Cal/OSHA requires your employer to keep a record of all work-related injuries and illnesses. This record is called the *Log 200*. You have the right to see this Log any time you ask for it. A summary of the information on the Log must be posted every February. By looking at the Log 200, you can find out if any of your co-workers have reported asthma or other illnesses. You have the right to see Log 200s for the last five years.

Unfortunately, many employers are not aware of this law and may not be keeping a Log. Or the Log may be incomplete because many employees don't know that they should report all work-related injuries and illnesses. It's possible that some employees don't report their symptoms because they don't realize their problem is work-related.

(III. REPORT BACK AND DISCUSSION, continued)

Employers with ten or fewer employees are not required to keep a Log.

(b) What is another way you could find out?

If your employer doesn't keep a Log, there are some other ways to get the information. You can talk to your co-workers to see if they have ever had similar symptoms. You might even want to conduct a written survey. We will discuss surveys in another class.

CASE STUDY #4 (See Handout B)

You want to find out about the possible health effects of a new brand of hairspray you have recently begun using at work.

(a) An MSDS for this product should be available in your workplace. What is an MSDS? What will it tell you?

Under the Cal/OSHA Hazard Communication standard, your employer is required to obtain an information sheet from the supplier or manufacturer of every chemical product used in the workplace. These are called Material Safety Data Sheets (MSDSs). Your employer must make them available for you to see and copy on request.

Each MSDS should list the ingredients in the product and give the concentration (amount) of each ingredient which is considered hazardous. The MSDS should also describe the short and long-term health effects and symptoms of overexposure. It should explain how to work with the product safely, how to protect yourself, and emergency procedures to follow in case of a spill or accident. This information can help answer your question.

(III. REPORT BACK AND DISCUSSION, continued)

Unfortunately, many employers have not obtained MSDSs. And even if they have, the MSDS information is often incomplete. MSDSs may not contain enough information on long-term health effects, focusing instead on short-term safety issues, such as whether or not the product is flammable.

(b) *If you can't get enough information from the MSDS, what else can you do?*

Look up the ingredients in a chemical reference book.

Because MSDSs may be incomplete or hard to understand, it's a good idea to use the MSDSs only as a starting point. At least, you should be able to get the chemical names of the product's ingredients from the MSDS. With that information, you can do further research on these chemicals yourself. Most libraries have reference books which will tell you about the health effects of particular chemicals.

You can also contact health and safety resource groups which offer information and advice. A list of groups will be distributed at another class. **(Module 16.)**

CASE STUDY #5 (See Handout B)

You have asked for a Material Safety Data Sheet (MSDS). Your employer has it, but refuses to give it to you.

(a) *What regulation covers this problem?*

The Cal/OSHA Hazard Communication standard requires your employer to give you a Material Safety Data Sheet when you ask for it.

(III. REPORT BACK AND DISCUSSION, continued)

(b) How can you get your employer to give you the MSDS?

Let your employer know that, by law, you should be given the MSDS when you ask for it. In many cases, employers don't know their legal responsibilities.

(c) Which agency could you turn to for help?

Cal/OSHA.

If your employer has the MSDS but refuses to give it to you, you can file a complaint with Cal/OSHA. Call or write Cal/OSHA to request a complaint form. Check the "Government Pages" of your phone book for the nearest Cal/OSHA office. Look under "California, State of, Industrial Relations Department, Occupational Safety and Health."

When filling out the complaint form, be as specific and detailed as possible. You should sign the form, but if you request to remain anonymous, Cal/OSHA is not allowed to tell anyone your name.

Cal/OSHA will send an inspector to your workplace. The inspector can direct your employer to give you the MSDS. The inspector may also check the workplace to make sure other health and safety regulations are being followed.

In some cases, the employer has requested an MSDS, but the supplier or manufacturer has not provided one. In this case you or your employer can contact Cal/OSHA for help.

CASE STUDY #6 (See Handout B)

You don't think the ventilation system in your shop has been working for the past few months.

(III. REPORT BACK AND DISCUSSION, continued)

(a) Which Cal/OSHA standards cover this problem?

There are two Cal/OSHA ventilation standards that apply. These are Sections 5142 and 5143 of California Code of Regulations, Title 8, General Industry Safety Orders. They set minimum requirements for ventilation systems.

(b) What do these standards say?

Under Section 5142, if the shop has heating, ventilating, and air conditioning systems, they must always be turned on during working hours, except when they are being repaired. The employer must inspect the systems at least once a year, and must fix any problems within a reasonable time. There must be a written record of these inspections and repairs, which should be available to all employees.

Section 5143 covers some of the design requirements for ventilation systems. For example, it says that the exhaust part of the system (the part that takes air out of the room) should be designed to reduce your exposure to hazardous substances in the air. In other words, the system should pull hazardous vapors and dusts *away* from you and your client.

Section 5142 has some requirements that specifically apply to your problem. It says that a ventilation system must be in working order and kept in good condition. If the system is not working, the employer is breaking the law. Your health may be at risk. If your employer refuses to fix the system, you can file a complaint with Cal/OSHA as explained earlier.

CASE STUDY #7 (See Handout B)

You want information on your employer's plan for preventing health and safety problems.

(III. REPORT BACK AND DISCUSSION, continued)

(a) Under the law, where can you get this information?

Ask to see your employer's written plan for preventing injuries and illnesses on the job.

A new Cal/OSHA standard requires all employers in California to have an Injury and Illness Prevention Program. This program must be in writing and available to all employees.

(b) What does your employer's plan have to include?

Your employer must:

- Identify who is responsible for health and safety in the workplace
- Set up a system to communicate with all workers about health and safety
- Identify and evaluate all workplace hazards, using such methods as regular inspections
- Find methods to correct unsafe work practices and conditions
- Provide health and safety training using language workers can understand
- Set up a process to investigate accidents and illnesses
- Encourage workers to report hazards on the job without fear of firing or discrimination.

The employer's written plan should explain how it will do all these things.

Asking to see the plan is only a first step. You might also want to know how the plan is actually working. Are hazards being identified and corrected? Is there a train-

(III. REPORT BACK AND DISCUSSION, continued)

ing program? Employees should “watchdog” the employer’s Illness and Injury Prevention Program.

Cal/OSHA encourages employers to set up employee/management health and safety committees to help oversee these programs. These committees can review the results of workplace inspections and accident investigations, check up on any health and safety complaints, and suggest solutions.

Whether or not you have a health and safety committee, make sure that the employer’s Injury and Illness Prevention Program is more than just words on paper. It should actually help prevent injuries and illnesses.

CASE STUDY #8 (See Handout B)

You are a salon owner, and you want to provide your employees with the safest and healthiest work environment you can. However, you are not sure how to improve working conditions and comply with Cal/OSHA standards.

(a) Which agency can you turn to for help? What help can you get there?

The Cal/OSHA Consultation Service.

This office provides free advice to employers on how to identify and correct hazards. Employers can call Cal/OSHA Consultation without fear that they will be cited or fined, since this service is completely separate from the unit that investigates complaints, enforces standards, and issues citations.

(III. REPORT BACK AND DISCUSSION, continued)

- **End the class.**

This wraps up our series of two classes on Health and Safety Laws and Agencies. We have seen how to use the law to solve problems in the shop. As we discussed, the law has limitations and is not always the best way to solve problems. Later classes will help you find some other ways to make your workplace safe.

Handout A Health and Safety Laws and Agencies/Part 2

QUICK SUMMARY

(This *Quick Summary* covers both Module 12 and Module 13.)

Food and Drug Administration (FDA)

The federal Food and Drug Administration (FDA) regulates cosmetic products, including many used by barbers and cosmetologists. However, the FDA has certain limits:

- It does not routinely test products on its own. It usually tests only after receiving many consumer complaints.
- Its tests focus on the risk to consumers, not workers. Workers face different risks because they may use products over and over for long periods of time.

When a product is found to be harmful, the FDA can take steps to remove it from the market if:

- It is *adulterated*—it contains an ingredient that will harm users, or
- It is *misbranded*—the label has false or misleading information.

The FDA usually asks the manufacturer to recall such a product voluntarily. But if it is found to cause serious illness or disease, like cancer, the FDA can ban it. Although coal tar dye, used in some hair colorings, was found to cause cancer, the industry objected when the FDA tried to ban it. Instead, products with coal tar dye are only required to have a warning label, which doesn't even mention cancer.

The FDA requires cosmetics sold at retail to have a list of ingredients on their labels. However, "Professional Use" products sold for use only in salons are not covered by this requirement.

(see next page)

Occupational Safety and Health Administration (OSHA and Cal/OSHA)

The federal Occupational Safety and Health Administration (OSHA) requires all employers to provide a safe and healthful workplace. It issues regulations, called *standards*, that require employers to take specific steps to prevent job-related injuries and illnesses. If employers don't follow the standards that apply to them, they are breaking the law.

States can run their own OSHA programs if they are at least as effective as federal OSHA. California has its own *Cal/OSHA* to protect workers.

- **Who is covered?**

Cal/OSHA covers almost all California workers. It doesn't cover people who work for the federal government and a few others. You are *not* covered if you are defined as an independent contractor. Check with Cal/OSHA if you're not sure.

- **Filing a complaint**

If you're covered by Cal/OSHA, you can make a complaint about unsafe conditions at work. Call your local Cal/OSHA office and ask them to send you a complaint form. If someone faces an immediate danger of serious injury, you can make your complaint over the phone.

Fill out the form, being as specific and detailed as possible. Even if you aren't sure a standard is being violated, you can still make a complaint. You should sign the form, but Cal/OSHA won't give out your name to anyone if you ask them not to.

After receiving your complaint, Cal/OSHA will send an inspector to your workplace without advance warning. You (or someone you'd like to represent you) can go around with the inspector and point out hazards.

If a violation is found, Cal/OSHA can cite or fine your employer. The citation must be posted in the workplace.

(see next page)

After the inspection, the employee who filed the complaint can get a copy of the inspector's findings upon request. The employer has a right to appeal citations and fines.

- **Cal/OSHA Regulations**

There are some important Cal/OSHA rules that apply to shops and salons. Except where noted, they are found in the California Code of Regulations, Title 8, General Industry Safety Orders (GISO).

- ▼ **Ventilation**

- Heating, ventilating, and air conditioning systems must always be turned on during working hours. Systems should be inspected by the employer at least once a year, and problems fixed within a reasonable time. Any worker may see inspection records upon request. (*GISO Section 5142.*)
- Ventilation systems should be designed so they pull hazardous dusts and vapors away from your work area. (*GISO Section 5143.*)

- ▼ **Anti-discrimination**

The law protects you from being fired or disciplined for filing a complaint about job hazards. (*California Labor Code, Section 6310.*)

- ▼ **Access to Information**

Many Cal/OSHA regulations give employees the right to get important health and safety information:

- **Hazard Communication (“Right to Know”)**

Under this standard, you have the right to know what chemicals are in the products you use, and their possible health effects. The standard requires employers to have chemical information sheets called Material Safety Data Sheets (MSDSs) for nearly every product used in the workplace. Your employer should give you training on how to

(see next page)

read MSDSs, the possible health hazards of chemicals you use, and how to protect yourself. (*GISO Section 5194.*)

— **Log 200**

Cal/OSHA requires all employers with more than ten employees to keep a written record of all work-related injuries and illnesses, called the *Log 200*. Any worker can see and copy the Log upon request. A summary of the Log must be posted in the workplace every February. (*Title 8, Sections 14300-14400.*)

— **Workplace Monitoring**

Your employer must allow you to see the results of any tests done to measure the amount of chemicals in the air or the amount absorbed into your body. You also have the right to observe the tests when they are done. (*GISO Section 3204 and others.*)

— **Company Medical Records**

You have a right to see any of your own medical records which the employer keeps, like medical questionnaires or test results. (*GISO Section 3204.*)

▼ **Injury and Illness Prevention Programs**

Every California employer is required to have an effective injury and illness prevention program. The employer must:

- Identify who is responsible for health and safety
- Set up a system to communicate with all workers about health and safety
- Identify and evaluate all workplace hazards
- Find methods to correct unsafe work practices and conditions
- Provide health and safety training using language workers can understand
- Set up a process to investigate accidents and illnesses

(see next page)

— Encourage workers to report hazards on the job without fear of firing or discrimination.

(GISO Section 3203.)

- **Cal/OSHA Consultation**

Cal/OSHA has a Consultation Service which provides free advice to employers on how to identify and correct hazardous conditions. Employers can ask for help without fear of being cited or fined.

California State Board of Barbering and Cosmetology

The California State Board of Barbering and Cosmetology primarily protects the consumer. It sets standards for all barbering and cosmetology services. For example, these include the requirement that all equipment be disinfected.

The Board also sees the need for you to learn about dangers *you* may face when using chemicals at work. It now tests students on hazardous substances used in cosmetology. In the end, both you and the client are better protected from the harmful effects of chemicals.

Handout B Health and Safety Laws and Agencies/Part 2

CASE STUDIES

1. You're concerned that the other technicians are not disinfecting their instruments properly.
 - (a) Which agency could you turn to for help? What can that agency do?

2. You think that a particular cosmetic product used in your shop might be causing skin irritation among clients and co-workers. You wonder if consumers have ever reported problems with the product.
 - (a) Which agency could you contact for this information? How can that agency help you?

3. You have been working in a large salon for several years. Recently you've developed asthma and wonder if it could be related to something you're doing at work. You want to find out if any other employees in that salon have had similar problems in the past.
 - (a) Under the law, what record can you get that might give you this information?

(see next page)

- (b) What is another way you could find out?
4. You want to find out about the possible health effects of a new brand of hairspray you have recently begun using at work.
- (a) An MSDS for this product should be available in your workplace. What is an MSDS? What will it tell you?
- (b) If you can't get enough information from the MSDS, what else can you do?
5. You have asked for a Material Safety Data Sheet (MSDS). Your employer has it, but refuses to give it to you.
- (a) What regulation covers this problem?

(see next page)

(b) How can you get your employer to give you the MSDS?

(c) Which agency could you turn to for help?

6. You don't think the ventilation system in your shop has been working for the past few months.

(a) Which Cal/OSHA standards cover this problem?

(b) What do these standards say?

(see next page)

7. You want information on your employer's plan for preventing health and safety problems.

(a) Under the law, where can you get this information?

(b) What does your employer's plan have to include?

8. You are a salon owner, and you want to provide your employees with the safest and healthiest work environment you can. However, you are not sure how to improve working conditions and comply with Cal/OSHA standards.

(a) Which agency can you turn to for help? What help can you get there?

Investigating Your Workplace

OBJECTIVES

After completing this module, students will be able to:

- Describe how to use health surveys and workplace inspections to investigate health and safety hazards.
- Demonstrate how to conduct a “walkaround” inspection of the workplace.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	5 minutes	
II. LECTURE AND DISCUSSION. How can you use a health survey or workplace inspection to discover possible hazards in your workplace?	15 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart. • Handout A: <i>Health Survey</i>.
III. SMALL GROUP EXERCISE. What hazards can you find in a typical shop or salon? (Students work in pairs to do an inspection, using a checklist.)	20 minutes	<ul style="list-style-type: none"> • School's clinic area with typical equipment. • Handout B: <i>Workplace Inspection Checklist</i>.
IV. REPORT BACK AND DISCUSSION. What hazards did students discover during the inspection?	20 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION (5 minutes)

- **Explain objectives of this module to the class.**
(See OBJECTIVES on previous page.)

Today you're going to be a kind of detective. You'll learn about two methods you can use to discover possible health and safety problems in the workplace.

The first method is the health survey. With a health survey, you can find out what symptoms and health complaints you and your co-workers have that might be related to the job. Then, the main part of today's class will be spent on the second method—conducting your own workplace inspection. For practice, you will actually inspect your school's clinic area to look for health and safety hazards. You will be given a checklist to use during this inspection.

