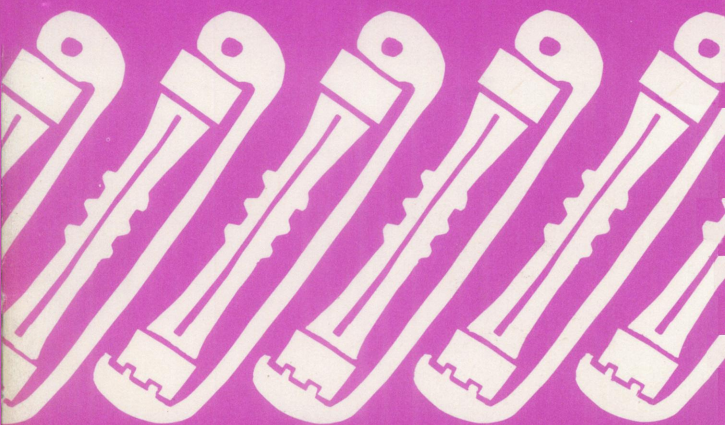
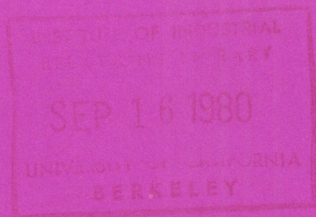


Not Even Your Hairdresser Knows for Sure:

Health and Safety
Hazards for
Beauticians and
Hairdressers



[Calif. University.
IIR(B)CLRE.
LOHP.]

by
Gail Grynbaum

(A Labor
Occupational
Health Program
Publication)

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The **Labor Occupational Health Program** is part of the Center for Labor Research and Education, Institute of Industrial Relations, University of California, Berkeley. LOHP assists workers and labor organizations in developing health and safety programs, develops educational materials, provides technical assistance, and conducts research and education on occupational safety and health issues.

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If You're a Hairdresser . . .

Like many of the half-million people who work in this industry you may be unaware of the potential hazards in your workplace. Most beauticians and hairdressers must spend a large part of the work-day on their feet, handling chemical products such as permanent dyes, bleaches, aerosol sprays, and permanent wave solutions (see chart at back of booklet for a summary of chemical hazards). Stressful working conditions also create health problems, and even the most modern shops are often noisy and poorly ventilated.

Some of the health problems faced by hairdressers, including asthma and skin diseases, are well-documented. But very little research has been done on the industry as a whole, particularly on long-term health effects. So even though some chemicals you use are suspected of effects such as interfering with the ability to have normal children, studies in this area are minimal. Information that is available seldom finds its way to hairdressers because manufacturers provide little information on labels or in packages. And although beauticians and hairdressers are covered by general provision of the Occupational Safety and Health Acts (OSHA), there are no specific standards related to working conditions in the hairdressing industry.

Aerosols

Use of aerosols has been a concern of beauticians for many years. Both scientific studies and the experiences of hairdressers have shown that aerosols affect the respiratory system (nose, throat, air-tubes, lungs). Although fewer aerosols are used now than in the past, they are still common in many hairdressing shops.

The three main parts of aerosol sprays are the propellant, the solvent, and active ingredients. Vinyl chloride was used as a propellant in many hair sprays until 1974 when it was banned due to reports of a rare liver cancer in industrial workers exposed to the compound. There is also some evidence that

vinyl chloride may cause birth defects in children whose parents were exposed, but scientists have not studied beauticians to see if there is any evidence of such effects.

Other common propellants in hair sprays were Freon or other fluorocarbons. Like vinyl chloride, these substances were banned as propellants (April 1979) primarily because they were thought to be shrinking the ozone layer of the earth's atmosphere. Ozone prevents excessive levels of ultraviolet radiation from reaching the earth's surface, and thus is a protection against skin cancer linked to this form of radiation.

Most other ingredients of hair sprays, with their complex combination of chemicals, have never been well-tested to determine their long-term effects on consumers or beauticians. But some studies have shown that even short-term exposures to aerosols affect tiny hairs, called cilia, in human airtubes. The beating action of these tiny hairs keep dusts from settling in the airtubes or from reaching the lungs. Aerosols destroy the cilia in much the same way as cigarette smoke.

Certain hair sprays contain resins to hold hair in place. These resins have been suspected of building up in the lungs and causing a disease called "thesaurosis," although there is disagreement among scientists about this.

One study of lung disease in beauticians showed that women who were practicing beauticians (the group with the longest exposure) had twice as many symptoms of lung disease as hairdressing students. Cosmetologists in small salons had the greatest risk of lung disease.

