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A PROGRAM OF THE FOUNDATION FOR WORKER,
VETERAN AND ENVIRONMENTAL HEALTH, INC.

WOMEN IN SERVICE AND TEXTILE INDUSTRIES

Materials are assembled in the following order:

- * Women's employment in the service occupations
- * Cosmetology: is beauty a risky business?
- * Does she or doesn't she?" questions for cosmetologists
- * The many hazards of waitressing
- * For women who work in the home
- * Child care - essential for parents, hazardous for workers
- * Hazards for laundry workers
- * Meat processing: a dangerous industry
- * Working with animals
- * Bus driving: exhaustion and exhaust fumes
- * Health facts on the textile industry

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Women's Employment in the Service Occupations 1980

Occupation	Total Employed**	% Female
Private household workers		
Child Care Workers	399,000	96.9
Cleaners & Maids	550,000	95.8
Food		
Waiters & Waitresses	1,367,000	84.0
Waitress Assistants	350,000	40.1
Cooks, except short order	1,553,000	51.3
Food counter workers	333,000	79.5
Kitchen workers (preparation)	134,000	74.8
Health		
Dental Assistants	168,000	99.0
Aides, except nursing	350,000	85.6
Nursing aides, attendants	1,242,000	89.9
Cleaning and Building Services		
Maids	563,000	83.5
Janitors and cleaners	2,049,000	29.4
Personal Service Occupations		
Hairdressers & cosmetologists	707,000	89.9
Public transportations	65,000	78.8
Welfare Service Aides	82,000	92.6
Child care workers (not private household)	738,000	96.1

** Many of these figures are underestimates because significant numbers of women are employed in the service industries, but their wages and hours are not reported to state and federal authorities.

WOHRC FACT SHEET



WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER NEWS

SCHOOL OF PUBLIC HEALTH

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Cosmetology: Is Beauty a Risky Business?

Union Petitions for Labelling; FDA Cites High Risk

Almost 300,000 people, the great majority of them female, are employed as cosmetologists or barbers. In recent years several studies have found cosmetologists to have elevated rates of breast, digestive system and respiratory cancer, as well as an increased incidence of miscarriages and premature births. In addition, the toxicity of individual chemicals used in cosmetics, such as formaldehyde and methylene chloride is well established.

While manufacturers must provide the ingredients of beauty products used by consumers, products for commercial use in salons and barber shops are generally unlabelled. The United States Court of Appeals has recently ruled that ingredient labels be required for all industries under OSHA's Hazard Communications Standard, but OSHA has not yet extended this standard to cover the beauty industry.

Union Petitions for Labelling

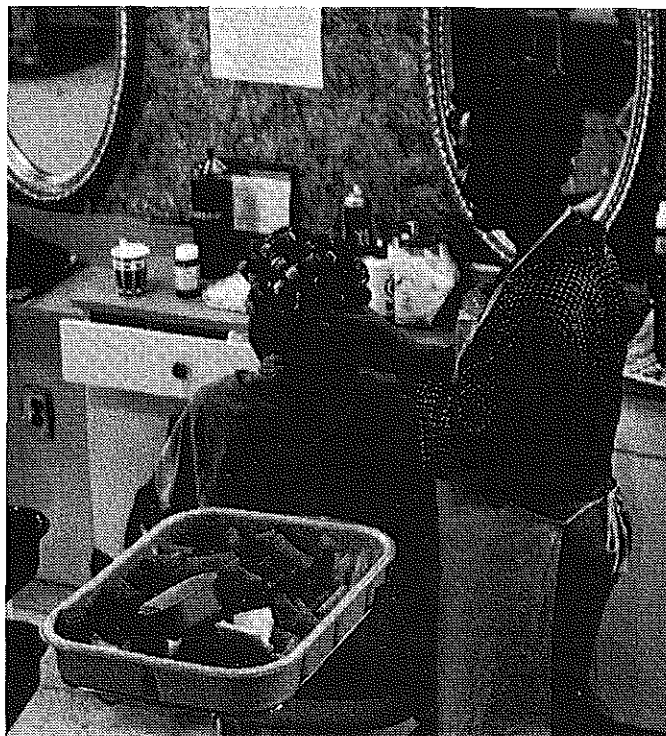
The United Food and Commercial Workers Union (UFCW), which represents 40,000 barbers and cosmetologists petitioned OSHA in February 1986 to require that manufacturers label all cosmetic products with their ingredients. The UFCW has also petitioned the Food and Drug Administration, FDA, for a ban on methylene chloride, a commonly used propellant in cosmetics (see p.5) and for investigation of formaldehyde and nitrosamines, commonly used cosmetics preservatives which have been associated with a variety of toxic effects, including cancer.

Some industry experts agree with the need for ingredient identification arguing that "labeling professional product ingredients will not only help stylists, but will also help clients. If, for example, a client has an allergic reaction and a doctor suspects the allergy may come from one of the beauty treatments, (the cosmetologist) can immediately tell the doctor what's in the shampoo, perm, etc.," according to the trade journal *Cutter Hotline*. The stylist can also make intelligent substitutions of products with less toxic substances, the journal points out.

FDA Ban on Methylene Chloride

The FDA proposed a ban on the use of methylene chloride as an ingredient in aerosol cosmetic products in December 1985, citing several toxicological studies which established that inhalation of the chemical causes chemicals in laboratory test animals. In its proposed ruling, the FDA notes that "hair care

(continued)



Cosmetologists can be exposed to a wide range of occupational hazards, such as nickel and other heavy metals in dyes and shampoos. Metals can cause serious allergic skin conditions. Continually wetting the hands during shampoos or cutting wet hair also makes the skin even more susceptible to chemicals and to cuts from instruments and human hair itself. It permits easier entry of chemicals into the body through the skin.

Hair dyes can contain chemicals associated with cancer. Many products are used in aerosol form which makes their inhalation and penetration into the lungs more likely. Some preservatives, which inhibit microbial growth in the cosmetics, are toxic and even carcinogenic. Formaldehyde and nitrosamines are two examples.

Chemicals aren't the only occupational hazard for beauty industry workers who spend many hours standing or in other work postures which stress the body. The delivery of personal services to the public is also stressful, particularly where there may be problems "pleasing" the customer. Heavy time pressures are common during busy work periods like Saturday mornings.

Cosmetology Risks (cont'd.)

specialists represents the groups with the highest exposure level from aerosol hair sprays."

The Agency cites published data showing that consumer use of a spray for 5 seconds will cause 50 parts per million of methylene chloride to remain in the breathing zone for 5 to 10 minutes after spraying. This study was carried out by researchers at Dow Chemical and Alberto Culver companies. Cosmetologists would be exposed for far greater lengths of time.

"For the hair specialist, the lifetime (cancer) risk is 1 in 100 to 1 in 1000" according to FDA estimates.

When the FDA calculated the risk based on the cancer induction rate observed in mice exposed to 2,000 parts per million of methylene chloride, it estimated that the lifetime cancer risk for cosmetologists is between 1 in 100 to 1 in 1000. (Using the same calculation for consumers, the risk was calculated to be between 1 in 1,000 to 1 in 10,000.)

Aerosols: a particular hazard

The FDA notes in its analysis that the "risks are relatively high" for hair stylists not because methylene chloride is a particularly potent carcinogen but because the exposures from aerosol uses are high.

Other aerosols will also pose special hazards. For example, the Cosmetics Ingredient Review Expert Panel, a cosmetics industry sponsored group, has concluded that while formaldehyde is safe for use as an additive in low concentrations to lotions and other cosmetic products, it "cannot be concluded that formaldehyde is safe in cosmetic products intended to be aerosolized."

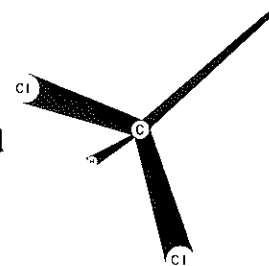
Cancer risks from aerosolized hairsprays are not new. Vinyl chloride was a very popular "inert" propellant previously used for this purpose until it was found to be a human carcinogen when a cluster of liver cancers was discovered among vinyl chloride manufacturing workers. It is no longer used as a propellant.

Eliminate aerosols for safety

One method that has been recommended by WOHRC and other experts for minimizing aerosol hazards is to substitute hair setting lotions or manually propelled sprays. If aerosols are considered necessary, then stylists should try to obtain sprays that utilize carbon dioxide propellants. Care should be taken to avoid spraying the customer's eyes. All cosmetic products should be used in well ventilated spaces.

Other prudent chemical safety precautions include wearing gloves when applying dyes, permanent waving lotions and hair straightening chemicals. Wherever possible safer substitutes, such as vegetable dyes for chemical ones, should be used. The UFCW and WOHRC have made specific suggestions which are available from WOHRC. Labelling would, of course, assist the cosmetologist in making these choices.