II. LECTURE AND DISCUSSION (15 minutes)

- **Ask the class the following questions, and ask for volunteers to answer.**
- **Conduct a brief discussion of each question.**
- **Discussion points directly follow each question.**

1. What are some ways to get information about hazards on your job?

In previous classes we discussed several different ways to get information about chemicals and other health and safety hazards on your job. For example, we saw that:

- You can use Material Safety Data Sheets (MSDSs) to find out about the chemicals you work with.
- You can request injury and illness records from your employer to learn what problems you and your co-workers have had.
- When your employer tests for chemicals in the air at work, employees have the right to know the results. You can use them to find out how much chemical exposure you've had.

Today we'll look for information in some new ways. We'll see what we can find out about workers' health by using a health survey, and what we can find out about a typical workplace by doing our own health and safety inspection of the school's clinic area.

- **Distribute Handout A: Health Survey.**

(II. LECTURE AND DISCUSSION, continued)

2. What can you find out with a health survey?

The first method we'll talk about is the health survey. When you want to learn more about the hazards on your job, the survey is an important part of your detective work.

You can use a survey form (like the one you've just been given) to collect information about health problems or symptoms that you and your co-workers may have. Some of these problems might be related to work. The survey can sometimes give you clues about what's causing them.

Take a moment to look over the form that's been passed out. A health survey is usually a questionnaire which asks people to answer specific questions about their health. You can use a survey to find out about one particular problem or to get an overview of all the health problems that people have. The **Health Survey** that's been handed out is very thorough, and you might want to use a shorter version in your own workplace. Many different types of health surveys have been developed by unions, employers, and health and safety groups.

When you do a survey, it's best if *everyone* in the workplace fills out a copy of the questionnaire. The more complete the information, the better is the chance you can figure out the reasons for any problems that show up.

3. What should you do with the results of a health survey?

The survey results can help identify the hazards that exist in your workplace. For example, on the survey, do manicurists report frequent sneezing, coughing, or sore throats? Could chemicals in nail products be the cause? Are people getting skin rashes which seem to be related to the chemicals they use? Has anyone developed allergies which might come from breathing

(II. LECTURE AND DISCUSSION, continued)

chemical vapors? Does anyone seem to have problems with tobacco smoke in the workplace?

See if people who do the same work report the same problems. For example, are many technicians who do perms getting skin rashes on their hands? If many people have the same symptoms, it's probably not an individual problem. It could be related to something they all have in common—their work.

Also, see if people say their symptoms are worse at work, and clear up when they go home. Or maybe the symptoms are worse when they do certain tasks at work. These can be further clues that the problem is job-related.

4. How can you use survey results to make the job safer?

After you conduct a health survey, you need a follow-up plan. First, make sure that you go over the results of the survey with each technician who filled out the form. If people are told what problems were found, they may be able to take steps to protect themselves.

Next, decide on a strategy for action. Will you go to your employer with the problems that you found? Will you form a health and safety committee to deal with the hazards in your workplace? Will you call Cal/OSHA? Whichever approach you choose, try to get as many co-workers as possible to join in.

We won't have time today to fill out the **Health Survey** form that you have been given. Please take it home and look it over.

5. How can you do your own inspection of the workplace?

Another important part of your detective work is the workplace inspection. You can conduct your own in-

(II. LECTURE AND DISCUSSION, continued)

spection to identify health and safety hazards. This is sometimes called a *walkaround* inspection, since you walk around the workplace and look at different work areas. It's a good idea to use a checklist during this inspection to remind you about possible hazards to look for.

It is best to do your inspection at a time when people are actually working. That way you can see what hazards there are when work is going on and typical equipment, tools, and materials are in use.

In addition to filling out the checklist, take notes during the inspection to help you remember details. You might even take some photos. You want to get as much information as you can. It may also be helpful to draw a diagram of the different work processes, and maps showing the locations of possible hazards.

It can be extremely useful to talk to co-workers as you do the inspection. They may be able to tell you about other problems that are not covered on your checklist.

III. SMALL GROUP EXERCISE (20 minutes)

- **Ask each student to pick a partner for this exercise. Students will work in pairs.**
- **Do this exercise in your school's clinic area.**
- **Distribute Handout B: *Workplace Inspection Checklist*.**
- **Explain the exercise.**

In this exercise, you will do a health and safety inspection of your school's clinic area. As you do the inspection, you should complete the ***Workplace Inspection Checklist*** that you have just received. You'll do the inspection in pairs, so please pick a partner.

You have 20 minutes to conduct your "walkaround" inspection of the school shop. This is *not* a test, and you won't have to turn your answers in. You will discuss your findings with the class after the inspection.

The checklist has seven sections which deal with different types of hazards. Try to spend some time on every section during your inspection, even though you may not answer every question in some of the sections. Some questions may not apply to this school. For other questions, you may decide there's no way to find an answer quickly, and you'll have to skip the question for now. Do as much as you can.

In addition to the seven sections of questions on the checklist, there's an eighth section where you can list any hazards or problems you find that don't fit anywhere else.

- **Students work in pairs on the inspection for 20 minutes.**

IV. REPORT BACK AND DISCUSSION (20 minutes)

- **Bring the whole class back together.**
- **Ask several students to identify the most serious hazard they found in the first section of the survey, and how they would correct that hazard.**
- **As each student answers, discuss the answer briefly with the class. Add any points that have not been covered.**
- **Proceed to the next section of the survey.**
- **Continue in the same way with the remaining sections.**
- **End the class.**

This concludes our class on Investigating Your Workplace. We've seen how you can use health surveys and workplace inspections as part of your detective work to discover health and safety problems. In another class, we'll see what you can do to *solve* the problems you have found.

Handout A Investigating Your Workplace

HEALTH SURVEY

1. Background Information

Age _____ Female _____ Male _____

Occupation _____

How long have you worked in that occupation? _____

How long have you worked on your present job? _____

Job description _____

2. Musculoskeletal System

Do you often get any of the following?

(Check all that apply)

_____ Back ache

_____ Shoulder ache

_____ Neck pain

_____ Arm pain

_____ Wrist pain

_____ Tendinitis

When does the problem occur?

(At work? After work? When you do a particular task?)

(see next page)

Do you often get any of the following?

(Check all that apply)

- Arthritis
- Bursitis
- Numbness of fingers
- Pain in hand or fingers
- Leg pain
- Foot pain
- Foot calluses

When does the problem occur?

(At work? After work? When you do a particular task?)

3. Respiratory Tract

Do you often get any of the following?

(Check all that apply)

- Colds
- Sore throat
- Coughing
- Sneezing
- Wheezing
- Running nose
- Stuffy nose
- Chest pain
- Chest tightness
- Trouble breathing

When does the problem occur?

(At work? After work? When you do a particular task?)

(see next page)

4. Eyes

Do you often get any of the following?

(Check all that apply)

_____ Itchiness

_____ Pain

_____ Redness

_____ Watering

_____ Blurred vision

_____ Other vision problems

_____ Tired feeling

When does the problem occur?

(At work? After work? When you do a particular task?)

5. Skin

Do you often get any of the following?

(Check all that apply)

_____ Rash

_____ Dermatitis (dry, flaking skin)

_____ Chemical burn

_____ Itchiness

_____ Cuts

When does the problem occur?

(At work? After work? When you do a particular task?)

(see next page)

6. Reproductive System

Have you or your partner had any of the following?

(Check all that apply)

_____ Problems trying to get pregnant

_____ Miscarriages

_____ Children with birth defects

_____ Menstrual problems

7. Allergies

Yes No Explain

Do you have any allergies?

Are they worse at work?

When did you first get them?

8. Other Symptoms

Do you often get any of the following?

(Check all that apply)

When does the problem occur?

(At work? After work? When you do a particular task?)

_____ Headache

_____ Stomach ache

_____ Dizziness

_____ Muscle cramp

_____ Chills

_____ Fever

_____ Feeling hot or cold

(see next page)

9. Serious Illnesses

Have you ever had any of the following?

_____ Cancer

_____ Other serious illness

_____ Heart disease

Describe: _____

_____ Immune disorder

_____ Lung disease

10. Job Injuries

Yes **No** **Explain**

Have you ever had an injury on the job?

Did you lose time from work?

Do you always report injuries to the employer?

11. Co-workers' Health

Yes **No** **Explain**

Have your co-workers complained of health problems that might be related to work?

(see next page)

12. Your Comments

Is there anything else you want to say about your health and your job?

Handout B Investigating Your Workplace

WORKPLACE INSPECTION CHECKLIST

(Adapted from the Cal/OSHA Guide To Developing Your Workplace Injury and Illness Prevention Program, 1990.)

1. Posting

Yes No

- Are emergency telephone numbers posted where they can be found quickly if needed?
- Are there clear signs marking exits from the building?
- Is the employer's Summary of Occupational Injuries and Illness (Cal/OSHA Log 200) posted during the month of February?
- Is a written list of proper, safe work practices for all tasks done in the shop either posted or circulated to employees?
- Are the California State Board of Barbering and Cosmetology's Health and Safety Regulations posted in the reception area?

2. Fire Protection

Yes No

- Does the shop have a fire prevention plan?
- Does the shop have a plan to *fight* fires and to *evacuate* in an emergency?
- Does everyone understand these plans?
- Are there fire drills?
- Are all exits kept free of obstructions?

(see next page)

Yes **No**

- Are there enough exits to permit everyone to escape promptly?
- Are there enough fire extinguishers in convenient locations?
- Are the correct fire extinguishers available for the types of materials that could catch on fire?

Note: The common types are:

Class A: Ordinary combustible materials.

Class B: Flammable liquid, gas, or grease.

Class C: Electrical equipment.

Class ABC: All-purpose.

- Are employees trained in the use of fire extinguishers?
- Are flammable and combustible chemicals (like hairspray) kept away from flames, sparks, and hot objects?
- Is smoking prohibited around flammable and combustible chemicals?
- Are there enough outlets for all the electrical equipment, so the system isn't overloaded?

3. General Environment

Yes **No**

- Is the workplace kept clean and orderly?
- Are floors and work surfaces kept clean and dry?
- Are spilled liquids cleaned up immediately?
- Is there enough space to work, or is the work area small and cramped?

(see next page)

Yes No

- Is the indoor temperature comfortable?
- Is there adequate lighting?
- Are electrical appliances, such as stationary hair dryers, grounded (using a three-way plug) to prevent shocks?
- Are electrical equipment and cords kept in good condition so they won't cause a shock or fire?
- Are hot or sharp objects kept out of the way so people won't accidentally touch them?
- Is the shop free of tripping hazards like stools, equipment, cords, or wires?
- Is the shop free of earthquake hazards, like shelves or cabinets that could fall over?
- Are workers under stress because of workload, overtime, or other pressure?

4. Ventilation

Yes No

- Is there enough fresh air in the workplace?
- Is there a ventilation system?
- Is a vented table used for manicures?
- Are all ventilation systems working?
- Have the ventilation systems been inspected in the past year?
- Are repairs on the ventilation systems done promptly?

5. Hazardous Chemicals

Yes No

- Is there a Material Safety Data Sheet (MSDS) readily available for each chemical product used in the shop?

(see next page)

Yes No

- Is there an employee training program on chemical hazards?
- Has the air in the shop ever been tested for chemicals?
- If yes, were the amounts found considered safe?
- Do any of the hair dryers contain asbestos?
- Are chemicals stored and mixed away from eating areas?
- Are chemicals mixed in an area separate from the main work area?
- Are chemical bottles and containers closed securely when not in use?
- Are chemical containers kept out of the way so people won't accidentally knock them over?
- Are chemicals stored in a cool, dry, well-ventilated place?
- Are incompatible chemicals stored away from each other?
- Are chemicals disposed of properly (for most chemicals, not down the drain)?
- Do people avoid eating, drinking, and smoking around chemicals?

6. Protective and Safety Equipment

Yes No

- Are safety glasses provided to protect eyes from nail clippings?
- Are splash goggles available to protect eyes during chemical mixing?
- Are there eye wash stations in case chemicals get into someone's eyes?

(see next page)

Yes No

___ ___ Are dust masks available to manicurists, so they won't breathe dust when filing nails?

___ ___ Are protective gloves of the right type available to anyone who handles chemicals (like permanent wave solutions, hair coloring chemicals, etc.)?

___ ___ Are aprons and long-sleeve lab coats available to protect people's clothing and arms from chemicals?

___ ___ Are masks and gloves available to protect technicians from diseases like flu, TB, and cold sores?

___ ___ Are there enough well-stocked first aid kits in the shop?

___ ___ Do workers know CPR?

7. Ergonomic Hazards

Yes No

___ ___ Are cushioned mats available for technicians to stand on while working on clients?

___ ___ Are client chairs adjustable so workers have easy access to the client?

___ ___ Does the shop have a good selection of shears and combs in different sizes so they "fit" each worker?

___ ___ Are all the shears kept sharp?

___ ___ Are portable carts available so workers can keep their tools with them, and avoid reaching?

___ ___ Are stools and rolling seats available, so technicians can sit while they work?

___ ___ Have workers been trained in proper bending, reaching, and lifting techniques?

(see next page)

8. Other Observations

Use this space to list any other problems or hazards you find during the inspection.

Solving Health and Safety Problems/Part 1

OBJECTIVES

After completing this module, students will be able to:

- Choose the most important hazards to correct in a typical workplace.
- Explain why they chose those particular hazards.
- Develop an “action plan” to correct the hazards.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	10 minutes	• Chalkboard or flipchart.
II. SMALL GROUP EXERCISE. How can you decide which job hazards are most important to correct? How do you draw up an “action plan” to correct them?	25 minutes	• Handout A: <i>Kool Kuts—Health Survey Results.</i> • Handout B: <i>Kool Kuts—Inspection Results.</i> • Handout C: <i>Kool Kuts—Action Plan Questions.</i>
III. REPORT BACK AND DISCUSSION. Which hazards did students choose to work on first? Why? What “action plans” did they create?	25 minutes	• Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION (10 minutes)

- **Explain objectives of this module to the class. (See OBJECTIVES on previous page.)**

Today we are going to learn how to develop an “action plan” to correct health and safety hazards in the work-place.

An action plan should include these steps:

Action Plan

- **Identify the hazards.**
- **Choose which problems to work on first.**
- **Get more information about the hazards.**
- **Figure out short-term and long-term goals.**
- **Involve your co-workers.**
- **Document the problems.**
- **Find out what steps have already been taken.**
- **Decide how to get changes made.**
- **Set a time limit for fixing the problems.**
- **Determine what obstacles there are to solving the problems.**
- **Find ways to overcome the obstacles.**

- **Write this list on the chalkboard so students can refer to it throughout today’s class.**

(I. INTRODUCTION, continued)

The first step is to **identify the hazards**. How can you find out what they are? In one of our past classes, we learned about two ways to find hazards: conducting a health survey among your co-workers, and doing your own workplace inspection. In that class, you had a chance to look over a typical health survey form which asked workers about their symptoms. You also did an inspection of the clinic area at your school, and noted on a checklist the hazards you found.

The second step in an action plan is to **choose which problems to work on first**. When you look for hazards in your workplace, you're likely to find many problems that should be fixed. You can't tackle everything at once. You need to set priorities. Some hazards may be very important, others not so important.

- **Ask the class:**

What factors should you consider when choosing a problem to work on?

- **List students' responses on the chalkboard. Compare them to the list below, and discuss them.**

There are several things you should consider. Try to choose a problem which:

- people care about the most, or
- everyone agrees is important, or
- affects the most people, or
- causes the most serious hazard(s), or
- is fairly easy and inexpensive to solve.

(I. INTRODUCTION, continued)

The next step is to **get more information about the hazards**. As we have seen in other classes, you can get information by reading Material Safety Data Sheets (MSDSs), using the library, and asking health and safety resource groups for help.

The next step is to **figure out short-term and long-term goals**. Sometimes the best solutions to a problem aren't possible right away. They may require major changes in the workplace, or they may be too expensive. You may need to separate your solutions into short-term goals and long-term goals. Maybe you could fix the problem temporarily, and then fix it permanently later.