The Hair Dryer Dilemma

In April, 1979, the Consumer Product Safety Commission (CPSC) reported that more than 100 models of hand-held hair dryers contained asbestos. Later reports said that many of the older bonnet-type dryers in beauty salons also had asbestos linings. Asbestos, a flaky white mineral used as an



insulator in dryers, can be blown into the air when the dryers are used. The age and wear of the insulation material determines how much asbestos is actually released. Long-term exposure can cause a disabling lung disease called "asbestosis." Asbestos exposure has also been linked to cancer of the lungs and lining of the chest and abdominal cavity. Smoking greatly increases the risk for developing lung cancer associated with asbestos.

The stationary dryers probably create more danger for beauticians because most are older than blow dryers. Although the CPSC has issued warnings on hair dryers they have tested and found to contain asbestos, there still may be a problem. It takes many years for asbestos diseases to develop, and no one knows how high beautician's exposures have been. Also, some shops may not be aware of all the types of dryers that have asbestos (see list at end of bonnet types that have had asbestos linings), and not all dryers have been tested.

You can check with the CPSC to find out if any dryers used in your shop have asbestos (Call the

toll free number: 800-638-8326). If you think any of the dryers **do** have asbestos:

- **Do not try to remove asbestos by yourself.**
You can get a high exposure by ripping it out.
- Take the dryer to a small appliance dealer to have it removed.
- Write to the manufacturer. More than 30 companies are withdrawing dryers from the market and replacing those already purchased with asbestos-free dryers.

If you are worried about any asbestos-related disease, call or write to:

California

Occupational Health Clinic (415) 821-8324
San Francisco General Hospital
San Francisco, CA 94110

Western Institute for (415) 845-6476
Occupational and Environmental Health
2520 Milvia
Berkeley, CA 94704

Labor Occupational (415) 642-5507
Health Program
2521 Channing Way
Berkeley, CA 94720

Elsewhere

Chicago Area Committee on (312) 939-2104
Occupational Safety and Health
Room 502
542 S. Dearborn St.
Chicago, Illinois 60605

Philadelphia Area Committee (215) 568-5188
on Occupational Safety and Health
Room 201
1321 Arch Street
Philadelphia, PA 19107

Urban Planning Aid, (617) 482-6695
Occupational Safety and Health Project
120 Boylston Street
Room 524
Boston, MA 02116

Beauty Products May Be More Than Skin Deep . . .

Skin problems are the most common job-related disease among beauticians, and sometimes become so bad that the beautician has to change to another occupation. Skin reactions occur with many of the products that beauticians commonly come in contact with. The products showing the most frequent reaction are:

chemical hair removers	eye cream
hair spray	hair color/lighteners
mascara	nail polish

The reactions include allergic and contact dermatitis, breakage of hair and nails, color change of skin and nails, irritation of the hair follicles, and acne.

Allergic contact dermatitis is the most common reaction. Over a period of time the skin becomes sensitive to certain products and contact with them causes a reaction (usually dry, scaly skin). Perfumes, emollients and preservatives found in many beauty preparations are usually the chief causes of the dermatitis.

Skin reactions may also be caused by simple irritation, when the skin contacts substances such as hairdyes, depilatories, permanent wave solutions, nail polish removers, and cleansers.

Hairstylists also describe skin problems that result from tiny pieces of hair burrowing under the skin, nicks and cuts from scissors followed by infection, and skin burns from chemicals such as sodium hydroxide (lye).

And one animal carcinogen (also a suspected human carcinogen), **dioxane**, which is formed as a contaminant during manufacture of cosmetic ingredients, has been found in some shampoos, eye shadows, and skin lotions. The FDA is urging raw material suppliers to use only dioxane-free materials as cosmetic ingredients.

To protect yourself from skin problems:

- Stop using whatever you think is the culprit, or at least wear protective gloves while using it;
- Consult a skin specialist (dermatologist) if the problem continues or is severe;
- Read all labels and ask sales representatives for ingredient information;
- Always check with co-workers to see if they are experiencing similar problems.

Cancer Comes in Many Colors: Hair Dyes

Of the many health hazards beauticians face, hairdyes are one of the most serious. In 1979 alone, 400 million dollars were spent on hairdyes mostly made by Clairol. What is the concern? For several years, hairdyes have been considered potential threats to the health of consumers and beauticians. In 1975, studies of certain permanent hairdyes showed that 89% caused genetic changes (mutations) in bacteria. These results are alarming because scientists strongly suspect that: 1) chemicals that cause mutations in bacteria can do the same in people, and 2) chemicals that cause mutations can also cause cancer. **Chemicals that cause mutations may affect a man's or woman's ability to have normal children.**

The chemicals of main concern in hairdyes belong to a chemical family, coal tars, certain members of which were shown to cause bladder cancer nearly 40 years ago. Yet these dyes are not regulated by the Food and Drug Administration (FDA). One particular substance used in the permanent hairdyes, 4-MMPD, has caused skin, lymph, and thyroid cancers in laboratory animals. Because of the cancer-causing potential of this dye, the FDA recommended in 1978 that all hairdyes containing 4-MMPD be labeled: "Warning—contains an ingredient that can penetrate your skin and has been determined to cause cancer in laboratory animals." Some manufacturers of 4-MMPD dyes fought the labeling requirement by changing one of the chemi-

cal ingredients. This led many consumers and hairdressers to believe the hairdye “problem” was all cleared up.