Methylene Chloride: OSHA Guide and Toxicology Data



A set of guidelines on health hazards and methods for controlling methylene chloride were issued in March by OSHA as its response to a request for a health hazard alert and emergency temporary standard from the United Auto Workers and six other unions. The UAW cited recent National Toxicology Program (NTP) data showing the chemical's carcinogenicity. (These data are the basis of proposed FDA banning of methylene chloride in aerosols. OSHA critics this as a more appropriate and stringent agency response.)

The following is among the information contained in the guidelines:

Metabolism: The body handles methylene chloride by at least two pathways. The first produces highly reactive intermediates, such as formaldehyde, known to interact with genetic material and proteins. The second pathway produces carbon monoxide and carbon dioxide. The carbon monoxide will bind to hemoglobin, forming carboxyhemoglobin, which can have serious effects on the heart and circulatory system. Levels 2 to 3 times those of a one pack per day smoker have been found after methylene chloride exposure.

Human Effects: No conclusive epidemiological data on human cancer is available, although some studies have been published. An excess risk for hypertensive heart disease was found among exposed Eastman Kodak workers. At high concentrations it is also irritating and has a narcotic effect.

Animal Studies: Several studies have established methylene chloride to be an animal carcinogen.

Likely Exposure Situations: Approximately 235,000 tons/yr produced. 25% is used in paint stripping operations. Women workers are likely to be exposed in the electronics industry where it is used in printed circuit board manufacture. These aerosol products contain methylene chloride: hair sprays, cleaners, room deodorants, herbicides and insecticides. Many female dominated occupations and women who work in the home will be exposed.

Control: Ventilation, both local and exhaust, and product substitution are the two best methods for eliminating exposure. Lower temperatures will reduce air concentrations.

A complete set of references on methylene chloride and copies of the FDA memoranda are available from WOHRC. Order form on page 5.

"Does She or Doesn't She?"

Not only hair dyes but waving lotions, aerosol sprays,

"For hundreds of thousands of hairdressers and barbers," the magazine, *Job Safety and Health*, wrote recently, "the health question of the year has become: 'Does she or doesn't she . . . ' face the threat of cancer by handling hair dyes? The answer that 'only her hairdresser knows for sure' could not be further from the truth. No one knows for sure."

The magazine went on to discuss the evidence about hair dyes and cancer that continues to trouble both professionals and hair-dye users. But cancer is only one of the most disturbing of the health hazards that may threaten barbers and cosmetologists. Hair dyes can also cause genetic mutations. Aerosol sprays can cause eye and lung damage; permanent wave lotions can be poisonous; shampoos and nail polishes can be allergy producing; and formaldehyde, used in thousands of beauty products, can cause respiratory difficulties and, perhaps, also, cancer.

Hair dyes

In the 1970s, Dr. Bruce Ames, a biochemist at the University of California in Berkeley, developed a now-famous short-term test which can show whether chemicals cause gene mutations in bac-

teria. In 1975, Dr. Ames and some colleagues subjected to the test 18 chemical ingredients found in 150 of 169 selected hair dye products. Nine of the chemicals in all 150 dyes proved mutagenic.

The tests are significant for humans because, whether it comes from bacteria, mice or men, genetic material is made of the same stuff. Chemicals that cause mutations in bacteria may change genetic information in human sperm and eggs. Scientists are now researching whether this can lead to sterility and birth defects.

In addition, many chemicals that cause mutations also cause cancer. Researchers have found about a 90 percent matching ratio between chemicals that damage genes and those that cause cancer in laboratory animals. And although hair dyes themselves have not been *proved* to cause cancer in humans, some of the chemicals in them are found to be cancer-causing in the laboratory.

One particular substance — 4-methoxy-m-phenylenediamine (4-MMPD), also known as 2,4 diaminoanisole (2,4 DAA) — which was used commonly until a few years ago, proved to be so carcinogenic in laboratory tests that the Food and Drug Administration (FDA) recommended in 1978 that all dyes containing the chemical be labelled with a warning to consumers. It was then that the major hair dye manufacturers removed it from their products.

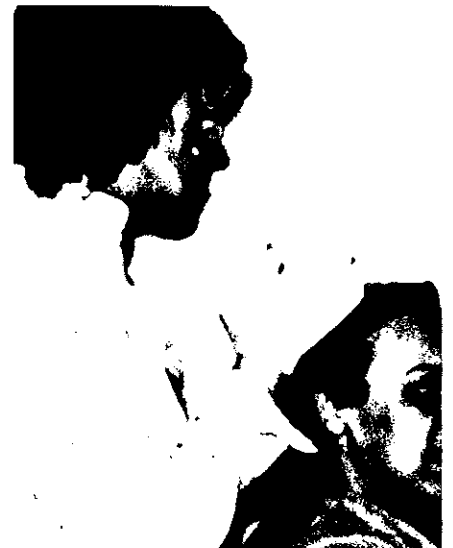
However, its replacement, 4-EMPD — still being tested by the FDA — has already been shown to cause genetic changes in bacteria, while a list of sixteen other hair dyes have tested as carcinogenic and eleven as having mutagenic ingredients.

The hair dye industry has challenged all these tests by pointing out that in the laboratory, hair dyes are fed to animals, rather than applied to their skins, which would more closely approximate their use in humans — and that a person would have to drink up to twenty-five bottles of dye a day to achieve the effect of the dyes fed to laboratory rats.

The answer to this is that a chemical absorbed through the skin and into the bloodstream has the same effects as one which enters the bloodstream from eating. The Environmental Defense Fund,



Hair dryers should be handled with care, their wiring checked regularly.

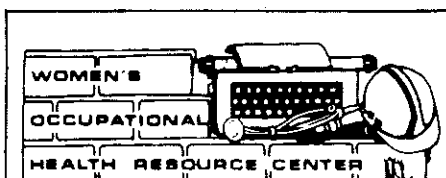


Rubber gloves should always be used in hair dyeing, waving and straightening.

in a report on hair dyes, pointed out that:

"Animals are fed high doses for three reasons: to compensate for the short life span of animals compared to humans, to compensate for the very fast metabolizing and excreting of chemicals by animals compared to humans, to compensate for the relatively small number of test animals used compared to the number of human beings exposed to the chemical."

Scientists generally agree that a carcinogen at high exposure levels will still be a carcinogen at low levels, except that fewer of those exposed to it will develop the disease. It is also generally agreed by scientists that any substance



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(Subscription information on page 6.)

Questions for Cosmetologists

shampoos and nail polish can pose health hazards

that causes cancer in animals is likely to cause it in humans.

Studies of humans exposed to hair dyes are still incomplete and inconclusive.

It should be noted here that the FDA, although it may do so with other manufacturers under its jurisdiction, has no legal authority to force cosmetic concerns to test their products before they are put on the market. All of the burden of proof is upon the agency.

Cancer and mutations, however, are not the only potential hazards involved



Naomi Barke

Even shampoos can pose hazards. NDELA, in some, can cause cancer in laboratory rats.

in using hair dyes. Skin irritations and allergic reactions also occur. Medical problems caused by hair coloring products alone sent an estimated 1,500 persons to hospital emergency rooms during 1977. Three hair dye ingredients — ammonia, hydrogen peroxide and p-phenylenediamine (PPD) — seem to be the major culprits, and one or another can be found in over 75 percent of all hair-coloring products.

Although the so-called permanent dyes are potentially the most dangerous, semi-permanent and even some temporary dyes may also pose hazards. Some temporary dyes contain lead, which is toxic.

Permanent waving

The main ingredients in waving lotion — ammonium thioglycolate and calcium thioglycolate — are so corrosive that they can damage fabrics and metals as well as skin and hair. They can be poisonous if swallowed in even small quantities and, if they get into the eye, can cause blindness.

The use of detergents in waving lotions seems to increase the skin-penetrating abilities and toxic consequences of thioglycolates.

Hair straightening

The most dangerous chemical hair straighteners are those made with sodium hydroxide. Although they have been largely replaced by the bisulfite straighteners introduced in 1966, they are still widely used in beauty parlors. Sodium hydroxide is so corrosive that it is an important ingredient in drain cleaners. It can do damage to skin and scalp, and can blind.

Bisulfite straighteners are much less caustic, but the safest way to straighten hair is still the old heat-pressing method.

Aerosol Sprays

Aerosol sprays are much more hazardous than non-aerosols and should be avoided whenever possible. Aerosols may cause eye damage and — in some people susceptible to lung irritations — thesaurosis, a disease characterized by shortness of breath and reduced lung capacity.