Next, **involve your co-workers**. It's always easier to solve problems when you work as a group. Also remember that solving one or two problems may get people enthusiastic and excited. Then it may be easier to get their help in solving other problems later.

These are just a few of the steps in an action plan. There's a more complete list of steps on the board, and we'll leave it there throughout today's class. You'll learn more about action plans as we do the exercise and try to solve some "real life" problems at an imaginary salon called "Kool Kuts."

II. SMALL GROUP EXERCISE (25 minutes)

- **Distribute Handout A: *Kool Kuts—Health Survey Results.***
- **Distribute Handout B: *Kool Kuts—Inspection Results.***
- **Distribute Handout C: *Kool Kuts—Action Plan Questions.***

In this exercise, you will work in small groups to answer some questions. Let's assume that some technicians at a full-service salon did a health survey of their co-workers and a workplace inspection to find out what the problems were there. We'll call the salon "Kool Kuts." **Handout A** has the results of their health survey, and **Handout B** has the results of their inspection. Use these as your sources of information for this exercise.

Handout C has the questions your group should discuss and try to answer. As you answer them, you'll find that you are coming up with an action plan to fix the hazards. Each group should agree on just *one* action plan. You will have 25 minutes. This is *not* a test, and you won't have to turn your answers in.

Each small group should pick someone to be the recorder. The recorder will take notes on your discussion and report your group's answers to the entire class later on.

- **Break the class into small groups, with no more than 5 people in each group.**
- **Make sure that each group chooses a recorder.**
- **Give the groups 25 minutes to work.**

III. REPORT BACK AND DISCUSSION (25 minutes)

- **Bring the whole class back together.**
- **Read the class the first question in Handout C.**
- **Ask the recorder from one small group to explain how they answered the question.**
- **Ask the other groups to comment on this answer, and to explain their own approach if different.**
- **Add any points that have not been covered. (Suggested Answers and Discussion Points are below.)**
- **Proceed to the next question. Call on a different group's recorder to give an answer.**
- **Continue in the same way with the remaining questions.**

Suggested Answers and Discussion Points

1. ***Based on the health survey and workplace inspection results, which two hazards would you choose to work on first?***

At "Kool Kuts," the big problems seem to be:

Hazard #1: Poor ventilation, no air circulation.

Hazard #2: No gloves to use when handling chemicals.

2. ***Why did you choose those two particular hazards?***

Hazard #1: Poor ventilation.

- According to the health survey, most people have

(III. REPORT BACK AND DISCUSSION, continued)

health problems which could be related to breathing in hazardous chemicals. (7 out of 8 have headaches; 6 out of 8 have shortness of breath or breathing difficulty.)

- The inspection found that there is no ventilation system, and there is often a chemical smell in the air.
- Exposure to hazardous chemicals in the air, and poor air quality, are very serious health hazards.

Hazard #2: No gloves.

- According to the health survey, many people (5 out of 8) have skin problems. These could be related to contact with chemicals.
- The inspection found that no protective gloves are available.
- Gloves are inexpensive and easy to get.

3. *How could you get more information about those hazards?*

For both Hazard #1 and Hazard #2:

- Check the labels on products often used in the workplace. Look for lists of ingredients and any hazard warnings.
- Read the MSDSs for the products. For Hazard #1 (poor ventilation) check to see whether any of the products causes health problems when breathed in. Does the MSDS recommend ventilation? For Hazard #2 (no gloves), check for any warnings about skin contact. Does the MSDS recommend gloves? What kind of gloves are recommended?
- Consult libraries and resource groups for additional information on the products.

(III. REPORT BACK AND DISCUSSION, continued)

4. What changes would you need to make to correct the two hazards that you chose? For each of the two hazards, what would be your short-term goals? What would be your long-term goals?

Hazard #1: Poor ventilation.

Short-term goals:

- For immediate results, open windows and doors to improve air circulation.
- If possible, stagger the times when chemical processes are done to reduce chemicals in the air. (For example, don't do a lot of perms, hair straightening, manicures, and hair tinting all at the same time in the same area.)

Long-term goals:

- Install a good ventilation system.
- Install a vented manicure table.
- Find chemicals to use which are not so hazardous when breathed in.

Hazard #2: No gloves.

Short-term goals:

- Purchase protective gloves for people to use when they work with chemical products.

Long-term goals:

- Find chemicals to use which are not so irritating to the skin.

(III. REPORT BACK AND DISCUSSION, continued)

5. Now that you have decided on your goals, list what you would do to get the two hazards corrected. What would you do first? Whom would you talk to? What would you say? What would you do next?

For both Hazard #1 and Hazard #2:

Remember the steps in an action plan, as listed on the board. For both Hazard #1 and Hazard #2, after you have figured out your short and long-term goals, you should:

- **Involve your co-workers** at “Kool Kuts.” Find out what they think about the hazards, tell them what you have found out, and get their support. You’ll be more effective if you work as a group.
- **Document the problems** you found. Get all your records together: health survey results, inspection results, and information on products used in the shop. The owner may be able to help you gather some of this information.
- **Find out what steps have already been taken.** Ask the owner if anything is being done to correct the hazards.
- **Decide how to get changes made.** With your co-workers, decide what needs to be done, and how to make it happen. Try to get everyone to agree on the plan. That way, everyone will be committed to it.
- **Set a time limit.** Include a schedule in your plan, showing when you want different hazards to be corrected.

Once you have completed these steps, you may want to present your plan to a meeting of the whole staff, including the owner.

(III. REPORT BACK AND DISCUSSION, continued)

- **End the class.**

In the next class on Solving Health and Safety Problems, we will continue working on our action plan for "Kool Kuts." Next time we'll work on the last two steps. We'll **determine what obstacles there are to solving the problems, and find ways to overcome the obstacles.**

Handout A Solving Health and Safety Problems/Part 1

KOOL KUTS—HEALTH SURVEY RESULTS

Several technicians at a salon called “Kool Kuts” decided to do a survey of their co-workers. They wanted to find out what health problems people were having, so they could figure out if these symptoms might be related to the job. The results of their survey are below.

1. Number of people completing the survey: 8
 - 1 owner
 - 5 cosmetologists
 - 1 manicurist
 - 1 receptionist

2. Health problems that people said they had:
 - 7 reported regular headaches
 - 6 reported some shortness of breath or breathing difficulty
 - 5 reported rashes or other skin problems
 - 4 reported allergies
 - 3 reported shoulder or back pain

Handout B Solving Health and Safety Problems/Part 1

KOOL KUTS—INSPECTION RESULTS

These are the results of a health and safety inspection which several technicians did at “Kool Kuts.” The most important problems they found are listed below.

1. Posting

- Emergency telephone numbers are not posted.

2. Fire Protection

- There has never been a fire drill.
- There is only one fire extinguisher, located way in the back of the work area.

3. General Environment

- Large, heavy containers are stored on high shelves.
- The technicians are stressed out because there is a new owner who does not communicate very well with the staff.

4. Ventilation

- There is poor air circulation in the workplace. It gets hot and stuffy. The air has a chemical smell.
- There are no vented manicure tables.
- “Kool Kuts” is in an old building with no ventilation system.

(see next page)

5. Hazardous Chemicals

- No Material Safety Data Sheets (MSDSs) are available.
- Chemicals are mixed and stored in the same room where workers eat lunch.

6. Protective and Safety Equipment

- No protective gloves are available for people to use when working with chemicals.
- No safety glasses or goggles are available to use when mixing chemicals.

7. Ergonomic Hazards

- There are no cushioned mats for workers to stand on.

Handout C

Solving Health and Safety Problems/Part 1

KOOL KUTS—ACTION PLAN QUESTIONS

Look at **Handout A** and **Handout B** to get clues about the hazards at “Kool Kuts.” Now it’s time to come up with an action plan to correct the hazards. Work with the other students in your small group to answer these questions.

As you answer the questions, you’ll be developing an action plan. Your whole group should come up with *one* action plan.

1. Based on the health survey and workplace inspection results, which two hazards would you choose to work on first?

Hazard #1:

Hazard #2:

2. Why did you choose those two particular hazards?

Hazard #1:

Hazard #2:

(see next page)

3. How could you get more information about those hazards?

Hazard #1:

Hazard #2:

4. What changes would you need to make to correct the two hazards that you chose? For each of the two hazards, what would be your short-term goals? What would be your long-term goals?

Hazard #1: Short-term goals:

Long-term goals:

(see next page)

Hazard #2:

Short-term goals:

Long-term goals:

5. Now that you have decided on your goals, list what you would do to get the two hazards corrected. What would you do first? Whom would you talk to? What would you say? What would you do next?

Hazard #1:

Hazard #2:

Solving Health and Safety Problems/Part 2

OBJECTIVES

After completing this module, students will be able to:

- Identify possible obstacles to solving health and safety problems at work.
- Develop a strategy to overcome those obstacles.
- Identify resource groups and organizations that might help.

OVERVIEW

ACTIVITY	TIME	MATERIALS NEEDED
I. INTRODUCTION.	5 minutes	
II. SMALL GROUP EXERCISE: CASE STUDY. What obstacles could you face when you try to solve health and safety problems at work?	25 minutes	<ul style="list-style-type: none"> • Handout A: <i>Kool Kuts — Case Study.</i> • Handout B: <i>Resource Agencies and Materials.</i>
III. REPORT BACK AND DISCUSSION. How did students solve the problems presented in the Case Study?	30 minutes	<ul style="list-style-type: none"> • Chalkboard or flipchart.
Total Time: 1 Hour		

I. INTRODUCTION (5 minutes)

- **Explain objectives of this module to the class.**
(See OBJECTIVES on previous page.)

In today's class you will work in small groups on a Case Study. This exercise is about the obstacles you may run into when you try to improve health and safety conditions at work. In our previous class on Solving Health and Safety Problems, we learned how to create an "action plan" to solve problems. But you'll often find that when you try to follow your action plan, you run into some roadblocks.

The Case Study describes a situation you might actually face on the job. Once again, we'll be looking at a salon called "Kool Kuts." Different obstacles will come up as you try to get hazardous conditions corrected. Your task is to figure out what to do about them.

II. SMALL GROUP EXERCISE: CASE STUDY (25 minutes)

- **Distribute Handout A: *Kool Kuts—Case Study*.**
- **Distribute Handout B: *Resource Agencies and Materials*.**

Handout A is the Case Study you're going to work on today. In small groups, you will discuss the problem presented and try to answer the questions. You may want to use **Handout B** in answering some of the questions. It lists some resource groups and agencies you might be able to call on for help. You will have 25 minutes. This is *not* a test, and you won't have to turn your answers in.

Each small group should pick someone to be the recorder. The recorder will take notes on your discussion and report your group's answers to the entire class later on.

Keep in mind that there are many different ways to approach these questions, and there are no "right" answers. Be creative.

- **Break the class into small groups, with no more than 5 people in each group.**
- **Make sure that each group chooses a recorder.**
- **Give the groups 25 minutes to work.**

III. REPORT BACK AND DISCUSSION (30 minutes)

- **Bring the whole class back together.**
- **Read the class the Case Study (Handout A) and the first question following it.**
- **Ask the recorder from one small group to explain how they answered the question.**
- **Ask the other groups to comment on this answer, and to explain their own approach if different.**
- **Add any points that have not been covered. (Suggested Answers and Discussion Points are below. However, these are not the only possible answers.)**
- **Proceed to the next question. Call on a different group's recorder to give an answer.**
- **Continue in the same way with the remaining questions.**

Case Study—Suggested Answers and Discussion Points

You have worked at a salon called "Kool Kuts" for about a year. Lately, workers have been complaining of breathing difficulty, allergies, and skin rashes. You have had some of these problems yourself, especially trouble breathing after doing sculptured nails. The chemical odors are sometimes so strong that even clients have complained.

You know that these health problems can be caused by chemicals. Recently you inspected the workplace and discovered that there is bad ventilation, particularly in the area where sculptured nails are done. Also, you found that people do perms and other chemical pro-

(III. REPORT BACK AND DISCUSSION, continued)

cesses without gloves. You found some products without clear labels listing the ingredients.

At a meeting with everyone present, including the owner, you asked for these improvements:

- A vented manicure table
- Gloves for workers to use when handling chemicals
- More information about product ingredients.

The owner responded that she wasn't going to spend the money to buy a vented table. For one thing, she wasn't sure that people's symptoms were related to the job. She also said that she couldn't give more information on the chemicals being used because she didn't have it.

At the same meeting, your co-workers said there was no way they would use gloves—even if they were supplied. They felt that gloves are too uncomfortable, and clients don't like them.

(a) What obstacles are there to getting changes made?

- The salon owner is unwilling to make the changes. She doesn't believe the problem is real. She doesn't want to spend any money.
- Your co-workers are unwilling to wear gloves.
- No additional information on chemicals seems to be available.

(b) What would you say to the owner when she claims she doesn't have more information about product ingredients?

- Remind her that all manufacturers must prepare an MSDS for each product they sell.

(III. REPORT BACK AND DISCUSSION, continued)

- Explain that employers are legally required to get MSDSs for products they use, and to show them to all employees who ask.

(c) How could you convince the owner that people's health problems might be work-related?

- Point out that several people who work in the same area of the salon, and who do the same work, have experienced the same problems (breathing trouble, allergies, and skin rashes).
- Do some research on the chemicals used in the different processes to see if they can cause the particular health problems which people have. To find out:
 - Get the MSDS for each product. Try to get it from the manufacturer yourself if the owner won't. On each MSDS, look for the chemical names of the product's ingredients and also read the "Health Effects" section.
 - Once you have the chemical names of the ingredients from the MSDS, look up the chemicals in a reference book in the library. See what information it gives about health effects.
 - Contact health and safety experts for help. (See **Handout B: Resource Agencies and Materials.**)

(d) How would you respond to the owner's concern about money?

- Explain that the cost of ignoring a problem may be higher than the cost of correcting it. The salon could lose money if technicians are out sick, if they quit, or if they can't see as many clients because of health problems.

(III. REPORT BACK AND DISCUSSION, continued)

- Tell her she may end up spending more money on workers' compensation than she would need to spend to fix the problem.
- Mention that clients have also complained about strong chemical odors. Improving the air quality will result in more satisfied patrons.
- Point out that Cal/OSHA may require her to fix the problems anyway if someone files a complaint.

(e) What would you say to your co-workers who don't want to wear gloves?

- Tell them about the health problems they might face if they don't protect themselves.
- Ask safety suppliers for samples of different kinds of protective gloves. Have everyone try them out. See if you can find gloves that are comfortable, fit well, and that people like to wear.

(f) What other ideas do you have for getting your changes made?

- | |
|---|
| <ul style="list-style-type: none">• Encourage students to come up with their own creative ideas. |
|---|

(g) What groups or organizations might you call on for help?

- Various groups and public agencies listed in **Hand-out B: Resource Agencies and Materials** can help you do research on hazards and figure out effective solutions.
- Cal/OSHA can give you information on health and safety laws that might apply to the problems in your workplace. If you think the owner is violating a

(III. REPORT BACK AND DISCUSSION, continued)

health and safety regulation or standard, you can make a complaint to Cal/OSHA. (For example, you can make a complaint if she refuses to provide MSDSs or if chemical levels in the air are too high.) The owner can also get help from Cal/OSHA if she decides to improve conditions. She can call the Cal/OSHA Consultation Service for advice.

- The United Food and Commercial Workers Union (UFCW) has health and safety information, and can help you develop a plan to get the improvements you need.
- The California State Board of Barbering and Cosmetology can send you information on its regulations.

- **End the class.**

This concludes our series of two classes on Solving Health and Safety Problems. The steps you take to solve problems will be similar to what we've done here, no matter which particular hazards you face in your shop.

If you have a health and safety problem at work, you'll need an action plan. Remember from our previous class that an action plan has several different steps. Try to remember them, and follow them on your own job to make working conditions safer and healthier for everyone.