This is in fact **not** the case. 4-EMPd, the dye ingredient which some manufacturers have used as a substitute has already been tested and shown to cause genetic damage in bacteria tests. However, the FDA can’t propose warnings on 4-EMPd until it completes expensive tests that could take up to four years. Although there is controversy about whether or not certain hairdyes cause cancer in humans, the animal tests indicate that there is reason to be concerned. And, it’s important to remember that the warnings about hairdye use were primarily aimed at consumers who may use hairdyes once every month or two, while beauticians may apply these products on a daily basis.

Remember, the best way to ensure you are protected against exposure to these substances is not to use them. But if you must apply these products:

- Read all labels (however, while cosmetics manufactured for home use must list ingredients, those intended for professional application don’t have to); request information from suppliers.
- Substitute vegetable dyes such as henna whenever possible.
- Use all chemical products in well-ventilated areas. If there is no vent system at least open doors and windows.
- Always wear gloves when applying dyes.

Are There Other Problems ?

In addition to chemical exposures beauticians also face other job-related hazards. Standing for a long time as most hairdressers do, is linked to frequent complaints of varicose veins, and extreme fatigue in the leg muscles. And constant attention to the demands of a customer, plus a demanding workpace, often with no scheduled breaks, create a stressful job situation.

The hairstylist is constantly expected to perform at

his/her best on a one-to-one basis with customers. It is not easy to be artist and psychiatrist, yet produce an assembly line of "heads" at the same time. As in most jobs where dealing with the public is involved, verbal abuse is common. For most hair-stylists the pay is low, and in many of the more modern shops, unending loud music adds to the overall stress level. Increased participation in workplace decisions and an increase in "break" time are two possible remedies for the stressful job situation faced by beauticians.

Are There Special Problems for Women?

One study on the health care of working women showed increased toxemia of pregnancy (high blood pressure, protein in the urine, and leg swelling), miscarriages, premature delivery, and delivery of smaller babies, among hairdressers and beauty culturists. And another unpublished study has shown that practicing beauticians, especially with a history of working in a beauty shop during the first 3 months of pregnancy, smoking, and a past history of pregnancy problems, have a significant risk of spontaneous abortions and premature deliveries.

And with increased concern about the safety of hair-dyes, **Consumer Reports** makes the following recommendation: "The safety of hairdyes has been widely questioned. If you're pregnant, or of child-bearing age, CU's medical consultants advise you to avoid hairdyes entirely. The ability of many coal-tar chemicals (**4-MMPD is just one example**) to cause mutations is well-established. Since the chemicals readily penetrate the scalp and enter the bloodstream, all parts of the body, including the developing fetus, risk exposure to them. In addition, mutations in the immature eggs of a woman's ovaries could be transferred to future generations."

Does this mean male hairdressers should be unconcerned? No, because chemicals that affect the egg may also affect the sperm. If the sperm are injured by toxic chemicals, the result may be birth defects in children or sterility in the male. Therefore, it

should never be assumed that simply removing women from exposure to a chemical known to affect reproduction will prevent problems associated with pregnancy or birth defects in future children.

Where Can You Get Help?

Throughout this pamphlet you've been given suggestions for action to prevent and control job related health problems. There are groups working throughout the country as well as written materials that can serve as additional resources. To look up chemicals you work with:

Toxic Substances Regulated by OSHA:

A Guide to Their Properties & Hazards,

is an alphabetical listing of over 400 OSHA-regulated toxic substances; it contains information on properties, uses, bodily effects, and physical hazards. 49pp/pb, \$2.75. From Labor Occupational Health Program, 2521 Channing Way, Berkeley CA 94720.

Work is Dangerous to Your Health,

Jeanne Stellman, Ph.D. and Susan Daum, M.D. Vintage Books, c. 1973, \$2.95.

How Aerosols Can Affect Your Health,

a 60 page manual available from the Center for Science in the Public Interest.