Aerosols can produce particles so fine that they penetrate all the normal defenses of the respiratory system. In one study of 200 heavy aerosol-spray users, precancerous cell changes were found in the lung tissue of every single person studied.

Other cosmetics

Most professionals have seen skin rashes caused by cosmetics, but even more serious problems can be caused by long-term exposure to several of the chemicals found in them. NDELA, a chemical most recently discovered in shampoos as well as in other cosmetics, belongs to a class of chemicals called nitrosamines which have proved very carcinogenic in animal tests.

A health and safety checklist for barbers and beauticians:

- Always wear rubber gloves when using hair dyes, permanent waving lotions and hair straightening chemicals.

- Never eat or smoke when using any of the above.

- Never touch your face or rub your eyes with your gloves while applying waving or straightening lotions.

- When dyeing, substitute vegetable dyes, such as henna, whenever possible. Avoid temporary dyes containing compounds of copper, cobalt and lead; lead acetate is particularly dangerous. Remember that bleaching is safer than chemical dyeing and that blonding is safer than using darker tones. Investigate new coloring techniques that have been devised to avoid dangerous dyes.

- In waving, substitute neutralizers containing bromates with ones containing hydrogen peroxide.

- In straightening, try to avoid using products that contain sodium hydroxide. Use a bisulfite product instead.

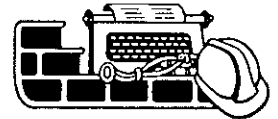
- Avoid using aerosol sprays whenever possible. Substitute hair setting lotions, which are the safest, or non-aerosol sprays. If you must use an aerosol, find one with a carbon dioxide propellant, avoid spraying in your or the client's eyes and try not to inhale the spray. Make sure your place of work has good ventilation.

- In using a hair dryer, don't touch hot parts; don't plug in or turn off with wet hands; don't cover the air vents. Have the wiring checked regularly. You can get a list of dryers that still contain asbestos from the Consumer Product Safety Commission, Washington, D.C. 20207.

This article was largely adapted from a Special Report for Barbers and Cosmetologists prepared by the Health and Safety Program of the Food and Beverage Trades Department of the AFL-CIO. For a single, complimentary copy of the full 25-page report, which includes references to the studies noted, write to: Health and Safety Program, Food and Beverage Trades Department, AFL-CIO, 815 Sixteenth Street N.W., Washington, D.C. 20006.

WOHRC FACT SHEET

WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER



The Many Hazards of Waitressing

Waiting on table — one of the most traditional of women's jobs — is frequently hot, hurried and harried. But waitressing also involves health hazards that are not so easily apparent. The list ranges from air pollution to stress from sexual harassment. One recent survey of 130

occupations by the National Institute for Occupational Safety and Health found that waiters and waitresses ranked second in mental health problems.

This is a breakdown of some of the outstanding hazards of the job, and some suggestions for dealing with them.

Lifting

Continual lifting of heavy trays of dishes can do damage to the muscles and ligaments of the back. Once a ligament is torn, it becomes scarred and is more prone to injury a second or a third time.

In lifting heavy objects, it is good to remember that your main strength lies between your shoulders and your knees. It may look elegant to carry a tray with one hand, shoulder level, but it is far safer to carry it inelegantly with two hands, waist-level, forearms close to the body and elbows down. Very heavy trays — those over 30 pounds — should be divided into more manageable parts or wheeled in on serving carts. Stands on which to rest trays while serving are also good, but there should be enough room around the tables so that these do not obstruct traffic flow.

When lifting a heavy tray, push up from the knees, using less easily injured leg, not back muscles. Lift the load slowly in a continuous movement, avoiding fast, jerky motions. Take the same care when putting it down.

Foot care

Waitresses should insist on comfortable, non-slip, low heeled shoes for work. High heels worn consistently can throw the body off-balance, contributing to fatigue, poor circulation, leg cramps and lower back pain.

Infections and skin diseases

Infections can arise from a variety of sources including dirty dishes, foods and contact with customers with colds and coughs. Some of these are hard to prevent, but maximum good housekeeping in restaurants can lessen sources of infection. If dishes and work surfaces are cleaned frequently, it is also possible to

avoid the use of strong cleaning solutions which can cause skin irritations.

A recent survey of leading occupations for skin disease found hotel and restaurant work placing sixth. In addition

to cleaning solutions, substances which can irritate the skin include some foods, such as fish, fruits, vegetables, cinnamon and vanilla which produce allergies in some people. Prolonged wetting of the hands can also lead to skin problems.

The best prevention for skin irritations is good hygiene — frequent washups with a mild soap, followed by use of a lanolin-containing lotion to replace natural skin oils and fats that may be lost.



Mary Sue Hemlin

The health hazards of waitressing range from air pollution to stress.

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Temperature changes

Both too-hot and too-cold environments are sources of stress to the body. A waitress alternating between a hot kitchen and an air-conditioned dining

room may be subjecting herself to both of these. Waitresses should work with other restaurant employees to ensure that kitchen temperatures and humidity be kept as low as possible. Many kitchen workers experience temperatures over 90 degrees F, a heat level that causes undue stress. Humidity from cooking steam and dishwashers only aggravates the problem. Hoods, exhaust fans and air ducts are recommended on and near vapor-producing appliances.

Air pollution

Air pollution in restaurants can come from:

- Carbon monoxide from cigarette smoke and improperly ventilated stoves, ovens and charcoal broilers. This chemical asphyxiant robs your body of needed oxygen and can cause headaches, nausea and dizziness.

- Carbon dioxide from insufficient



Burns are a constant hazard.

fresh air. This can also cause headaches, nausea and dizziness.

- Smoke and dusts from powders, burning substances and cigarettes. These can cause eye and throat irritation, coughing and, if particularly heavy, lung disease.

- Microbes (bacteria, fungi and viruses) from cooling water used in the ventilation system. These can cause colds, influenza and such infectious diseases as Legionnaires' Disease.

- Oxides of nitrogen from cooking gas and stoves can cause watery eyes and irritation of the respiratory system.

Most modern ventilation systems are designed not to remove pollutants, but simply to supply and circulate fresh air. They may reduce the level of pollution to safe levels, but only if functioning properly. Special scrubbers or filters may be needed if air pollution is high.

To find out if your workplace has adequate ventilation, check to make sure there are air ducts and vents in the walls or ceiling. You can tell if the system is on by holding a tissue up to one and seeing if it moves. The air exchange should be continuous, and the ducts unblocked by furniture.

Trips and falls

In hurrying to and from a work station there are innumerable opportunities for a waitress to slip, trip or fall. Some important places to check are:

- "In" and "Out" doors to kitchens. There should be two, and they should be clearly marked. If only one is available it should have safety glass panels that allow good visibility.

- Traffic lanes between tables and between table and kitchen should be wide enough to pass easily and kept free of wires and other obstructions.

- The floor surface should be slip resistant and kept clean and dry. Cracks and worn areas should be repaired before

they can cause an accident. The manufacturer's cleaning instructions should be followed so that cleaning methods do not reduce the safety of non-skid floors.

- Floor areas around sinks, dishwashing machines and vegetable preparation areas should have proper drainage. If they cannot be kept dry, special grid pattern floor mats should be used.

- Frequent spills should be investigated so that their causes can be prevented. Until then, they should be covered quickly with sawdust.

- Lighting should be good enough to prevent accidents. Lighting fixtures should be kept clean and in good working order. Dirty fixtures can filter out 20 percent of the light, and bulbs that are wearing out can also reduce light output.



Bette Lane

Infections can arise from a number of sources including dirty dishes.

Burns and electrical wires

Electrical appliances, stoves and other hot surfaces present a constant hazard. Waitresses, like all other restaurant workers, should be instructed in the proper handling of appliances and cookware. They should never plug in any appliance with wet hands or while standing on a wet surface.

Particular care should be taken that appliances and electrical equipment, especially those found on metal counter tops, are properly grounded. These include toasters, blenders, hand-mixers, fans, refrigerators and radios. Many of these items are designed for household use and need special grounding when used in industry.

Extension cords, too, should be properly grounded and should be used only in temporary or emergency situations. They should never be substituted for permanent wiring.

First Aid and Fire Precautions

Every kitchen should have a properly stocked first aid box in the charge of a responsible person who has been trained

in first aid. In large establishments, the location of the nearest box and the name of the person responsible should be posted.

Every restaurant should have a fire certificate specifying means of escape in a fire. Fire exits should be clearly marked, and means of escape should be properly maintained and kept free of obstruction. Fire-fighting devices should be available, and regular fire drills should be held for all employees.

Stress

Workers with little control over their jobs suffer the greatest amount of stress, according to the latest findings by occupational health specialists. Waitresses rank high among women workers with such stress-related health problems as heart disease, hypertension and headaches.