- **Write the steps of an action plan on the board as you read them to the class.**

(III. REPORT BACK AND DISCUSSION, continued)

Action Plan

- **Identify the hazards.**
- **Choose which problems to work on first.**
- **Get more information about the hazards.**
- **Figure out short-term and long-term goals.**
- **Involve your co-workers.**
- **Document the problems.**
- **Find out what steps have already been taken.**
- **Decide how to get changes made.**
- **Set a time limit for fixing the problems.**
- **Determine what obstacles there are to solving the problems.**
- **Find ways to overcome the obstacles.**

Handout A Solving Health and Safety Problems/Part 2

KOOL KUTS—CASE STUDY

You have worked at a salon called “Kool Kuts” for about a year. Lately, workers have been complaining of breathing difficulty, allergies, and skin rashes. You have had some of these problems yourself, especially trouble breathing after doing sculptured nails. The chemical odors are sometimes so strong that even clients have complained.

You know that these health problems can be caused by chemicals. Recently you inspected the workplace and discovered that there is bad ventilation, particularly in the area where sculptured nails are done. Also, you found that people do perms and other chemical processes without gloves. You found some products without clear labels listing the ingredients.

At a meeting with everyone present, including the owner, you asked for these improvements:

- A vented manicure table
- Gloves for workers to use when handling chemicals
- More information about product ingredients.

The owner responded that she wasn't going to spend the money to buy a vented table. For one thing, she wasn't sure that people's symptoms were related to the job. She also said that she couldn't give more information on the chemicals being used because she didn't have it.

At the same meeting, your co-workers said there was no way they would use gloves—even if they were supplied. They felt that gloves are too uncomfortable, and clients don't like them.

(a) What obstacles are there to getting changes made?

(see next page)

(b) What would you say to the owner when she claims she doesn't have more information about product ingredients?

(c) How could you convince the owner that people's health problems might be work-related?

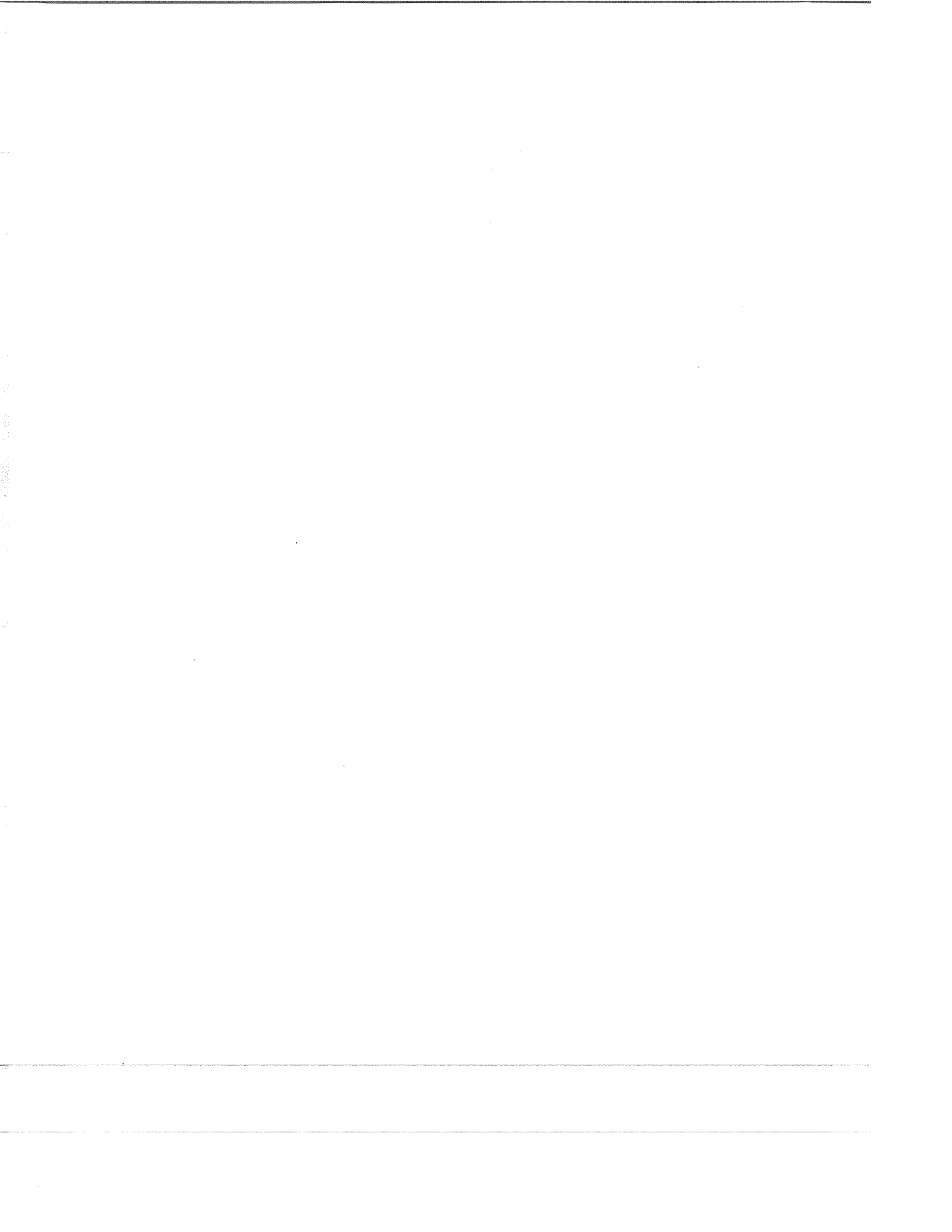
(d) How would you respond to the owner's concern about money?

(e) What would you say to your co-workers who don't want to wear gloves?

(see next page)

(f) What other ideas do you have for getting your changes made?

(g) What groups or organizations might you call on for help?



Handout B
Solving Health and Safety Problems/Part 2

RESOURCE AGENCIES AND MATERIALS
WHERE TO CALL AND WHAT TO READ

Government Agencies: California	Page B-1
Government Agencies: Federal	B-4
Training, Information, and Help	B-4
Legal Aid	B-6
Community Organizations	B-7
Occupational Health Clinics	B-8
Poison Control Centers	B-8
Labor and Trade Organizations	B-9
Reference Materials	B-10

GOVERNMENT AGENCIES: CALIFORNIA

California State Board of Barbering and Cosmetology

Protects consumers by licensing and regulating barbers, cosmetologists, estheticians, manicurists, electrologists, apprentices, and establishments. Administers and enforces health and safety regulations in licensed establishments. Call the Board with questions or concerns on any subject related to barbering and cosmetology.

P.O. Box 944226
Sacramento, CA 94244-2260
(916) 445-7061

California Division of Occupational Safety and Health (Cal/OSHA)

Enforces workplace health and safety regulations in California. For information about health and safety regulations, or to file a confidential complaint and request an inspection of your workplace, contact any office. Some offices are listed below. Also check the "Government Pages" of your local phone book under "California, State of, Industrial Relations Department, Occupational Safety and Health."

Headquarters

455 Golden Gate Ave., Room 5202
San Francisco, CA 94102
(415) 703-4341

Regional Offices

Call the regional office closest to you to get the number of your local compliance office.

Anaheim

2100 E. Katella Ave., Room 125
Anaheim, CA 92806
(714) 939-8611

Los Angeles

3550 W. Sixth St., Room 413
Los Angeles, CA 90020
(213) 736-4911

Sacramento

2424 Arden Way, Suite 125
Sacramento, CA 95825
(916) 920-6127

San Francisco

1390 Market St., Suite 822
San Francisco, CA 94102
(415) 557-8640

Cal/OSHA Consultation

Offers advice to employers on correcting health and safety hazards.

Headquarters

455 Golden Gate Ave., Room 5246
San Francisco, CA 94102
(415) 703-4050

Regional Offices**Downey**

8535 E. Florence Ave., Suite 200
Downey, CA 90240
(310) 861-9993

Fresno

1901 N. Gateway, Suite 102
Fresno, CA 93727
(209) 454-1295

Sacramento

2424 Arden Way, Suite 410
Sacramento, CA 95825
(916) 920-6131

San Diego

7827 Convoy Court, Suite 406
San Diego, CA 92111
(610) 279-3771

San Mateo

3 Waters Park Drive, Suite 230
San Mateo, CA 94403
(415) 573-3864

California Occupational Health Program

Part of the California Department of Health Services. This program has two components:

- **Hazard Evaluation System and Information Service (HESIS)**
 - Has free publications and a library.
 - Answers written requests for information on specific hazards.
- **Occupational Health Surveillance and Evaluation Program (OHSEP)**
 - Conducts research on job hazards.

Headquarters—HESIS and OHSEP

2151 Berkeley Way, Annex 11
Berkeley, CA 94704
(510) 540-2115

Division of Workers' Compensation

Provides information on your rights to benefits and medical care when you have a job-related illness or injury. There are several offices throughout the state. Check for local phone numbers in your phone book. Look in the "Government Pages" under "California, State of, Industrial Relations Department, Workers' Compensation."

Benefits Assistance and Enforcement

(800) 736-7401 (no charge)

Labor Commissioner

Provides information about employment rights, discrimination, and wrongful firings. Takes worker complaints about discrimination for health and safety activity, and will investigate them. There are several offices throughout the state. Check for local phone numbers in your phone book. Look in the "Government Pages" under "California, State of, Industrial Relations Department, Labor Standards Enforcement."

Los Angeles: (213) 897-2905

San Francisco: (415) 557-0904

GOVERNMENT AGENCIES: FEDERAL

Food and Drug Administration (FDA)

Regulates cosmetic products. Also takes consumer complaints and keeps records of them.

San Francisco District

Room 526, Federal Office Building
50 United Nations Plaza
San Francisco, CA 94102
(415) 556-2062

Los Angeles District

1521 Pico Boulevard.
Los Angeles, CA 90015
(213) 252-7582

National Institute for Occupational Safety and Health (NIOSH)

Offers free publications, conducts research on safety and health problems, evaluates health hazards in particular workplaces, and recommends exposure limits for toxic substances.

Hazard Evaluation/Technical Assistance/Publications

4676 Columbia Parkway
Cincinnati, Ohio 45226

National Hotline: (800) 356-4674 (no charge)

Publications: (513) 533-8287

TRAINING, INFORMATION, AND HELP

American Lung Association (ALA)

Has information on occupational and environmental lung hazards. Also offers smoking cessation programs.

Los Angeles

5858 Wilshire Boulevard Suite 300
Los Angeles, CA 90036
(213) 935-5864

Orange County

1570 E. 17th St.
Santa Ana, CA 92701
(714) 835-5864

San Diego and Imperial Counties

2750 Fourth Ave.
P.O. Box 3879
San Diego, CA 92163
(619) 297-3901

San Francisco

562 Mission St., Suite 203
San Francisco, CA 94105
(415) 543-4410

Center for Occupational and Environmental Health (COEH)

A University of California program. Conducts research on occupational illnesses and injuries; offers degree programs and continuing education courses related to health and safety.

760 University Hall
Berkeley, CA 94720
(510) 642-1681

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Los Angeles, CA 90019
(213) 931-9000

Sacramento Committee on Occupational Safety and Health (SacCOSH)

c/o Firefighters Local 522
3101 Stockton Boulevard
Sacramento, CA 95817
(916) 442-4390

Santa Clara Center for Occupational Safety and Health (SCCOSH)

760 North First St.
San Jose, CA 95112
(408) 998-4050

For a complete list of "COSH" groups outside California, contact:

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275 Seventh Ave., 8th Floor
New York, NY 10001
(212) 627-3900

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2515 Channing Way
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(510) 642-5507

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Oakland, CA 94610
(510) 893-7343

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UCLA School of Medicine
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Los Angeles, CA 90024-1736
(310) 206-2086

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(800) 523-2222 (24 hour hotline) (no charge)

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South Pasadena, CA 91030
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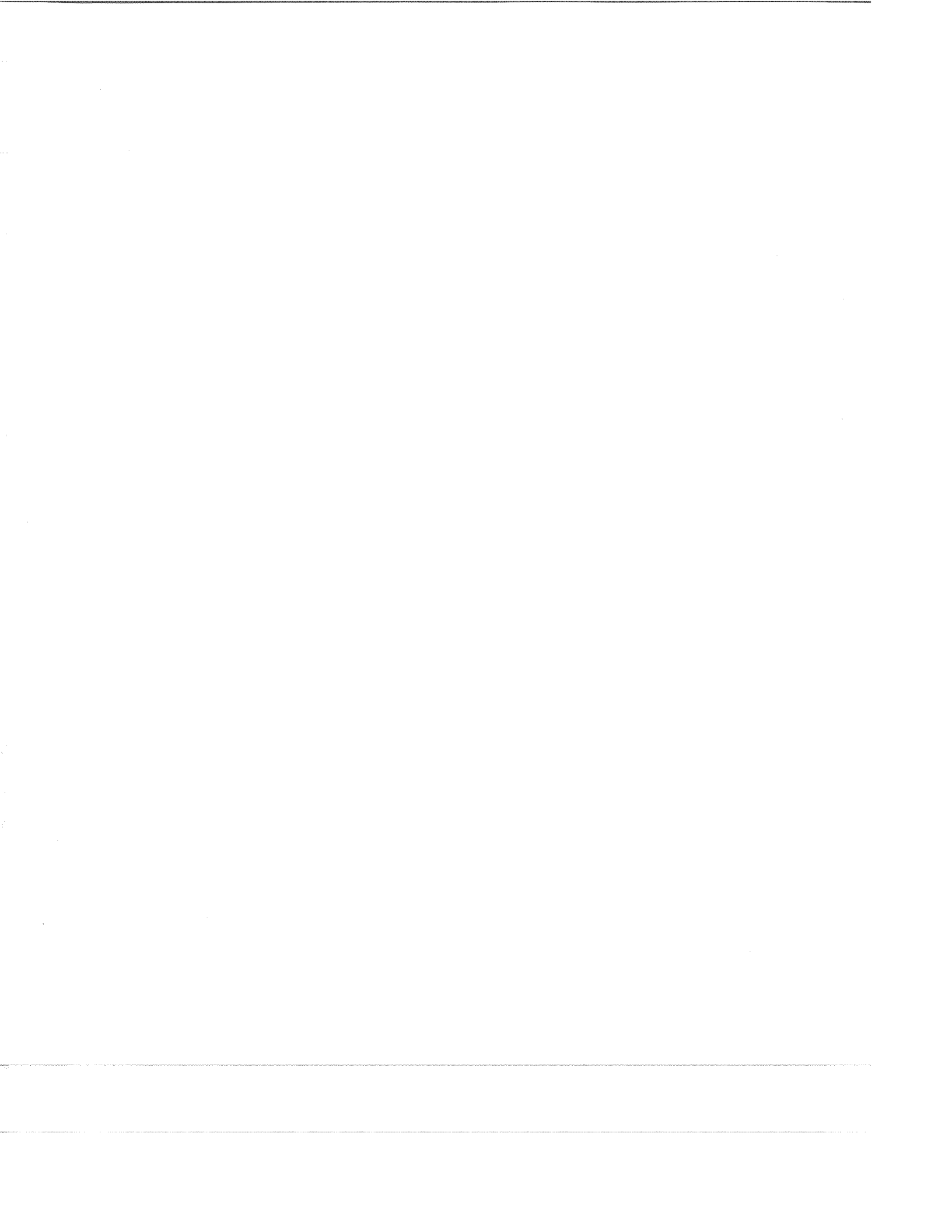
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Appendix

RESOURCE AGENCIES AND MATERIALS WHERE TO CALL AND WHAT TO READ

Government Agencies: California	Page 1
Government Agencies: Federal	4
Training, Information, and Help	4
Legal Aid	6
Community Organizations	7
Occupational Health Clinics	8
Poison Control Centers	8
Labor and Trade Organizations	9
Reference Materials	10

GOVERNMENT AGENCIES: CALIFORNIA

California State Board of Barbering and Cosmetology

Protects consumers by licensing and regulating barbers, cosmetologists, estheticians, manicurists, electrologists, apprentices, and establishments. Administers and enforces health and safety regulations in licensed establishments. Call the Board with questions or concerns on any subject related to barbering and cosmetology.