Legal Help:

California Department of Occupational Safety
and Health

455 Golden Gate Avenue
San Francisco, CA 94102
(415) 557-1946

OSHA
200 Constitution Ave., NW
Washington, D.C. 20210

Other State OSHA Programs—check under State
Offices in phonebook

**Hairdyes:**

Food and Drug Administration
50 UN Plaza, Rm. 524
San Francisco, CA 94102

Environmental Defense Fund
2602 Dwight Way
Berkeley, CA 94720

Health Research Group
2000 P Street, NW
Washington, DC 20036

General Information:**California**

Labor Occupational Health Program
Center for Labor Research & Education
2521 Channing Way
Berkeley, CA 94720

Public Media Center
25 Scotland St.
San Francisco, CA 94133
(415) 434-1403

Occupational Health Project
Center for Labor Research & Education
Bunch Hall
University of California
Los Angeles, CA 90024

Western Institute for Occupational &
Environmental Studies
2520 Milvia
Berkeley, CA 94704

Elsewhere

Chicago Area Committee on Occupational
Safety and Health
Room 502
542 S. Dearborn St.
Chicago, Illinois 60605

Philadelphia Area Committee on Occupational
Safety and Health
Room 201
1321 Arch Street
Philadelphia, PA 19107

Urban Planning Aid, Occupational Safety
and Health Project
120 Boylston Street
Room 524
Boston, MA 02116

Labor Education Programs at many state uni-
versities have OSHA Programs—check the one
in your area.

Medical Help:

The Occupational Health Clinic
San Francisco General Hospital
San Francisco, CA 94110
(415) 821-8324

This clinic, staffed with medical, industrial
hygiene and legal experts, can help evaluate
work related health problems.

Elsewhere

CALCOSH, PHILAPOSH, and UPA—see above for
addresses

Chart of Chemical Hazards

POSSIBLE INGREDIENTS

EFFECTS

Depilatories

Sodium and Calcium Hydroxide

Irritation—skin, eyes
respiratory system

Sodium Thioglycolate

Irritation and softening
of skin

Hair Lighteners

Ammonium Hydroxide

Skin irritation

Hydrogen Peroxide

Skin and eye irritation

Hair Rinse (wash-out)

Benzyl Alcohol

Steralkonium Chloride

Polyacrylamide

Dyes such as
Direct Black 1,
Acide Orange 24, etc.

No information
available

Hair Spray

Methylene Chloride

Irritation—skin, eyes
Narcotic *

Vinyl Acetate

Skin irritation

Diethyl Phthlate

Irritation—skin, nose
throat
Narcotic in high
concentrations

Nail Polish

Benzyl Alcohol

Irritation—skin, eyes
throat
Headache, nausea

Acetone

Skin irritation
Headache

Toluene

Skin irritation
Dizziness
CHRONIC: liver disease

Ethyl Alcohol

Dizziness in high
concentrations

POSSIBLE INGREDIENTS

EFFECTS

Nail Polish Remover

Acetone	See Above
Toluene	See Above
Ethyl Acetate	Irritation—skin, throat mildly narcotic
Butyl Stearate	Animal experiments suggest low toxicity— not much information available

Permanent Hairdyes

4-MMPD	Skin irritation
Direct Black 38	Cancer in laboratory animals
4-amino-2-nitrophenol	
4-MMPD sulfate	
2-nitro-p-phenylene- diamine	
2-nitro-p-phenylene diamine sulfate	
p-aminophenol	Contact dermatitis Bronchial asthma Methemoglobinemia (lack of oxygen in blood due to chemical change)
4-EMPD	Irritation—skin, eyes
Resorcinol	Methemoglobinemia Restlessness

Numerous other chem-
icals which have not
been tested for health
effects

Permanent Wave Solutions

Ammonium Hydroxide	See hair lighteners
Hydrogen Peroxide	
Phosphoric Acide	Irritation—skin, eyes, respiratory system

Wig Cleaners

Carbon Tetrachloride	Irritation—skin, nose, throat
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Salon-type Dryers Containing Asbestos

NAME

MODEL NUMBER

General Electric

Portable Professional	UH-20 HD-55
Salon Style Speed	HD-30/UH31
Salon Style	HD-56, HD-54, HD-52 HD-51
Salon Style Mist	HD-63/63SS
Super Speed Salon	HD-63SS/5063-008
Salon Style Mist	HD-53

National Presto Industries

Professional Hood	PP18A
Mist Hood	PP19A, PP19B

Shick Incorporated

Salon Type	307, 315, 316, 317 320, 321, 322
Hatchet Type	339, 340

Westinghouse Electric Incorporated

Salon Type	PHD-74-1 PHD-84-1 PHD-94-1
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IR-34
Institute of Industrial Relations
Labor Occupational Health Program
University of California
Berkeley, California 94720

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