Besides low control over their jobs, waitresses suffer stress from the pressure of the work, boredom with the routine, noise, low pay and little feedback to tell them that they are doing a good job. Night work and rotating shifts, especially if they disrupt social patterns, can cause digestive and sleep problems.

Sexual harassment is another stress that particularly affects waitresses. Employers may encourage this unwelcome attention from customers by forcing waitresses to wear revealing uniforms.

As sexual harassment has become a public issue, waitresses like other women workers are fighting back and winning significant victories. In 1980, waitresses in the Detroit airport brought suit against their employer on the grounds that their scanty uniforms subjected them not only to cold but to gross verbal and physical assault. The employer had to provide different uniforms.

Collective action does not always have to go as far as a court to win relief from stress. But only as waitresses, like other low-status workers, gain more control of their jobs will they be able to relieve many of the conditions that are dangerous to their health. □

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FOR WOMEN WHO WORK IN THE HOME

This factsheet will describe some of the hazardous materials that people in homes may use, diseases that may affect them and accidents that may occur in the home. Suggestions are included on how to avoid these problems.

Almost every woman does housework. Women who do housework may come in contact with a number of chemical or physical hazards and dangers. Many serious injuries occur in the home.

HOUSEHOLD PRODUCTS

Many household products can be dangerous. Listed below are some cleaning substances, their dangers and suggestions for preventing accidents or illnesses.

General Precautions

1. All of the substances below should be kept in locked closets or cabinets out of the reach of children and away from food.
2. Always read labels before using. Labels have informa-

tion on what to do if these substances spill, are breathed in, touch the skin, or are accidentally drunk.

3. Rubber gloves can protect hands from harmful products. They should extend about one-third of the way up your arm so that detergents or cleansers cannot splash or spill onto them. Gloves shouldn't be worn for long periods of time because hands sweat and may become irritated when gloves block off air.

<i>Cleaning Substance</i>	<i>Possible Dangers</i>	<i>Prevention</i>	<i>Cleaning Substance</i>	<i>Possible Dangers</i>	<i>Prevention</i>
Drain cleaners and lye	Can cause serious burns	Wear gloves and don't let skin come in contact with them. Follow directions on labels. Different kinds of cleaners shouldn't be used at the same time, such as combining drain cleaners with bleach or toilet bowl cleaners. Poisonous gases can be formed.	Bleach	Can give off poisonous gas if used with other cleaners.	Toilet bowl cleaners should never be used with bleach. Follow directions on label.
Oven cleaners	Can give off irritating or dangerous fumes or gases	Use brands that contain less dangerous chemicals. Follow directions on labels. Wear gloves.	Aerosol sprays	Can irritate lungs if breathed. Many consumers and environmental groups do not recommend using aerosols for ecological reasons.	Follow direction on labels. Use in well ventilated area. Substitute non-aerosol products when possible.
Ammonia	Can cause severe eye and lung irritation. If mixed with chlorine bleach, it can form a very poisonous gas called chlorine gas. Chlorine gas can cause coughing, loss of voice and, in high concentration, eventually death.	Use in ventilated area (where there is plenty of fresh air). Don't close door of room you are working in.	Floor waxes--furniture polish	Irritation of lungs and nasal passages	Use in well ventilated area.
			Cleaning fluids	May cause irritations. May contain dangerous solvents. Many have been found to be cancer-producing in animals.	Avoid contact with it. If necessary to use them, do so only in well ventilated area. Read labels.
			Pesticides	Serious poisoning--nerve damage	Don't let it touch skin. Follow instructions. Keep away from children, pets, food and dishes. Don't use outdoors if it is windy.

ALLERGIES AND SKIN PROBLEMS

Sometimes people are very sensitive to certain substances which cause them to have allergic reactions. Allergies can cause itching, rashes, hives, teary eyes, troubled breathing and other more severe reactions such as fever. Hay fever is one example of an allergy. Allergic reactions may develop suddenly when a person is exposed to a substance, even if they have used this substance for a long time. Once you develop an allergy it is almost impossible to lose it. You must simply avoid contact with the substance.

Dermatitis is the name used for many types of skin problems. Some dermatitis is caused by simple irritation of the skin. You may want to seek medical attention for these problems.

The signs of dermatitis may include:

inflammation	growths	oozing or crusted sores
redness	thickened skin	itchiness
flaky skin	blisters	scaly skin
pain	acne-like sores	

Other times things that you use often, like cinnamon, can cause an allergic reaction which also results in dermatitis. This type is contact dermatitis. The table shows some things which can cause dermatitis.

Common skin irritants found in the home

- Cleaning products:

Bleaches	Soap and detergents
Toilet bowl cleaners	Oven cleaners
Drain cleaners and flushes	Scouring pads
Grease removers	Metal brighteners
Window cleaners	Pet shampoos
Rug and carpet cleaners	Tire cleaners
- Bleaches
- Waxes and polishes
- Turpentine, paint removers
- Insecticides, herbicides, rodenticides
- Fertilizers

Common substances causing allergies in the home (not including cosmetics, clothing or medication)

- Soaps and detergents
- Deodorizers (pine oil, oil of wintergreen)
- Furniture polishes and waxes (pine oil, lemon oil)
- Plants (English Ivy, Philodendron)
- Foods:
 - Vegetables (tomato, carrot, celery, onion, garlic)
 - Citrus fruits (limes, lemons, oranges)
 - Spices (cinnamon, cloves, anise, vanilla)
 - Fish
 - Dough conditioners
- Exotic woods
- Glues
- Antiseptics
- Insecticides
- Herbicides
- Insect repellents

Preventing Skin Disease

To prevent skin disease, you should avoid letting the skin come in contact with chemicals and strong cleaning agents and avoid letting hands stay wet for long periods of time. When strong substances are used, gloves should be worn to

protect the hand. Hands should always be kept clean after working with strong substances. Using hand lotion containing lanolin may prevent skin irritation by keeping your skin from getting too dry.

INFECTIONS

"When the children of the house have colds or the flu I am expected to come to work. When I have a cold or the flu, I am told not to come to work and of course I have to miss a day's pay."—a household worker

More than 1¼ million women are paid household workers. They are often exposed to flu and cold infections of sick children and adults and to childhood diseases which can be very dangerous if contracted by adults. Since household workers usually have no sick leave, medical coverage, or disability insurance, exposure to infections can also be hazardous to the pocketbook.

It is important for those who work around children to have received immunizations, including vaccinations against the red measles and German measles. If a woman who is pregnant gets the German measles, there is a great probability that her child will have birth defects.

ACCIDENTS IN THE HOME

Falls or slipping cause many serious accidents in the home.

To prevent falls:

- Throw rugs should be eliminated or secured to floors.
- Rugs should have non-slip backing.
- Use handrails on stairs.
- Don't wear shoes with slippery soles.
- Make sure rooms and halls are well-lighted.
- Rooms and halls should be free of objects one could trip over.
- Water, food and grease should be cleaned up immediately.
- Bathtubs or showers should have hand grips.
- Sturdy ladders should be used to reach high places.

Burns can cause serious accidents in the home.

To prevent burns:

- When cooking, pot handles should be turned away from the edges of the stove.
- Use proper ashtrays.
- Have a plan for leaving the home in case of fire.

Electrical shock or electrocution can cause serious accidents in the home.

To prevent shock:

- Don't touch electrical cords or wires with wet hands.
- Extension cords should be in good repair—not frayed.
- Extension cords should not be overloaded with too many plugs.
- Extension cords should not run underneath rugs.
- Don't use electrical appliances in wet areas.
- Electrical appliances should be working properly.
- Never stick anything into outlets except proper plugs.

First aid supplies should be available and you should know when and how to use them.

BONES AND MUSCLES

Your muscles and back can be injured if you must lift or move things that are too heavy or must carry things that are too bulky. (See also the *WOHRC Fact Sheet* on lifting or moving.) Also, working for long periods in uncomfortable or unnatural positions may damage muscles, bones, joints,

or the ligaments and tendons that hold the body together. All of these problems are made worse if you work for long periods in extreme cold or heat (as in a hot kitchen or laundry room) or if you must keep your hands in water (as while scrubbing floors).