P.O. Box 944226
Sacramento, CA 94244-2260
(916) 445-7061

California Division of Occupational Safety and Health (Cal/OSHA)

Enforces workplace health and safety regulations in California. For information about health and safety regulations, or to file a confidential complaint and request an inspection of your workplace, contact any office. Some offices are listed below. Also check the "Government Pages" of your local phone book under "California, State of, Industrial Relations Department, Occupational Safety and Health."

Headquarters

455 Golden Gate Ave., Room 5202
San Francisco, CA 94102
(415) 703-4341

Regional Offices

Call the regional office closest to you to get the number of your local compliance office.

Anaheim

2100 E. Katella Ave., Room 125
Anaheim, CA 92806
(714) 939-8611

Los Angeles

3550 W. Sixth St., Room 413
Los Angeles, CA 90020
(213) 736-4911

Sacramento

2424 Arden Way, Suite 125
Sacramento, CA 95825
(916) 920-6127

San Francisco

1390 Market St., Suite 822
San Francisco, CA 94102
(415) 557-8640

Cal/OSHA Consultation

Offers advice to employers on correcting health and safety hazards.

Headquarters

455 Golden Gate Ave., Room 5246
San Francisco, CA 94102
(415) 703-4050

Regional Offices**Downey**

8535 E. Florence Ave., Suite 200
Downey, CA 90240
(310) 861-9993

Fresno

1901 N. Gateway, Suite 102
Fresno, CA 93727
(209) 454-1295

Sacramento

2424 Arden Way, Suite 410
Sacramento, CA 95825
(916) 920-6131

San Diego

7827 Convoy Court, Suite 406
San Diego, CA 92111
(610) 279-3771

San Mateo

3 Waters Park Drive, Suite 230
San Mateo, CA 94403
(415) 573-3864

California Occupational Health Program

Part of the California Department of Health Services. This program has two components:

- **Hazard Evaluation System and Information Service (HESIS)**
 - Has free publications and a library.
 - Answers written requests for information on specific hazards.
- **Occupational Health Surveillance and Evaluation Program (OHSEP)**
 - Conducts research on job hazards.

Headquarters—HESIS and OHSEP

2151 Berkeley Way, Annex 11
Berkeley, CA 94704
(510) 540-2115

Division of Workers' Compensation

Provides information on your rights to benefits and medical care when you have a job-related illness or injury. There are several offices throughout the state. Check for local phone numbers in your phone book. Look in the "Government Pages" under "California, State of, Industrial Relations Department, Workers' Compensation."

Benefits Assistance and Enforcement

(800) 736-7401 (no charge)

Labor Commissioner

Provides information about employment rights, discrimination, and wrongful firings. Takes worker complaints about discrimination for health and safety activity, and will investigate them. There are several offices throughout the state. Check for local phone numbers in your phone book. Look in the "Government Pages" under "California, State of, Industrial Relations Department, Labor Standards Enforcement."

Los Angeles: (213) 897-2905

San Francisco: (415) 557-0904

GOVERNMENT AGENCIES: FEDERAL

Food and Drug Administration (FDA)

Regulates cosmetic products. Also takes consumer complaints and keeps records of them.

San Francisco District
Room 526, Federal Office Building
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(415) 556-2062

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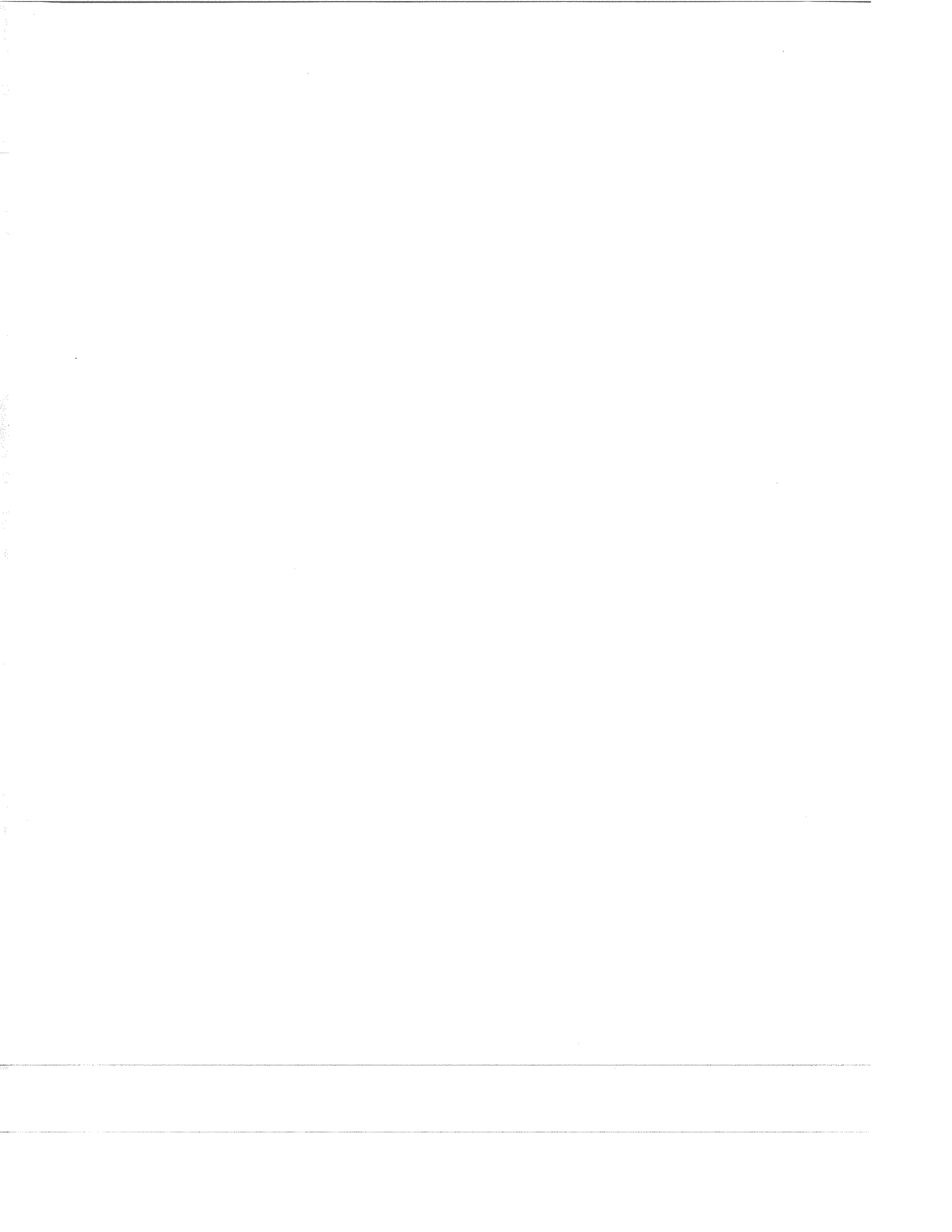
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Shampoos and Conditioners



How can chemicals in shampoos and conditioners get into your body?



Skin & eye contact

- Some chemicals may harm your skin directly and/or be absorbed into your bloodstream.
- You may splash chemicals into your eyes.
- You may accidentally touch your eyes with chemicals on your hands.
- Chemical vapors in the air may get into your eyes.



Breathing

- You may breathe in chemical vapors through your nose or mouth.



Swallowing

- Chemicals on your hands or in the air may contaminate your food, drink, or cigarettes.

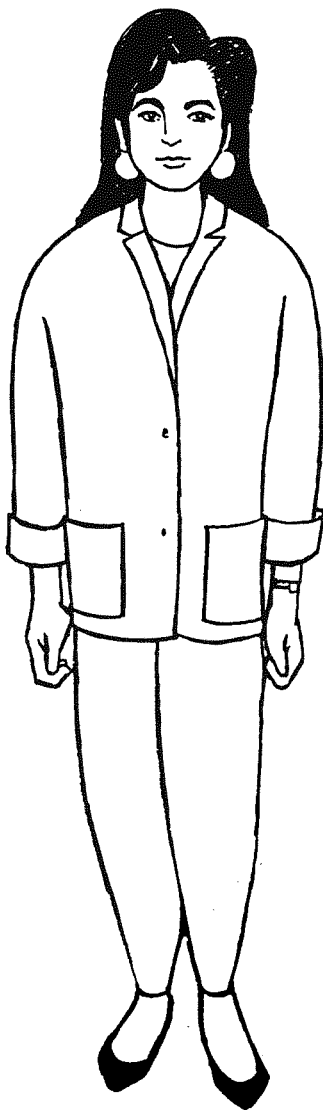
How can chemicals in shampoos and conditioners affect your body?

Different chemicals affect your body in different ways, depending on the *amount* of the chemical in the product, how *harmful* it is, the *length of time* you are exposed, and other factors. Not every person has the same reaction to a chemical. Some people experience health effects when they work with a product; others never do. Health problems that may be caused by chemicals in shampoos and conditioners include:

Central nervous system effects. Headache, dizziness, nausea, drowsiness, restlessness.

Lung irritation. Breathing difficulty, shortness of breath, coughing, swelling of lung tissue.

Skin irritation and dermatitis. Redness, itching, skin rash, or dry skin which cracks and flakes. Most common on the hands and arms.



Eye irritation. Redness, burning, watering, itching.

Nose and throat irritation. Runny nose, scratchy throat, burning, itching.

Allergies. Stuffy or runny nose, sneezing, asthma, dermatitis. If you become sensitive to a particular chemical, you will have an allergic reaction every time you use it.

Cancer. Chemicals used in a few shampoos and conditioners have been shown to cause cancer if you work with them over a long period of time. This is not a common health problem.

What hazardous chemicals are sometimes found in shampoos and conditioners?

WARNING!
Exposure to these chemicals may cause:

Alcohol (ethyl or isopropyl). Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis.

Petroleum distillates, detergents, or soaps. Eye irritation, skin irritation, and dermatitis.

Colors or fragrances. Allergies, including allergic dermatitis.

Formaldehyde. Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis. Allergies, including asthma. Known to cause cancer with long-term use.



Quaternary ammonium compounds. Skin irritation and dermatitis.

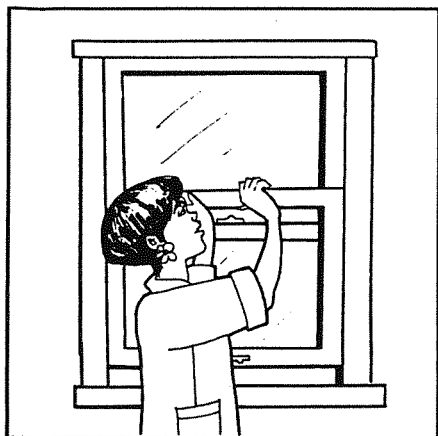
Sodium lauryl sulfate. Skin irritation and dermatitis.

Triethanolamine (TEA) or diethanolamine (DEA). These chemicals can combine with another substance in certain products to form **nitrosamines**, which are suspected to cause cancer. If TEA or DEA are in a product that also contains the chemical *BNPD*, nitrosamines may be produced. (The chemical name for BNPD is 2-bromo-2-nitroprone-1,3-diol.)

Not all shampoos and conditioners contain these chemicals, and some may contain hazardous chemicals not listed above. Always check the product's Material Safety Data Sheet (MSDS) for more information.

How can you protect yourself from chemical hazards?

When you work around chemicals, it's important to take steps to protect your health.



Ventilation

- Always work in a well-ventilated area. If there's no ventilation system, open windows and doors to bring in fresh air from outside.
-

Change what you do

- Keep containers closed when you're not using them so vapors won't get into the air.
-

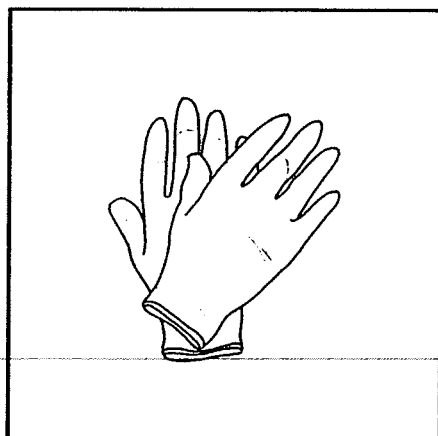


Avoid hazardous chemicals

- Don't use products that contain formaldehyde, or products that can form nitrosamines.
-

Don't eat, drink, or smoke in your work area

- Chemicals or chemical vapors might contaminate your food, drink, or cigarettes.
-



Use protective equipment

- Wear gloves. Use a type designed to protect your skin from the particular chemicals you're using.

Hairsprays



How can chemicals in hairsprays get into your body?



Skin & eye contact

- Some chemicals may harm your skin directly and/or be absorbed into your bloodstream.
- You may spray hairspray into your eyes.
- You may accidentally touch your eyes with hairspray on your hands.
- Mists from aerosol hairsprays may get into your eyes.



Breathing

- You may breathe in hairspray mists through your nose or mouth.



Swallowing

- Hairspray on your hands or in the air may contaminate your food, drink, or cigarettes.

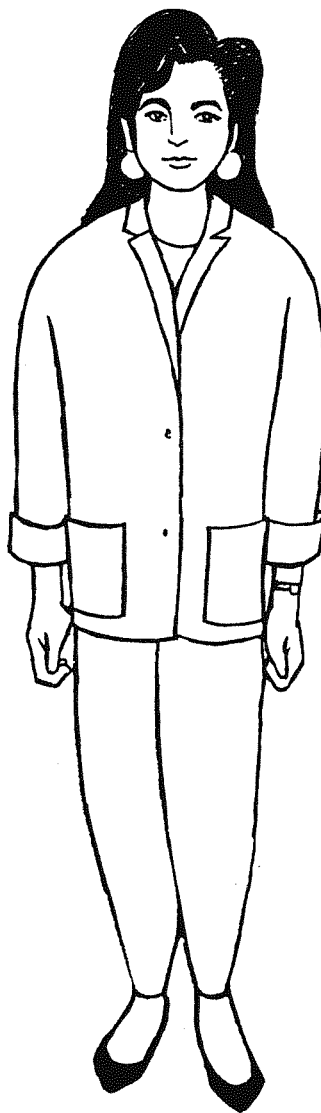
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Different chemicals affect your body in different ways, depending on the *amount* of the chemical in the product, how *harmful* it is, the *length of time* you are exposed, and other factors. Not every person has the same reaction to a chemical. Some people experience health effects when they work with a product; others never do. Health problems that may be caused by chemicals in hairsprays include:

Central nervous system effects. Headache, dizziness, nausea, drowsiness, restlessness.

Lung irritation. Breathing difficulty, shortness of breath, coughing, swelling of lung tissue.

Thesauriosis. Sometimes called *storage disease*. A lung disease that causes a chronic cough and breathing problems, including shortness of breath. It usually develops from a pre-existing respiratory disease like bronchitis, asthma, or emphysema.



Eye irritation. Redness, burning, watering, itching.

Nose and throat irritation. Runny nose, scratchy throat, burning, itching.

Skin irritation and dermatitis. Redness, itching, skin rash, or dry skin which cracks and flakes. Most common on the hands and arms.

Cancer. Methylene chloride has been shown to cause cancer in laboratory animals. It has been banned since 1989 but may still be found in some hairsprays.

What hazardous chemicals are sometimes found in hairsprays?

WARNING!
Exposure to these chemicals may cause:

Alcohol (denatured ethyl or tertbutyl). Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis.

Methylene chloride. Central nervous system effects. Causes cancer in lab animal tests. Banned since 1989 but may still be found in some hairsprays.

Isobutane. Used as a propellant in some hairsprays. Extreme fire hazard.