Muscle and Bone Injuries and Their Possible Causes

<i>Name</i>	<i>Problem and Possible Cause</i>	<i>Name</i>	<i>Problem and Possible Cause</i>
Muscle soreness (Tendonitis)	Tendons are strong elastic connectors of muscles and bones. If used again and again in unnatural, uncomfortable ways, such as scrubbing, they become inflamed, swollen, and sore. Women who must constantly wring out clothes, rags, or sponges may get it.	Torn Ligaments	Ligaments support the bones. Heavy loads strain back ligaments causing severe pain. When ligaments heal they are scarred and easier to injure again.
Wrist, hand soreness (Tenosynovitis)	Rapid and/or repeated hand movements or poorly designed tools can cause soreness, swelling in hands, wrists, or lower arms. Eventually permanent damage may mean you cannot move the affected part of your body. Tenosynovitis can also cause carpal tunnel syndrome which causes fingers to be numb, tingle, or burn.	Bursitis	This is usually a problem of knee, elbow, or shoulder joints probably caused by repeated pressure or jolts. The result is pain and often swelling. Since people who do a lot of housework may develop bursitis in their knees, doctors sometimes call this "Housemaid's Knee."
Slipped Disc	Discs separate and cushion bones in the spine in your back. They can slip out from between these bones. This is more likely to happen if bones and discs are not held tightly together because ligaments have been torn.	Arthritis	Arthritis is the condition where you develop inflamed joints which are often painful, hot, red and/or swollen.
		Rheumatism	Rheumatism occurs when joints (or other connecting tissue such as tendons or ligaments) become inflamed, painful, and stiff.

SOME GENERAL THOUGHTS...

In 1977 there were 1¼ million paid private household workers in the United States. Ninety-seven percent of these workers are female and thirty-six percent are black or other minority groups. These figures do not reflect the thousands of household workers who work "off the books".

There are many other problems that can affect the health of any woman who works in the home. The frustration of having to do repeated, sometimes unpleasant or boring tasks is one. Lack of respect from some employers, low pay and no job security may be others. Working alone with no one to talk to can also be a source of difficulty for some people. Such problems can cause stress and anxiety. They can make your job both unhealthy and difficult.

If you are a paid household worker, it is important to watch out for your own safety and health. Some changes

will probably have to come from your employer. Some of the things that should be done are to provide enough and proper:

ventilation	first aid supplies
cleaning supplies	light and air
ladders	cleaning appliances (in good
gloves	running order)

If there isn't a household workers' organization in your area, you may want to consider forming one.

The **Women's Occupational Health Resource Center** has written a questionnaire for household workers to survey safety and health on the job. We would welcome your responses on this questionnaire because a survey of this kind has not been done before. If you or other household workers you know would be interested in filling out this questionnaire please contact us.

The **Women's Occupational Health Resource Center** is a central clearinghouse and maintains a communications network about women and occupational health. The **Resource Center** has:

● **Computerized library service** including government, union, legal and scientific publications. The information is organized by:

occupations
hazards and social influences
human body effects

● **Training programs**

● **Materials produced include:**

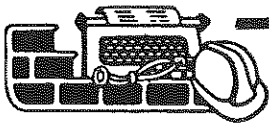
Bimonthly working women's
Newsletter
Factsheets and health and safety
packets
Technical Bulletin for occupational
health specialists (in preparation)

● **Professional assistance**

If you have a question about your work and your health, or if we can be of assistance to your group, please contact us.

For more information write to: **Women's
Occupational Health Resource Center,**
117 St. John's Place
Brooklyn, NY 11217





CHILD CARE

Essential for parents... Hazardous for workers

WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER NEWS

The participation of mothers with children under the age of 18 in the paid labor force has reached an all time high in the United States. Twenty million (62%) were employed in March 1985, according to the Women's Bureau.¹ Eight million mothers (54%) with preschool children also engaged in paid work (in addition to their unpaid household work.) This means that about 34 million children (58%) have mothers in the labor force, an increase of 5.8 million since 1975. Of these nearly 9.6 million (49%) were under six years of age.

Many mothers are employed out of sheer necessity. About 1 out of every 6 families in the United States was maintained by women in 1985. But the proportion among poor women is staggeringly higher: 73% of poor black families were headed by women, which encompasses about 3.2 million children; 49% of Hispanic families and 38% of poor white families, representing another 1.1 million and 3.4 million children.

With all these mothers in the workforce, who is minding the children? There are at least 24 million children under the age of 13 in need of day care, while current statistics show the availability of only about 6 million spaces in licensed centers and family homes. There are about 22,000 for-profit child care centers nationwide as well. And child care is expensive. The majority of parents pay about \$3,000 per child, but the costs can range from \$1,500 to \$10,000, depending on geographical location and ability to pay.² The median income for a two parent household with two children was \$25,338 in 1984. Average costs of child care could require nearly 25% of the family income!

Quality child care facilities are a social need of urgent proportions, yet the United States lags far behind other industrialized nations in developing and implementing creative programs and options. (See p. 8 for Swedish examples.) There are some modest examples, but they are the exception, rather than the rule. In New York State, child care provisions have been negotiated in state contracts providing child care, which is now offered in 25 state workplaces. In Hawaii, the first government-sponsored child care center has opened, and a program is beginning in Denver, serving government workers and serving as a model for area businesses.³

At the same time that there is an urgent need for day care facilities, the working conditions, wages and prestige afforded to day care workers are appalling. WOHRHC covers some of the issues and presents some of the possibilities in this special section on child care.



Lisa Blackhear/IMPACT VISUALS

This graphic is available from WOHRHC as an 8" x 10" print suitable for framing. See page 12 for ordering information.

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SEIU

Room dividers and soundproof wall material can help bring down noise levels.

safeguards do not screen out enough noise. Laundry workers should have their hearing checked regularly.

- Use of powdered rather than liquid soaps and bleaches to avoid eye injuries. Workers should read the labels of detergents to find out what chemicals they contain.

- Insulation of heat-producing equipment and installation of ventilators and dehumidifiers. Too much heat can cause increased heart beat rates and high blood pressure. In extreme cases it can cause heat rash, cramps, fainting and heat stroke.

Water fountains in laundries are a must.

- Pressing equipment that requires two hands to operate in order to prevent burns. Machinery should be equipped with gauges and valves to prevent steam pressure build-up. Burn care kits should be placed throughout the plant.

- Prevention of strains — which account for 40 percent of lost-time injuries among laundry workers — by use of modern laundry bins which have lifts to bring the laundry up. Stools should be provided for jobs

that can be performed while seated. Standing jobs should be rotated with sitting jobs. For those who must stand all day, fatigue mats should be obtained from laundry supply stores.

- Guards and automatic shutoffs on machinery to prevent accidents. Washers and dryers should stop when their doors open. Conveyer belts and power wringers should be covered with guards.

- Good maintenance of machinery to prevent excessive noise and leaks, which could lead to electric shock.

- Transferring pregnant workers (with salary retention) from tasks that could cause birth defects. Potential fathers and pregnant mothers should especially not be exposed to carcinogenic chemicals since these may also cause mutations in the sperm or fetus. Pregnant workers should not be required to lift heavy loads or to strain.

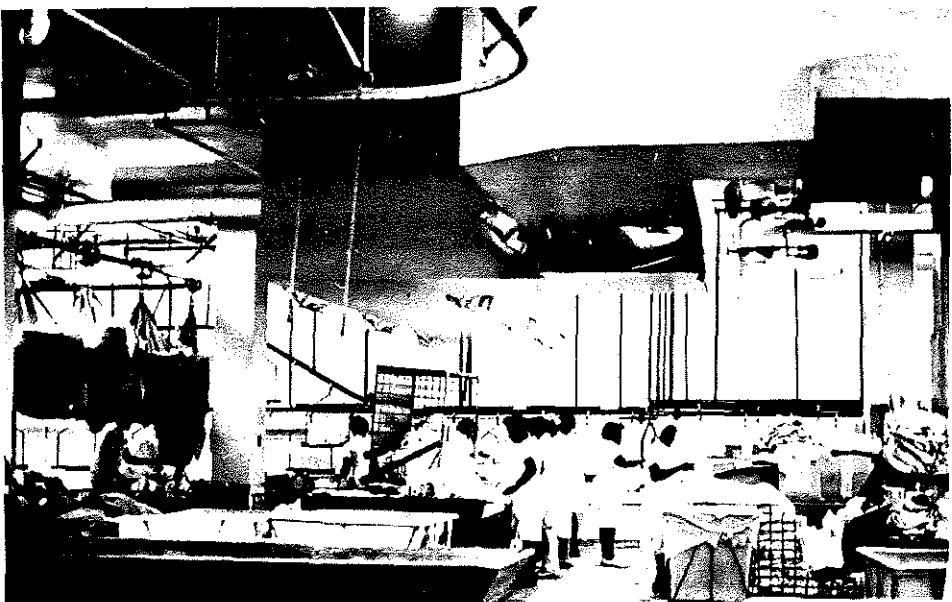
- Laundry workers should wash often and should have clean areas away from the dirty laundry in which to eat.

- Action to prevent stress caused by excess workload, speedup and job monotony. Stress increases the risk of a variety of diseases from heart ailments to emotional problems.