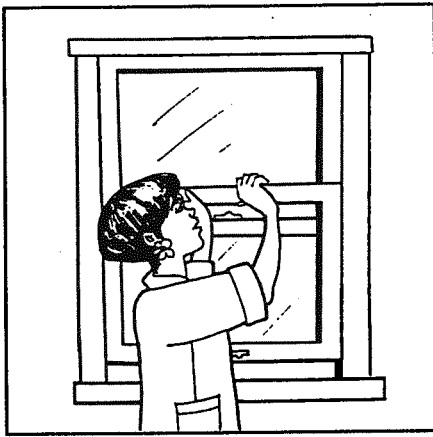
Propane. Used as a propellant in some hairsprays. Extreme fire hazard.

Polyvinylpyrrolidone (PVP). Lung and other respiratory problems, including *thesaurosis* (storage disease).

Not all hairsprays contain these chemicals, and some may contain hazardous chemicals not listed above. Always check the product's Material Safety Data Sheet (MSDS) for more information.

How can you protect yourself from chemical hazards?

When you work around chemicals, it's important to take steps to protect your health.



Ventilation

- Always work in a well-ventilated area. If there's no ventilation system, open windows and doors to bring in fresh air from outside.
-

Change what you do

- Don't use hairsprays near electrical equipment, sparks, or flames, because they can easily catch on fire.
 - Use wet styling aids instead of hairsprays.
-

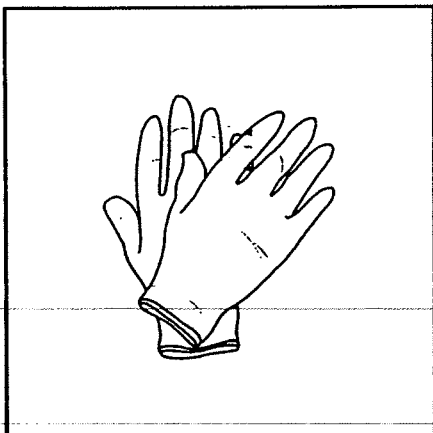


Avoid hazardous chemicals

- Don't use products that contain methylene chloride or polyvinylpyrrolidone.
 - Use pump sprays rather than aerosol sprays whenever possible.
-

Don't eat, drink, or smoke in your work area

- Hairspray on your hands or in the air might contaminate your food, drink, or cigarettes.
 - Hairspray mists can catch fire if they come in contact with a spark from a cigarette.
-



Use protective equipment

- Wear gloves. Use a type designed to protect your skin from the particular chemicals you're using.
-

Hair Bleaches



How can chemicals in hair bleaches get into your body?



Skin & eye contact

- Some chemicals may harm your skin directly and/or be absorbed into your bloodstream.
- You may splash chemicals into your eyes.
- You may accidentally touch your eyes with chemicals on your hands.
- Chemical vapors in the air may get into your eyes.



Breathing

- You may breathe in chemical vapors through your nose or mouth.



Swallowing

- Chemicals on your hands or in the air may contaminate your food, drink, or cigarettes.

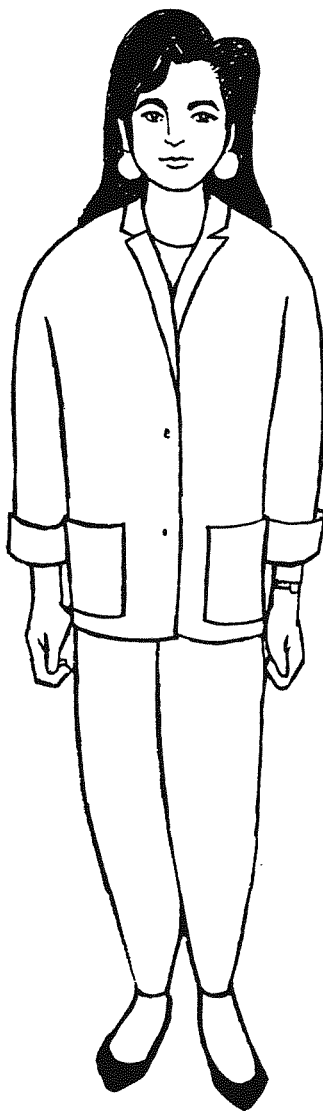
How can chemicals in hair bleaches affect your body?

Different chemicals affect your body in different ways, depending on the *amount* of the chemical in the product, how *harmful* it is, the *length of time* you are exposed, and other factors. Not every person has the same reaction to a chemical. Some people experience health effects when they work with a product; others never do. Health problems that may be caused by chemicals in hair bleaches include:

Central nervous system effects. Headache, dizziness, nausea, drowsiness, restlessness.

Nose and throat irritation. Runny nose, scratchy throat, burning, itching.

Skin irritation and dermatitis. Redness, itching, skin rash, or dry skin which cracks and flakes. Most common on the hands and arms.



Eye irritation. Redness, burning, watering, itching.

Lung irritation. Breathing difficulty, shortness of breath, coughing, swelling of lung tissue.

Burns. Chemicals in some hair bleaches can cause burns if they get on your skin or in your eyes.

Allergies. Stuffy or runny nose, sneezing, asthma, dermatitis. If you become sensitive to a particular chemical, you will have an allergic reaction every time you use it.

What hazardous chemicals are sometimes found in hair bleaches?

WARNING!
Exposure to these chemicals may cause:

Alcohol (ethyl or isopropyl). Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis.

Ammonium hydroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Skin irritation and dermatitis.

Hydrogen peroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Severe irritation of mouth, throat, and stomach if swallowed.



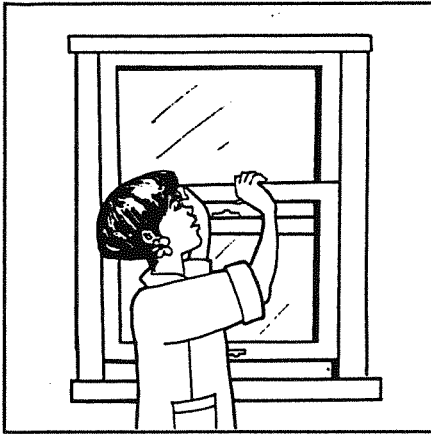
Ammonium persulfate or potassium persulfate. Eye irritation. Skin irritation and dermatitis. Allergies, including asthma. Possible fire hazard.

Sodium peroxide. Eye and nose irritation. Skin and eye burns. Skin irritation and dermatitis.

Not all hair bleaches contain these chemicals, and some may contain hazardous chemicals not listed above. Always check the product's Material Safety Data Sheet (MSDS) for more information.

How can you protect yourself from chemical hazards?

When you work around chemicals, it's important to take steps to protect your health.



Ventilation

- Always work in a well-ventilated area. If there's no ventilation system, open windows and doors to bring in fresh air from outside.

Change what you do

- Store products with persulfates away from direct sunlight, heat, or flames. They are flammable.
- Keep containers closed when you're not using them so vapors won't get into the air.

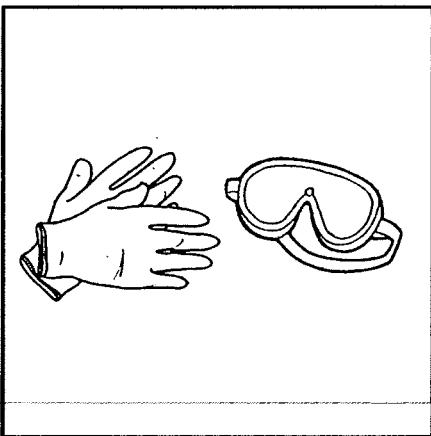


Avoid hazardous chemicals

- Do hair lightening without boosters (ammonium persulfate or potassium persulfate).
- Or use non-persulfate boosters like sodium perborate, sodium percarbonate, or magnesium carbonate.

Don't eat, drink, or smoke in your work area

- Chemicals or chemical vapors might contaminate your food, drink, or cigarettes.
- Some chemicals can easily catch fire if they come in contact with a spark from a cigarette.



Use protective equipment

- Wear gloves. Use a type designed to protect your skin from the particular chemicals you're using.
- Wear safety goggles when mixing chemicals to protect your eyes from splashes.

Hair Colorings



How can chemicals in hair colorings get into your body?



Skin & eye contact

- Some chemicals may harm your skin directly and/or be absorbed into your bloodstream.
 - You may splash chemicals into your eyes.
 - You may accidentally touch your eyes with chemicals on your hands.
 - Chemical vapors in the air may get into your eyes.
-



Breathing

- You may breathe in chemical vapors through your nose or mouth.
-



Swallowing

- Chemicals on your hands or in the air may contaminate your food, drink, or cigarettes.
-

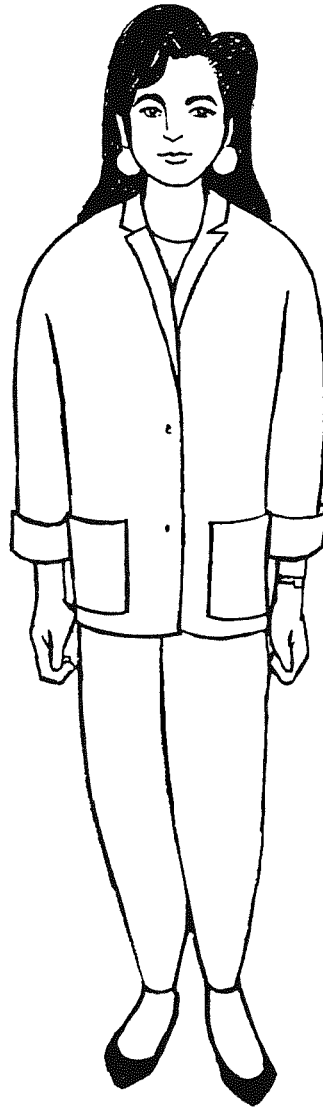
How can chemicals in hair colorings affect your body?

Different chemicals affect your body in different ways, depending on the *amount* of the chemical in the product, how *harmful* it is, the *length of time* you are exposed, and other factors. Not every person has the same reaction to a chemical. Some people experience health effects when they work with a product; others never do. Health problems that may be caused by chemicals in hair colorings include:

Central nervous system effects. Headache, dizziness, nausea, drowsiness, restlessness.

Allergies. Stuffy or runny nose, sneezing, asthma, dermatitis. Sometimes chemicals from other products, such as thioglycolates in perm solutions or relaxers, can make you more likely to have an allergic reaction to chemicals in hair colorings.

Skin irritation and dermatitis. Redness, itching, skin rash, or dry skin which cracks and flakes. Most common on the hands and arms.



Eye irritation, eye damage, and blindness. Redness, burning, watering, itching, loss of sight.

Nose and throat irritation. Runny nose, scratchy throat, burning, itching.

Lung irritation. Breathing difficulty, shortness of breath, coughing, swelling of lung tissue.

Burns. Chemicals in some hair colorings can cause burns if they get on your skin or in your eyes.

Cancer. Coal tar dyes, used in some permanent hair colorings, have been shown to cause cancer if you work with them over a long period of time. This is not a common health problem.

Lead poisoning. Some hair coloring products contain lead. If you are exposed to a large amount of lead, you may be at risk of lead poisoning. Symptoms include muscle weakness, leg cramps, numbness, depression, and brain damage. This is not a common health problem.

What hazardous chemicals are sometimes found in hair colorings?

WARNING!
Exposure to these chemicals may cause:

Alcohol (ethyl, isopropyl, or propyl). Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis.

Hydrogen peroxide.

Eye, nose, throat, and lung irritation. Skin and eye burns. Severe irritation of mouth, throat, and stomach if swallowed.

Lead acetate. Lead poisoning if absorbed in large amount.



Aminophenols. Eye, nose, and throat irritation. Skin irritation and dermatitis. Severe allergic reaction in some people.

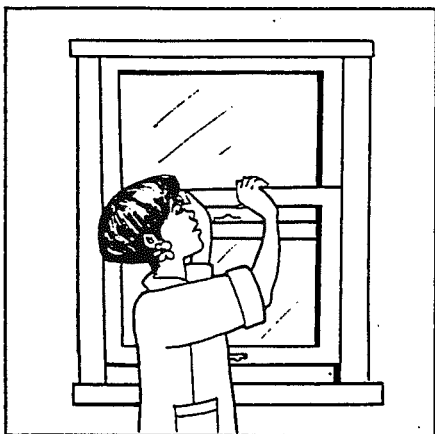
Ammonium hydroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Skin irritation and dermatitis.

Coal tar dyes (aniline derivatives). Examples: 4-methoxy-m-phenylenediamine (4-MMPD), paraphenylenediamine, 2-nitrophenylenediamine, 2,4-diaminoanisole, and 2,4-diaminoanisole sulfate. Severe eye irritation and blindness. Skin irritation and dermatitis. Severe allergic reaction in some people. Cancer if absorbed through the skin during long-term use. The FDA recommends that products with coal tar dyes carry warning labels, but the labels don't mention cancer.

Not all hair colorings contain these chemicals, and some may contain hazardous chemicals not listed above. Always check the product's Material Safety Data Sheet (MSDS) for more information.

How can you protect yourself from chemical hazards?

When you work around chemicals, it's important to take steps to protect your health.



Ventilation

- Always work in a well-ventilated area. If there's no ventilation system, open windows and doors to bring in fresh air from outside.
-

Change what you do

- Keep containers closed when you're not using them so vapors won't get in the air.
 - Alternate between using vegetable colorings and semi-permanent colors.
-

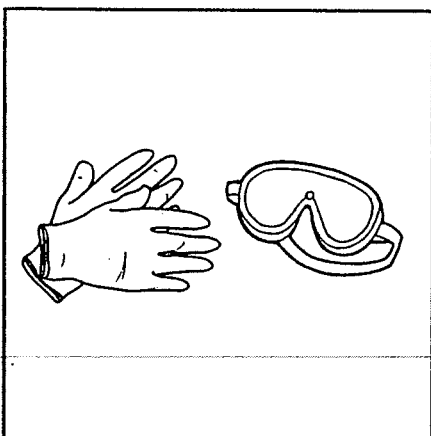


Avoid hazardous chemicals

- Don't use products that contain coal tar dyes or lead acetate.
 - Use hair coloring products that are less harmful, like henna or another vegetable coloring.
-

Don't eat, drink, or smoke in your work area

- Chemicals or chemical vapors might contaminate your food, drink, or cigarettes.
-



Use protective equipment

- Wear gloves. Use a type designed to protect your skin from the particular chemicals you're using.
 - Wear safety goggles when mixing chemicals to protect your eyes from splashes.
-

Chemical Hair Relaxers



How can chemicals in hair relaxers get into your body?



Skin & eye contact

- Some chemicals may harm your skin directly and/or be absorbed into your bloodstream.
- You may splash chemicals into your eyes.
- You may accidentally touch your eyes with chemicals on your hands.
- Chemical vapors in the air may get into your eyes.



Breathing

- You may breathe in chemical vapors through your nose or mouth.



Swallowing

- Chemicals on your hands or in the air may contaminate your food, drink, or cigarettes.

How can chemicals in hair relaxers affect your body?

Different chemicals affect your body in different ways, depending on the *amount* of the chemical in the product, how *harmful* it is, the *length of time* you are exposed, and other factors. Not every person has the same reaction to a chemical. Some people experience health effects when they work with a product; others never do. Health problems that may be caused by chemicals in relaxers include:

Central nervous system effects. Headache, dizziness, nausea, drowsiness, restlessness.