*For copies of the pamphlet **Does Your Laundry Have a Clean Bill of Health?** write to Safety and Health Program, Food and Beverage Trades Department, AFL-CIO, 815 Sixteenth St. NW, Washington, D.C. 20006, or call (202) 737-7200.*

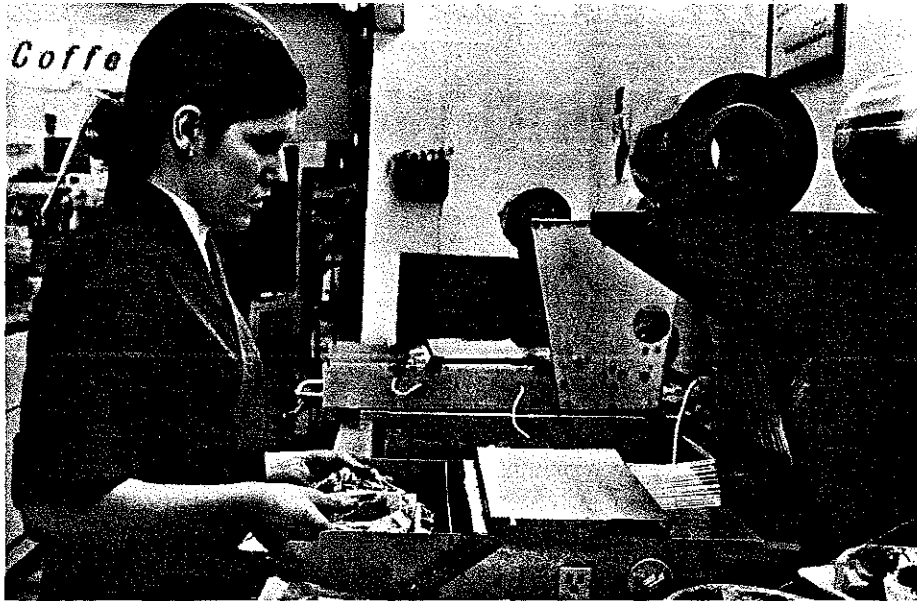
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RESOURCE CENTER
117 St. Johns Place
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SEIU

Meat Processing: A Dangerous Industry



Local 342, Amalgamated Meat Cutters

The machine this meat wrapper is using emits fumes that cause "meat wrappers asthma," a condition prevalent in the industry. Ninety-eight percent of all meat wrappers are women.

Meat processing and packing is one of the most dangerous of all industries. Its incidence of illness and injury is often higher than those of such heavy industries as steel and construction. In 1977, for instance, the injury-illness rate in iron and steel foundries was 24.4 per 100 full-time workers. In meat products plants it was 28.8.

The hazards of the industry include cuts and gashes from butchers' knives and saws, strains from handling heavy carcasses, falls on wet and blood-soaked floors, infections from animal diseases, overexposure to refrigerator temperatures, damage to blood vessels caused by prolonged standing, and skin infections caused by exposure to animal fat and chemical solutions.

Meat Wrappers Asthma

An occupational disease that is prevalent among women in the industry is meat wrappers asthma, a condition that can range from mild eye, nose and throat irritation to wheezing and difficulty in breathing, chest pains, coughing, nausea, muscle pains, chills, and fever. The more severe symptoms are more likely to occur in smokers and those with a history of allergies and other respiratory problems. Ninety-eight percent of all meat wrappers are women.

Although all the causes of the condition are not yet known, it seems to arise from the fumes generated by the meat wrapping material—polyvinyl chloride (PVC)—when it is cut on a hot wire and sealed on a heated sealing pad—the processes commonly used in the industry.

The chief culprit seems to be the chemical that plasticizes the wrapper, dioctyl adipate, which accounts for 30 percent of the film's composition. Unlike phthalate plasticizers, to date no threshold limit value (TLV) has been published for dioctyl adipate fumes.

A second irritating factor is probably hydrogen chloride (HCl), which is also produced by the cutting with heated wire. The TLV for HCl is a maximum of 5 parts per million (ppm).

Still other toxic fumes are released by the glue on the price labels, which are also affixed by heat. Its main ingredient, when heated, gives off phthalic anhydride, a potent eye, skin and upper respiratory irritant. The TLV for this fume is 2 ppm averaged over an eight hour day.

Prevention: The only way to eliminate the dioctyl adipate fumes entirely is to replace the hot cutting wire with a mechanical blade or some other

"cold" device. If this is not immediately possible, the wire temperature should be set as low as possible, as should the temperature on sealing pads and price labels. The tension on the machine roll should be set so that the film retreats a bit after being cut to prevent it from smoldering on the wire. Cutting wires and sealing pads should be cleaned frequently.

If fume emissions cannot be controlled, local ventilation systems that capture and dispose of fumes should be installed.

Standing

Workers in the meat industry are generally required to stand for many hours a day. This can cause pressure on the blood vessels in the legs and dilation of the veins, especially if the muscular vein walls have already been weakened by pregnancy or excess weight. Dilation of the veins can cause blood to accumulate and lead to swelling of the feet and ankles. Some authorities think that prolonged standing can lead to a weakening of the vein walls. It can also cause strain and pain in the thigh muscles.

cont'd

Workers must fend off cuts, strains, infections and meat wrappers asthma.



Local 342, Amalgamated Meat Cutters

Standing for many hours a day, lifting heavy trays and often working in cold temperatures are occupational hazards for women like these in the meat processing and packaging industry.

continued from page 2

For prevention of these conditions, jobs should be designed to permit workers to sit down at regular intervals. If this is not feasible, jobs should be rotated between those requiring sitting and standing.

Infectious Diseases

Brucellosis and *psittacosis* are two infectious diseases transmitted by animals to human beings, and a possible threat to meat processing workers. *Brucellosis* is transmitted by cattle and swine, particularly the latter, and *psittacosis* by fowl. Both usually take the form of a particular outbreak when a diseased animal or animals have been handled. *Brucellosis* symptoms include fever, headache, pains in the joints, night sweats and loss of appetite—although blood samples from some patients have shown the presence of infectious organisms without any symptoms.

Psittacosis symptoms include fever, chills, profuse sweating, headache and body aches. Both illnesses can become severe enough to necessitate hospitalization. Both seem to be caused not only by direct handling, including

packaging, of the diseased carcasses, but by inhaling air in a plant where the infection is present.

Prevention: The only sure way to eliminate these diseases is to make sure that infected animals are not introduced into meat packing plants. However, good air exhaust systems and rigorous plant hygiene can help.

Skin diseases

A variety of skin irritations and diseases can be caused by fat-soiled clothing, exposure to brine solutions, temperature extremes, steam and water. Meat industry workers have an unusually high incidence of warts and inflammation in small wounds. The warts have been attributed to the accumulation of two-to-three-day-old blood in the bottom of the meat cartons.

To care for inflammations, full first aid facilities should be provided and used by trained personnel. Hygienic precautions should include well-maintained washing and sanitary facilities, including showers where practicable. Protective creams and lotions should be provided, and protective clothing

worn. It should be light colored and laundered frequently.

Cold

Meat processing workers who do their jobs in heavily refrigerated sections of a plant are susceptible to frostbite and may develop a predisposition to diseases such as influenza. Many also report a "pins and needles" sensation in their fingers, which they attribute to the cold.

Prolonged exposure to extreme temperatures may also cause work accidents. Persons exposed to cold should be provided with protective clothing and rest periods in a warm area.

Accidents

Movement of heavy and awkward carcasses may cause *strains of the back and shoulders*. The well planned use of rails and hooks can prevent this, as can training in lifting and handling.

Wet and greasy floors can cause slips and *falls*. Floors should be constructed of non-slip materials. Rigorous cleanliness and sloping and drainage of floors to prevent water accumulation are necessary. Footwear should have non-slip soles.

Cuts are common among butchery workers. Knives should be kept sharp, so that they cut easily, with no extra force necessary. Handles should be well designed. Workers should be taught to use them with maximum safety precautions. Suitable protective clothing should be provided. Aprons of metal mesh are recommended, even though some workers resist wearing them because of their weight. However, it is suggested that suspenders be worn with the aprons to lessen the drag on the neck.

Hand and arm guards, as well as finger stalls or gloves of chain mail are also recommended. With some machines, however, metal mesh gloves should be avoided because they can too easily be caught in the choppers.

When power saws are used, there should be guards for the dangerous parts.

WOHRC FACT SHEET



WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER

WORKING WITH ANIMALS

There are a myriad of jobs involving contact with birds, fish or animals, large and small. Although working with animals seems less threatening than working in a coal

mine or with chemicals, the reality is that contact with the animal kingdom has the potential for health risks. Here we examine these rather special occupational hazards.

One doesn't have to be a lion tamer or an underwater scientist studying sharks to be a candidate for possible health risks because of a job involving animals. The county dog catcher, workers who clean cages in laboratories, agricultural workers, men and women who fish for a living and even a food handler making sausage with meat from an infected hog are among those who encounter very real hazards because of contact, whether direct or indirect, with the animal world.

While a lot of attention is paid to the safety of the lion tamer or shark watcher, there is very little clamor about the safety of people doing more mundane work with animals. Nonetheless, debilitating allergic or immunological reactions, the danger of exposure to infectious agents or anesthetic gases, physical injury such as bites and muscle strain and job stress are part of the picture.

Adverse Reactions

Working with animals often entails exposure to organic matter which can set off allergic or immunological reactions. This is somewhat different from more familiar occupational health situations. For example, a coal miner may develop a respiratory ailment that is the lung's response to an irritant, coal crystals, whereas, a snow crab processor who develops asthma is displaying an allergic response to organic matter. In the fishery industry, occupational asthma has been documented in oyster, prawn and fish-processing workers and this year, a study from Quebec showed, "a highly significant correlation between a positive skin test to crab extracts... and occupational asthma, rhinitis and/or skin rash at work..."

Since the development of confinement rearing of animals, human beings are

being exposed to massive amounts of organic matter. For example, in the last ten years, there has been a surge in confinement rearing of swine. It's estimated that some 500,000 people are involved in tending swine in a closed work environment. Earlier this year a team of researchers in Iowa reported what they consider, "an emerging occupational health hazard" associated with such work.

Based on reports from workers complaining of bronchitic symptoms as well as symptoms consistent with asthma, hypersensitivity pneumonitis, airway obstruction and acute respiratory distress, the scientific team studied pulmonary function among such workers before and after a four-hour work shift and compared their lung functioning with office workers or students with no prior exposure who were put into the work atmosphere for the purposes of the study. The air in the swine confinement area also was analysed for contaminants such as particles and gases which were confirmed.

The study found declines in lung function in both groups but the decrements were more pronounced in the swine workers.

There are some other facts to keep in mind in considering adverse effects resulting from exposure to animals. The first is the fact that even when damage is not obvious—and some ill effects can take a long time to develop—the body is reacting. For example, a study done in Denmark showed antibodies to hen and duck antigens in poultry workers. In silence, these workers' immunological systems were setting up a defense reactions to a threat.

People also differ in their reactions. For example, a bee sting that might cause one person pain and swelling might lead to extreme reactions in another person. For example, a study done in Ohio, suggested a cause-and-effect relationship between the development of neurological symptoms including seizures and insect stings.



Another point to keep in mind is the fact that some workers who deal with animals are vulnerable to combined adverse effects because of their occupational environment. For example, on the farm there are a host of potential hazards—pollens, animal dander, grain dust, mold spores, inorganic dusts, ammonia fertilizers, insecticides, herbicides, motor fuels and nitrogen oxides and putrefactive gases. These multiple insults lead to the fact that in general, farmers are more likely than other occupational groups to suffer respiratory conditions.

Dangerous Exposures

Exposures to waste anesthetic gases and vapors and the potential for contracting zoonotic (animal-to-human) disease are very real hazards facing those who work with animals.

In recent years evidence of ill effects from waste anesthetic gases—headache, nausea, renal and hepatic disorders, cancer, behavioral change, reproductive effects—has accumulated in data from different occupations. NIOSH estimates that some 50,000 veterinarians and their assistants are routinely exposed to waste anesthetics.

Zoonotic disease is a very real hazard for those who work with animals no matter what the setting or how unorthodox the pattern of transmission.

For example, Q fever is a disease of people who work in contact with such livestock as cattle, goats and sheep—agricultural workers. Recently, the Canadian Medical Association Journal reported a study prompted by the fact that Q fever had become endemic in the province of Ontario. Instead of concentrating on farm workers, the investigators focused on personnel at a research institute where sheep were used for perinatal studies. The investigators were able to document an outbreak of Q fever which, despite considerable illness—Q fever resembles the flu—went undetected in a hospital!

In another study, one done by the Bacterial Diseases Division of the Centers for Disease Control, it was noted that an outbreak of *Salmonella heidelberg* among infants in a hospital nursery could be traced to a woman who had contact with infected calves while she was pregnant. The woman transmitted the infection at birth to her own baby who passed it along to its companions in the nursery.

Even if a particular animal is not ill or a particularly effective "reservoir" for an infectious agent, transmission can occur. For example, people can contract spotted

fever in the seemingly helpful and harmless act of de-ticking their dogs. Ticks may be crushed and the fingers may become contaminated. Infections through abrasions in the skin or rubbing the eyes have been known to occur in humans.

NIH Program

Since animal research is so vital a part of worldwide scientific effort, and exposure to infectious agents is part of the job, it's useful to look at the Animal Handlers Medical Surveillance Program in force at the National Institutes of Health in the Washington D.C. metropolitan area. Devised over the last several years by the Occupational Medical Service, Division of Safety, and the Veterinary Resources Branch, Division of Research Services to protect employees as well as to protect an estimated population of some 4,200 animals—everything from dogs to chimpanzees—from diseases carried by humans, the program is quite complex and involves several stages. For humans this means careful pre-employment examinations, immunizations, follow-up monitoring and, if needed, care for work-related acute illness and injuries. For many of the animals—large research animals and selected rodents and rabbits—it means quarantine to reduce the risk of zoonotic diseases such as tuberculosis, rabies, salmonellosis.

High Risk Groups

There are an estimated 10,000 animal control officers in the U.S. While it is their work which contributes much to public health, little attention is paid to the hazards they themselves face. This fact led to a study in New Mexico reported this year in the American Journal of Public Health. One hundred and two full-time animal control officers were contacted. About one-fourth of them were women. These were people used to dealing with such animals as dogs, cats, bats, skunks, raccoons, foxes, mice and rats among others.

The animal control officers were found to be at a clear increased risk of animal bites.

According to the researchers, extrapolation of this data suggests that each year over 50,000 animal bites might occur to full-time animal control officers in this country. They conclude, "assessments of animal control personnel bite experience, including rabies exposures, should be performed in other areas."

Rabies is of course a significant hazard in work involving animals. It is important therefore to note that in a study reported in "The Lancet" last spring, human diploid cell vaccine, whether given intramuscularly or by automatic intradermal

jet injection, failed to produce antibody levels predicted by earlier studies. This finding is of interest because human diploid cell vaccine is more immunogenic and significantly less toxic than earlier rabies vaccines.

While the health risk to veterinarians is scarcely a new subject, the familiarity of danger can lead to forms of denial or mistaken diagnosis. For example in a case reported this year in California, a veterinarian thought he was suffering from flu and failed to seek treatment. He actually was suffering from bubonic plague. Not only were his chances for survival reduced by his delay, nearly sixty people with whom he had face-to-face contact were in danger. Awareness of risk is clearly one of the requisites of working with animals! □

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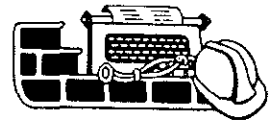
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WOHRC FACT SHEET

WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER



Bus Driving: Exhaustion and Exhaust Fumes

Of an estimated 354,000 bus drivers in the United States some 46 percent are women. They drive the majority of the nation's school buses, with smaller percentages on city and commercial intercity lines.

The health hazards faced by these drivers and their male colleagues include air pollution — especially from carbon monoxide in exhaust fumes — noise, body stress

from vehicle vibration and inadequately designed seats, and the psychological stress caused by driving in traffic while serving customers or policing students.

Although some of these hazards are being met by better design and engineering in new buses, conditions vary widely from place to place. Many of these working conditions still need attention.

Air Pollution

Carbon monoxide produced by motor vehicle exhaust is the most dangerous pollutant to which bus drivers are exposed. Even low levels can cause fatigue, headache, confusion, irritability, dizziness and disturbed sleep. Studies have shown that it can also affect driving accuracy.

Carbon monoxide is also released by cigarette smoke in buses that still permit smoking. Cigarette smoke also causes eye irritation, cough, wheezing and headache in some non-smokers. Such reactions can also increase fatigue.

Other air pollution is caused by passengers with colds and viruses and cleaning and fumigating chemicals. The new, air-conditioned buses in which windows do not open are designed to minimize dirt, noise and carbon monoxide pollution from surrounding traffic. But their design often makes it difficult to remove the odor and residue of chemical cleansers and roach sprays.

Although some of these problems cannot be completely eliminated, many can be lessened by better maintenance of old buses and better design of new ones. Carbon monoxide pollution is particularly traceable to poor care of engines and windows as well as to parking in tight patterns.

If buses must be left in an idling mode between uses, particular attention should be paid to ventilation.