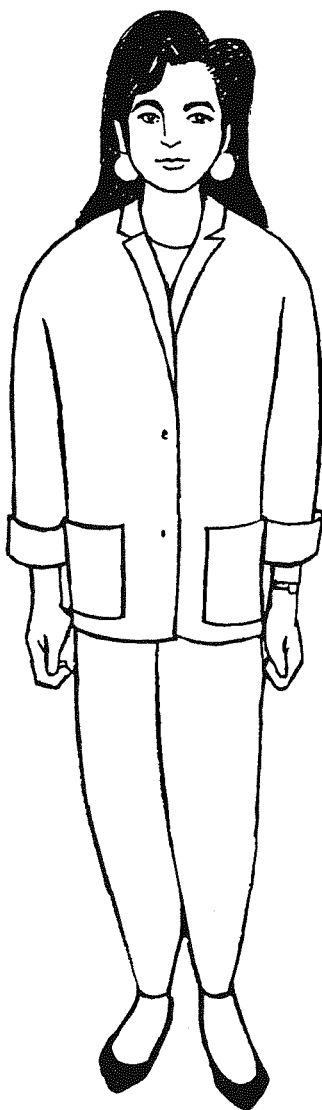
Eye irritation. Redness, burning, watering, itching.

Nose and throat irritation. Runny nose, scratchy throat, burning, itching.

Lung irritation. Breathing difficulty, shortness of breath, coughing, swelling of lung tissue.

Skin irritation and dermatitis. Redness, itching, skin rash, or dry skin which cracks and flakes. Most common on the hands and arms.

Burns. Chemicals in some hair relaxers can cause burns if they get on your skin or in your eyes.



Allergies. Stuffy or runny nose, sneezing, asthma, dermatitis. If you become sensitive to a particular chemical, you will have an allergic reaction every time you use it.

What hazardous chemicals are sometimes found in hair relaxers?

WARNING!
Exposure to these chemicals may cause:

Bromates. Eye, nose, and throat irritation. Central nervous system effects. Skin and eye burns. Skin irritation and dermatitis. Severe irritation of mouth, throat, and stomach if swallowed. Kidney damage if swallowed.

Alcohol (isopropyl). Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis.

Ammonium hydroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Skin irritation and dermatitis.

Boric acid, perborate, or borate. Central nervous system effects. Kidney damage if swallowed.



Hydrogen peroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Severe irritation of mouth, throat, and stomach if swallowed.

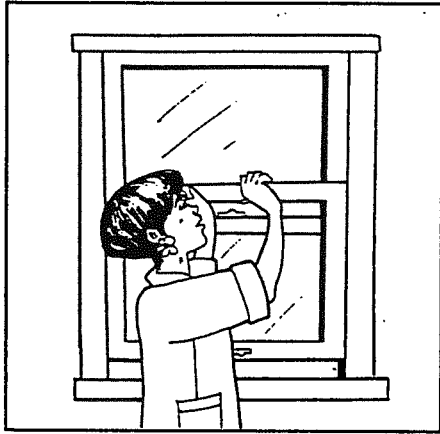
Sodium hydroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Skin irritation and dermatitis. Severe irritation of mouth, throat, and stomach if swallowed.

Ammonium thioglycolate or glycerol monothioglycolate. Eye, nose, throat, and lung irritation. Skin irritation and dermatitis. Allergies, including asthma. (Ammonium thioglycolate is less likely to cause some of these symptoms.)

Not all hair relaxers contain these chemicals, and some may contain hazardous chemicals not listed above. Always check the product's Material Safety Data Sheet (MSDS) for more information.

How can you protect yourself from chemical hazards?

When you work around chemicals, it's important to take steps to protect your health.



Ventilation

- Always work in a well-ventilated area. If there's no ventilation system, open windows and doors to bring in fresh air from outside.

Change what you do

- Use a heat pressing method for straightening hair instead of chemicals.
- Keep containers closed when you're not using them so vapors won't get into the air.

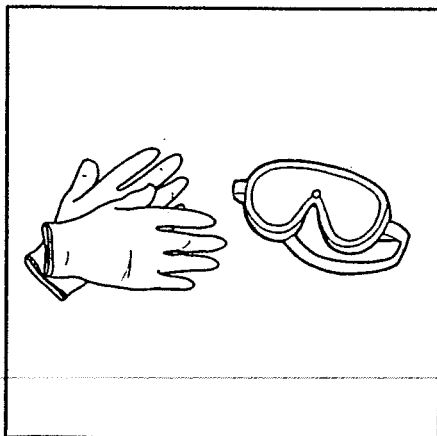


Avoid hazardous chemicals

- Use products that contain bisulfites instead of sodium hydroxide or thioglycolates.
- Use ammonium thioglycolate instead of glycerol monothioglycolate.

Don't eat, drink, or smoke in your work area

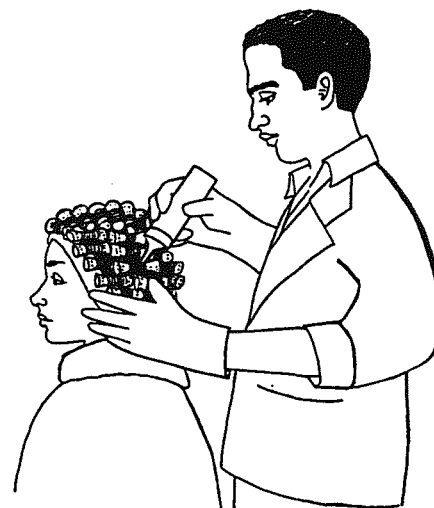
- Chemicals or chemical vapors might contaminate your food, drink, or cigarettes.



Use protective equipment

- Wear gloves. Use a type designed to protect your skin from the particular chemicals you're using.
- Wear safety goggles when mixing chemicals to protect your eyes from splashes.

Permanent Waving



How can chemicals in perm solutions get into your body?



Skin & eye contact

- Some chemicals may harm your skin directly and/or be absorbed into your bloodstream.
- You may splash chemicals into your eyes.
- You may accidentally touch your eyes with chemicals on your hands.
- Chemical vapors in the air may get into your eyes.



Breathing

- You may breathe in chemical vapors through your nose or mouth.



Swallowing

- Chemicals on your hands or in the air may contaminate your food, drink, or cigarettes.

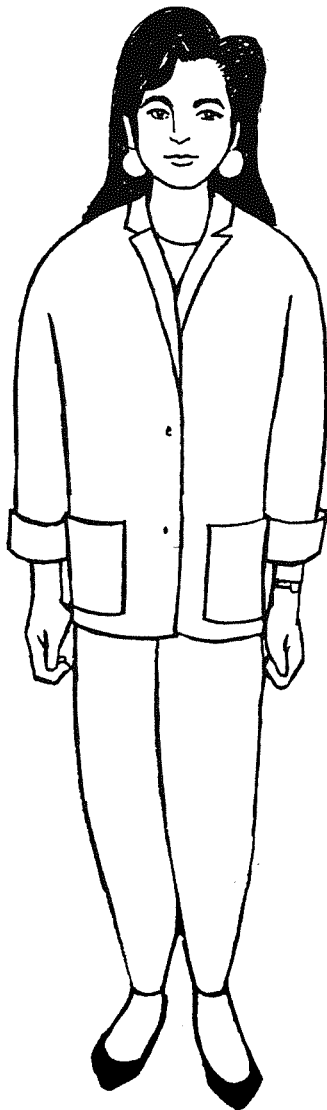
How can chemicals in perm solutions affect your body?

Different chemicals affect your body in different ways, depending on the *amount* of the chemical in the product, how *harmful* it is, the *length of time* you are exposed, and other factors. Not every person has the same reaction to a chemical. Some people experience health effects when they work with a product; others never do. Health problems that may be caused by chemicals in perm solutions include:

Central nervous system effects. Headache, dizziness, nausea, drowsiness, restlessness.

Nose and throat irritation. Runny nose, scratchy throat, burning, itching.

Skin irritation and dermatitis. Redness, itching, skin rash, or dry skin which cracks and flakes. Most common on the hands and arms.



Eye irritation. Redness, burning, watering, itching.

Lung irritation. Breathing difficulty, shortness of breath, coughing, swelling of lung tissue.

Burns. Chemicals in some perm solutions can cause burns if they get on your skin or in your eyes.

Allergies. Stuffy or runny nose, sneezing, asthma, dermatitis. If you become sensitive to a particular chemical, you will have an allergic reaction every time you use it.

What hazardous chemicals are sometimes found in perm solutions?

WARNING!
Exposure to these chemicals may cause:

Hydrogen peroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Severe irritation of mouth, throat, and stomach if swallowed.

Alcohol (isopropyl). Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis.

Sodium hydroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Skin irritation and dermatitis. Severe irritation of mouth, throat, and stomach if swallowed.



Bromates. Eye, nose, and throat irritation. Central nervous system effects. Skin and eye burns. Skin irritation and dermatitis. Severe irritation of mouth, throat, and stomach if swallowed. Kidney damage if swallowed.

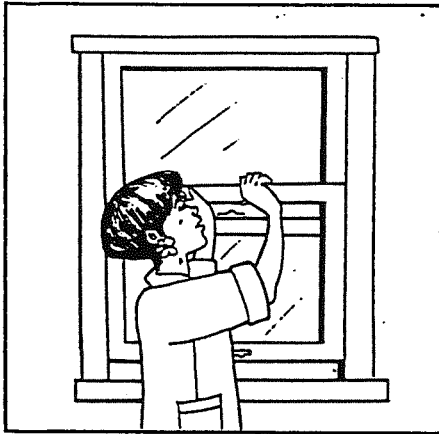
Boric acid, perborate, or borate. Central nervous system effects. Kidney damage if swallowed.

Ammonium thioglycolate or glycerol monothioglycolate. Eye, nose, throat, and lung irritation. Skin irritation and dermatitis. Allergies, including asthma. (Ammonium thioglycolate is less likely to cause some of these symptoms.)

Not all perm solutions contain these chemicals, and some may contain hazardous chemicals not listed above. Always check the product's Material Safety Data Sheet (MSDS) for more information.

How can you protect yourself from chemical hazards?

When you work around chemicals, it's important to take steps to protect your health.



Ventilation

- Always work in a well-ventilated area. If there's no ventilation system, open windows and doors to bring in fresh air from outside.
-

Change what you do

- Keep containers closed when you're not using them so vapors won't get into the air.
 - Cut and roll the client's hair before putting on solution, so you don't get solution on your hands.
-

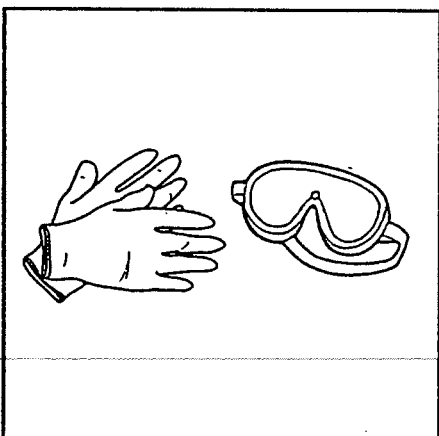


Avoid hazardous chemicals

- Use products that contain bisulfites instead of sodium hydroxide or thioglycolates.
 - Use ammonium thioglycolate instead of glycerol monothioglycolate.
 - Avoid using bromates.
-

Don't eat, drink, or smoke in your work area

- Chemicals or chemical vapors might contaminate your food, drink, or cigarettes.
-



Use protective equipment

- Wear gloves. Use a type designed to protect your skin from the particular chemicals you're using.
- Wear safety goggles when mixing chemicals to protect your eyes from splashes.

Manicuring

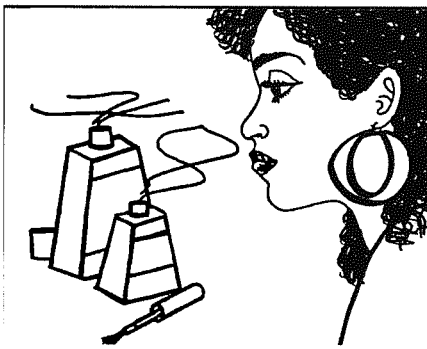


How can chemicals used in manicuring get into your body?



Skin & eye contact

- Some chemicals may harm your skin directly and/or be absorbed into your bloodstream.
- You may splash chemicals into your eyes.
- You may accidentally touch your eyes with chemicals on your hands.
- Chemical vapors or dust in the air may get into your eyes.



Breathing

- You may breathe in chemical vapors through your nose or mouth.
- When filing nails, you may breathe in harmful dust.



Swallowing

- If chemicals (including dust) are on your hands or in the air, they may contaminate your food, drink, or cigarettes.

How can chemicals in manicuring products affect your body?

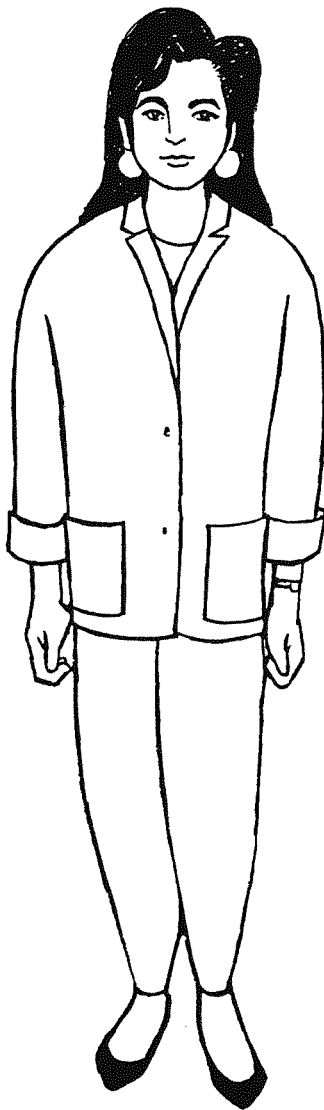
Different chemicals affect your body in different ways, depending on the *amount* of the chemical in the product, how *harmful* it is, the *length of time* you are exposed, and other factors. Not every person has the same reaction to a chemical. Some people experience health effects when they work with a product; others never do. Health problems that may be caused by chemicals in manicuring products include:

Central nervous system effects. Headache, dizziness, nausea, drowsiness, restlessness.

Nose and throat irritation. Runny nose, scratchy throat, burning, itching.

Skin irritation and dermatitis. Redness, itching, skin rash, or dry skin which cracks and flakes. Most common on the hands and arms.

Allergies. Stuffy or runny nose, sneezing, asthma, dermatitis. If you become sensitive to a particular chemical, you will have an allergic reaction every time you use it.



Eye irritation. Redness, burning, watering, itching.

Lung irritation. Breathing difficulty, shortness of breath, coughing, swelling of lung tissue.

Burns. Chemicals in some manicuring products can cause burns if they get on your skin or in your eyes.

Reproductive problems. Studies with laboratory animals have shown that chemicals found in some manicuring products can cause reproductive problems, such as birth defects and infertility. This is not common.

Cancer. Formaldehyde, used in some manicuring products, has been shown to cause cancer if you work with it over a long period of time. This is not a common health problem.

What hazardous chemicals are sometimes found in manicuring products?

WARNING!
Exposure to these chemicals may cause:

Formaldehyde. Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis. Allergies, including asthma. Known to cause cancer with long-term use.

Acetone. Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis.

Ethyl acetate or butyl acetate. Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis.

Glycol ethers (a generic term for a group of chemicals). Reproductive problems shown in lab animal tests. Possible other effects depending on the specific chemical.



Lanolin. Skin irritation and dermatitis.

Methyl ethyl ketone (MEK). Eye, nose, and throat irritation. Central nervous system effects.

Toluene. Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis. Reproductive problems.

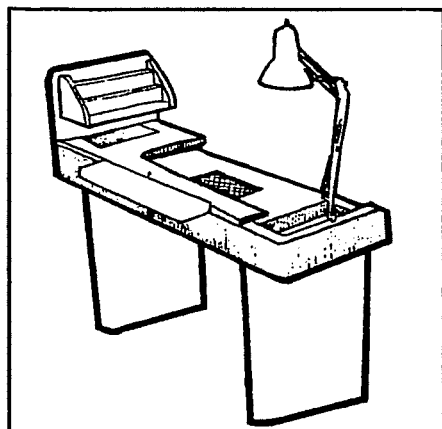
Xylene. Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis. Reproductive problems.

Sodium hydroxide or potassium hydroxide. Eye, nose, throat, and lung irritation. Skin and eye burns. Skin irritation and dermatitis. Severe irritation of mouth, throat, and stomach if swallowed.

Not all manicuring products contain these chemicals, and some may contain hazardous chemicals not listed above. Always check the product's Material Safety Data Sheet (MSDS) for more information. Sculptured nail products are covered in a separate factsheet.

How can you protect yourself from chemical hazards?

When you work around chemicals, it's important to take steps to protect your health.



Ventilation

- Always work in a well-ventilated area. If there's no ventilation system, open windows and doors to bring in fresh air from outside.
- Use a manicuring table with a built-in ventilation system. The hood pulls dust and vapors away from your breathing area.
- Don't rely on table-top fans. They only blow dust and vapors around the room; they don't get rid of them.



Change what you do

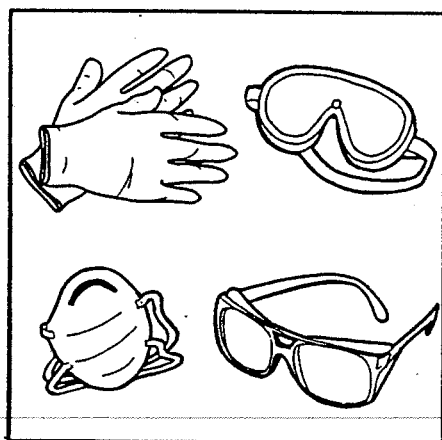
- Keep containers closed when you're not using them so vapors won't get into the air.

Avoid hazardous chemicals

- Don't use products that contain formaldehyde.

Don't eat, drink, or smoke in your work area

- Chemicals, chemical vapors, or dust might contaminate your food, drink, or cigarettes.



Use protective equipment

- Wear gloves. Use a type designed to protect your skin from the particular chemicals you're using.
- Wear a dust mask to protect yourself from dust when you file nails. But remember that a dust mask doesn't protect you from chemical vapors.
- Wear safety glasses (with side shields) to protect your eyes from nail clippings.
- Wear safety goggles when mixing chemicals to protect your eyes from splashes.

Sculptured Nails



How can chemicals in sculptured nail products get into your body?



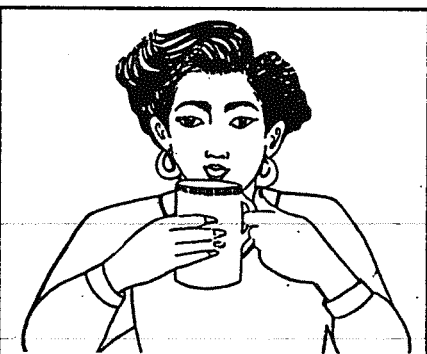
Skin & eye contact

- Some chemicals may harm your skin directly and/or be absorbed into your bloodstream.
- You may splash chemicals into your eyes.
- You may accidentally touch your eyes with chemicals on your hands.
- Chemical vapors or dust in the air may get into your eyes.



Breathing

- You may breathe in chemical vapors through your nose or mouth.
- When filing nails, you may breathe in harmful dust.



Swallowing

- If chemicals (including dust) are on your hands or in the air, they may contaminate your food, drink, or cigarettes.

How can chemicals in sculptured nail products affect your body?

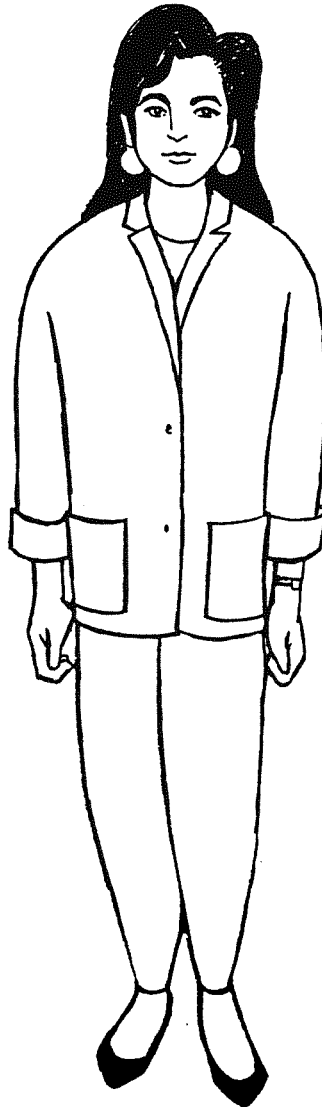
Different chemicals affect your body in different ways, depending on the *amount* of the chemical in the product, how *harmful* it is, the *length of time* you are exposed, and other factors. Not every person has the same reaction to a chemical. Some people experience health effects when they work with a product; others never do. Health problems that may be caused by chemicals in sculptured nail products include:

Central nervous system effects. Headache, dizziness, nausea, drowsiness, restlessness.

Nose and throat irritation. Runny nose, scratchy throat, burning, itching.

Skin irritation and dermatitis. Redness, itching, skin rash, or dry skin which cracks and flakes. Most common on the hands and arms.

Cancer. Studies with laboratory animals and humans have shown that chemicals found in some sculptured nail products can cause cancer. This is not a common health problem.



Eye irritation. Redness, burning, watering, itching.

Lung irritation. Breathing difficulty, shortness of breath, coughing, swelling of lung tissue.

Allergies. Stuffy or runny nose, sneezing, asthma, dermatitis. If you become sensitive to a particular chemical, you will have an allergic reaction every time you use it.

Reproductive problems. Studies with laboratory animals have shown that chemicals found in some sculptured nail products can cause reproductive problems, such as birth defects and infertility. This is not common.

What hazardous chemicals are sometimes found in sculptured nail products?

WARNING!
Exposure to these chemicals may cause:

Dimethyl p-toluidine. Eye, nose, and throat irritation.

Acetone. Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis.

Methyl ethyl ketone (MEK). Eye, nose, and throat irritation. Central nervous system effects.

Ethyl acetate or butyl acetate. Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis.



Methacrylates (butyl, ethyl, isobutyl, or methyl). Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis. Severe allergic reaction in some people. Restricted by the FDA in 1974 but may still be found in some sculptured nail products.

Formaldehyde. Eye, nose, throat, and lung irritation. Central nervous system effects. Skin irritation and dermatitis. Allergies, including asthma. Known to cause cancer with long-term use.

Methylene chloride. Central nervous system effects. Causes cancer in lab animal tests. Banned since 1989 but may still be found in some sculptured nail products.

1,1,2-trichloroethane or 1,2,2-trifluoroethane. Central nervous system effects. Skin irritation and dermatitis.

Glycol ethers (a generic term for a group of chemicals). Reproductive problems shown in lab animal tests. Possible other effects depending on the specific chemical.

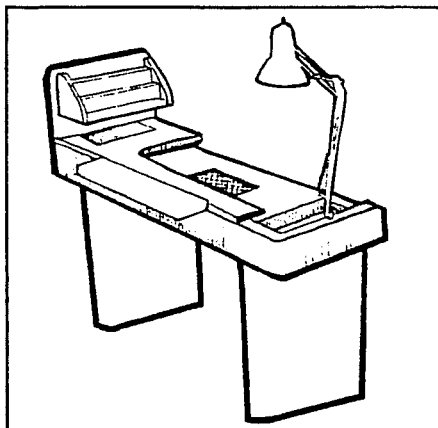
Xylene. Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis. Reproductive problems.

Toluene. Eye, nose, and throat irritation. Central nervous system effects. Skin irritation and dermatitis. Reproductive problems.

Not all sculptured nail products contain these chemicals, and some may contain hazardous chemicals not listed above. Always check the product's Material Safety Data Sheet (MSDS) for more information. Other manicuring products are covered in a separate factsheet.

How can you protect yourself from chemical hazards?

When you work around chemicals, it's important to take steps to protect your health.



Ventilation

- Always work in a well-ventilated area. If there's no ventilation system, open windows and doors to bring in fresh air from outside.
- Use a manicuring table with a built-in ventilation system. The hood pulls dust and vapors away from your breathing area.
- Don't rely on table-top fans. They only blow dust and vapors around the room; they don't get rid of them.



Change what you do

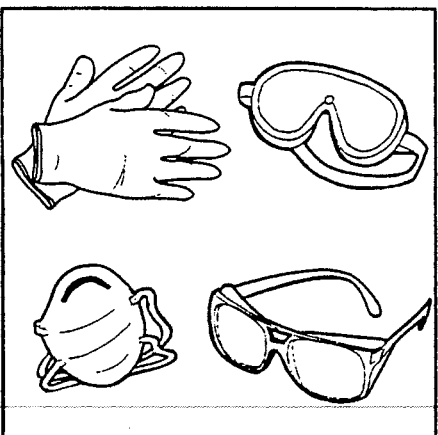
- Keep containers closed when you're not using them so vapors won't get into the air.
- Use specially designed containers that keep vapors out of the air.

Avoid hazardous chemicals

- Don't use products that contain formaldehyde, methacrylates, or methylene chloride.

Don't eat, drink, or smoke in your work area

- Chemicals, chemical vapors, or dust might contaminate your food, drink, or cigarettes.



Use protective equipment

- Wear gloves. Use a type designed to protect your skin from the particular chemicals you're using.
- Wear a dust mask to protect yourself from dust when you file nails. But remember that a dust mask doesn't protect you from chemical vapors.
- Wear safety glasses (with side shields) to protect your eyes from nail clippings.
- Wear safety goggles when mixing chemicals to protect your eyes from splashes.

Thermal Hairstyling



You may work with thermal irons to straighten, press, or curl hair. The different kinds of irons used for these services all have similar health and safety hazards. Tools and equipment used with irons, like combs, can also be dangerous if they get too hot.

What are the hazards of working with thermal irons?

- Skin burns
- Electric shocks

When can you get a skin burn?

- When you heat an iron
- When you use an iron on a client's hair
- When you put an iron away
- When you accidentally touch a hot iron which someone left out
- When an iron falls
- When you touch a comb that is too hot

When can you get an electric shock?

- When an electric iron is old or worn out
- When the cord is old or worn out
- When you touch an electric iron or cord with wet hands

How can you protect yourself?

**When you work with thermal irons,
it's important to take steps to protect your health.**

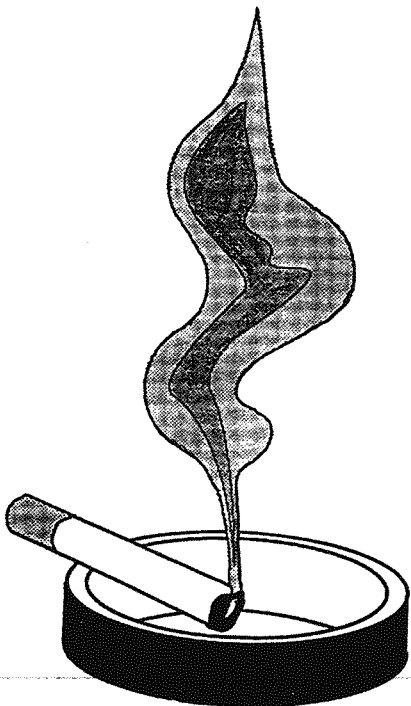
- Don't leave a hot iron where someone can accidentally touch it.
- Be careful when you set an iron in the stove to heat it. Place it where it won't fall.
- Don't put more than one iron in the stove at a time.
- Don't place a cord where someone may trip over it and make the iron fall.
- Discard or repair an electric iron which seems defective.
- Make sure the cord is in good shape and not frayed.
- Disconnect all electrical equipment after you are done with it.
- Don't overload electric circuits.
- Use a three-prong electrical outlet that has a ground wire.
- Don't touch an electric iron or cord when your hands are wet.
- Use combs made of hard rubber or other non-flammable materials. Some combs can burn or melt. Don't use metal combs because they can get very hot.

Smoking and Health at Work



You spend many hours of your life at work. If smoking is allowed in your shop, you may breathe a lot of tobacco smoke, which contains hazardous chemicals. Even if you don't smoke yourself, you're still exposed to co-workers' and clients' smoke. At the same time, you probably breathe other hazardous chemicals from products you use on the job. The combination causes an extra risk to your health. This fact sheet will tell you how smoking at work can affect the health of both smokers and non-smokers. It will also tell you what you can do to protect yourself.

If you smoke, what health hazards do you face?



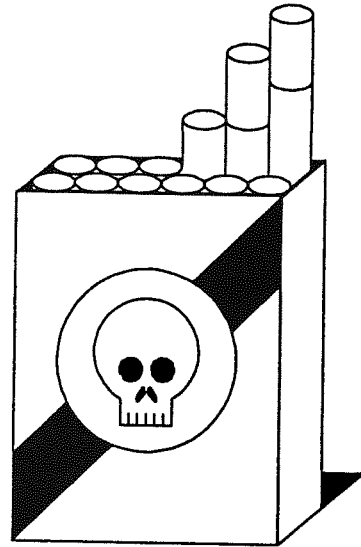
Smoking:

- Increases your chance of lung cancer
- Increases your chance of larynx, throat, and pancreas cancer
- Can make you short of breath
- Can give you emphysema
- Can cause a cough, sore throat, or hoarse voice
- Can harm your fetus if you are pregnant.

Can smoking make you less attractive?

Yes. You might have:

- Bad breath
- Gum disease
- Yellow, stained teeth
- Wrinkles
- Aging of the skin
- Smelly clothes.



If you don't smoke, how can other people's smoke affect you?

- If someone smokes where you work, you may inhale the equivalent of a pack a day of their smoke.
- The smoke from the burning end of someone's cigarette (which you may inhale) contains higher amounts of harmful chemicals than the smoke which the smoker inhales.
- Smoke particles which you may inhale are smaller than those the smoker inhales. Because of this smaller size, they get absorbed deeper in your lungs.
- Breathing in other people's smoke (second-hand smoke) kills about 53,000 non-smokers in the U.S. each year, and makes many more sick. The U.S. Environmental Protection Agency has found that second-hand smoke can cause cancer.
- New studies show that up to 37,000 Americans die each year from heart disease related to breathing second-hand smoke.

Is it more dangerous if you are exposed to both cigarette smoke and other chemicals at work?

Yes. It's more dangerous for smokers, and also for non-smokers who breathe second-hand smoke.



- Tobacco smoke contains some of the same harmful chemicals you may already breathe on the job. For example, formaldehyde, used in some nail polishes and shampoos, is also found in tobacco smoke. If you smoke at work, or if you are exposed to other people's smoke, you get even more of this harmful chemical into your body.
 - Tobacco smoke also damages your lungs' ability to protect themselves against other harmful chemicals.
-
- Some chemicals increase the harmful effects of other chemicals. For example, asbestos and tobacco smoke together in the lungs lead to a much higher chance of lung cancer. (Until 1979 asbestos was used in hair dryers. Some of the older models may still contain asbestos. Contact the manufacturer to ask about the hair dryers in your shop.)
 - For smokers, there is another hazard. If you have cigarettes at work, hazardous chemicals can get on them from your hands or from the air. You can accidentally breathe or swallow these chemicals when you smoke. Then your body gets not only harmful tobacco smoke, but also the other harmful chemicals.

How can you protect yourself and others?

It's important to protect yourself and other people from the hazards of smoking.

If you do smoke:

- Try to quit.
- Smoke only in designated areas or outside.
- Wash your hands before you smoke so you won't contaminate your cigarettes with chemicals.
- Don't keep cigarettes in your work area, where chemicals could get on them.
- Protect yourself from other hazardous chemicals too.



**NO
SMOKING
OR
EATING
PLEASE**

If you don't smoke, but co-workers or clients do:

- Work in a well-ventilated area. Make sure there is plenty of fresh air circulating in the shop.
- Ask the shop owner to consider a no smoking policy. (In some California cities and counties, workplaces are required to be smoke-free.)
- Protect yourself from other hazardous chemicals too.

Remember . . . You have the right to work in a safe and healthy workplace, free of tobacco smoke and other hazardous chemicals.