Women are drivers on many city lines.

Filters in ventilation systems should be changed according to manufacturers' instructions, and account should be taken of varying pollution levels caused by different driving conditions.

To counter fumigation odors, only approved pesticides should be used and buses should be thoroughly ventilated after the process.

Noise

Some noise measurements taken in buses have shown levels as much as 20 decibels above the U.S. Occupational Safety and Health Adminis-

tration recommended level of 90 decibels. Excessive noise like this can contribute to hearing problems as well as present a safety threat insofar as it interferes with the driver's ability to communicate or get auditory cues from traffic on the road.

Newer buses are less noisy, and closed windows shut out much traffic noise, but city traffic and obstreperous children in school buses can still present a noise hazard.

Installation of acoustic material near the driver's seat and acoustically insulated engines can reduce noise. Radio playing and other passenger noise should be kept to a minimum.

Vibrational Stress

Research has shown that the bodies of bus drivers are subject to vibration and shock under normal working conditions. One study of 1,448 interstate male drivers with more than 15 years on the road concluded that whole-body vibration contributed to a number of health problems. These included disorders of the veins, bowels, muscles, back and respiratory system. Whole-body vibration, along with poor diet and posture, can influence the development of varicose veins, hemorrhoids, diverticulitis, appendicitis and some hernias. It is also suspected of having an influence on stiffness of joints, back disc problems and back pain. The potholes often encountered in city driving may aggravate body shock and



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Most of the nation's school bus drivers are women.

some of these conditions.

Another factor that may aggravate the effects of body vibration are uncomfortable, badly designed drivers' seats. At this writing, there are no enforceable guidelines for the construction of comfortable seating for bus drivers.

The effects of whole-body vibration can be ameliorated by the proper use and maintenance of shock absorbers, adequate rest stops, better maintained roads and highways, and seats and driver areas designed for comfort. These should take into account the different dimensions of individual male and female drivers.

Psychological Stress

A recent study by the Paris (France) Metropolitan Transportation System suggests that the job title "bus driver" is "biotechnically illegitimate." Two

fundamentally incompatible tasks are required, it points out: driving a vehicle safely in heavy traffic and, at the same time, checking passenger fares. Although in some U.S. cities, the latter burden has been somewhat eased by the requirement that passengers have exact change, the driver is still responsible for seeing to it that fares are paid and that order is maintained in the bus. In school buses, although there are no fares, maintaining order can be a particularly difficult task.

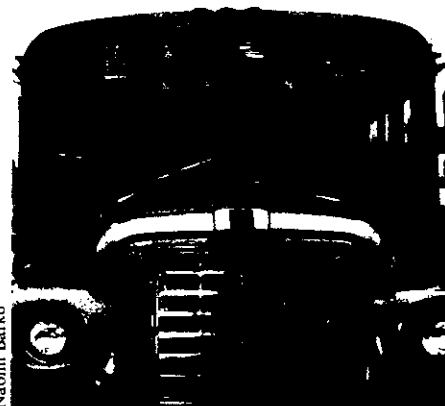
That stress is a major problem for bus drivers has been shown in a number of studies in other countries. In Sweden, increased frequencies of illness were found, as well as early retirement. In West Berlin, 75 percent of drivers surveyed were forced to leave their jobs prematurely because of occupational stress.

The ideal solution to the conflict in the driver's job would probably be to have two workers aboard each vehicle — one to drive and one to collect fares. Since mounting municipal budget deficits make this unlikely, more practical solutions may be to extend the exact-change rule, to provide special bus lanes in cities, and to have clearly marked routes and schedules for passengers so that they do not have to distract the drivers with questions. For school children, bus safety classes may be of some help in encouraging quiet and order on the bus.

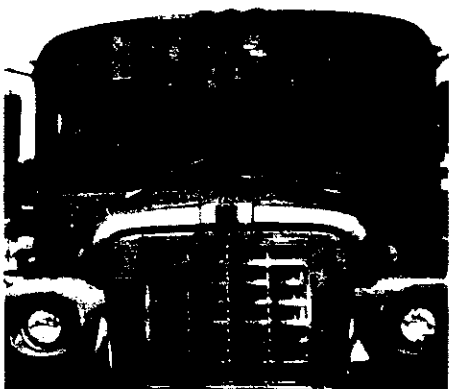
Another significant stressor of bus

drivers, some studies also point out, is the lack of social support on the job. This might be helped by providing for meetings at which drivers exchange grievances and suggestions. Some cities have also attempted to show support to drivers by encouraging passengers to report extra courteous treatment and by displaying "driver of the month" commendations among the bus advertisements.

This fact sheet is based on the report Occupational Health Effects of Driving a Bus by Marian Olsen, a graduate student at the Columbia University School of Public Health.



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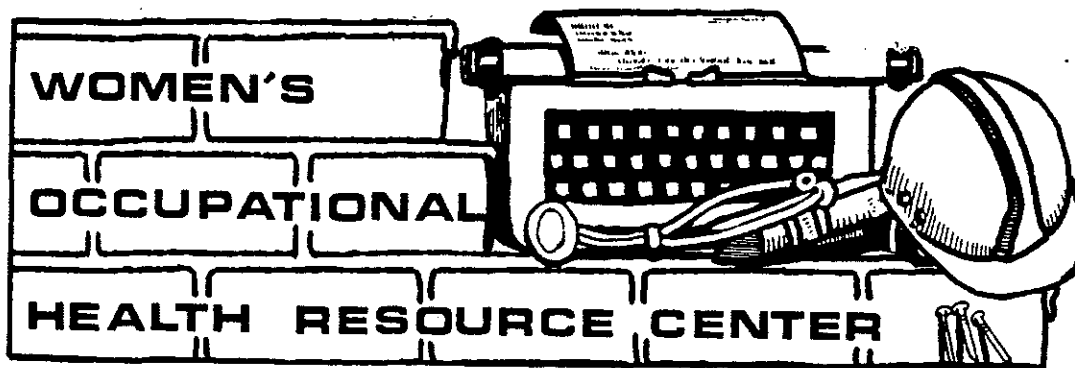


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FACT SHEET

March 1980

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HEALTH FACTS ON THE TEXTILE INDUSTRY

Some Background:

Textile manufacture has often been considered to be "women's work," implying that it is safe and easy. But textile manufacture can be an industry with highly dangerous occupations. In the early years of the American textile industry, women often lost their hands in hazardously constructed machines or lost their lives in mill fires. In Southern Asia today, women textile workers commonly work ten hours a day, six or seven days a week, in mills where the humidity is over 90 percent and the temperature over 90 degrees.

There are over 240,000 textile workers in America today, 57 percent of them women. These women, too, can face serious occupational hazards. Some of these hazards are invisible, like standing. Some work very slowly, damaging the body bit by bit over a period of years. And some of the newer chemical hazards that textile workers face are not even yet understood fully by medical and scientific experts.

You, as a textile worker, have a right to know everything that is known about the hazards you may face on the job. This fact sheet describes some of the many potential hazards of textile work and some of the steps you can take to protect yourself.

COTTON DUST: THE DANGER OF BROWN LUNG DISEASE

Workers in cotton mills face a danger unknown in any other occupational en-

vironment: Brown lung disease, or byssinosis. The disease is caused by repeated exposure to cotton dust in the air. It develops in two stages:

- In the early stage, the symptoms include tight-chestedness, coughing, and shortness of breath. These symptoms may be mistaken for a cold, but in brown lung disease, the symptoms are worse on Mondays, as people return to work from the weekend. Some people call it "Monday morning fever."
- In the advanced stage, breathing becomes difficult and the lungs become congested with fluid. Work in dusty environments becomes impossible. Often, the victim is too disabled to work at all. At least 35,000 American textile workers are disabled by brown lung disease.

What Can Be Done:

- In the long run, the only solution is to clean up the air in the mills. This is the responsibility of the employers. OSHA has ruled that cotton mills must install ventilation systems capable of reducing the cotton dust in the air to the legal level of 1.0 mg/m³. But companies have until 1982 to meet the new standards.
- In the meantime, OSHA has ruled that employers must protect their employees by providing respirators to everyone in a work area containing cotton dust. All employees are to be supplied with respirators during "blow downs" when the equipment is cleaned with compressed

air. Respirators can be awkward and uncomfortable. The employee has the right to:

- a respirator that fits properly. Many respirators are designed to fit "average" clean-shaven men's faces, but respirators designed for women are now available. **Remember:** an improperly fitted respirator does not provide adequate protection.

"I just started to smother after I had been working in the spinning room for a few years. My work began to slow down. The boss came around and told me I wasn't moving fast enough. I stopped taking a lunch break. But I still couldn't get my quota. It was all the cotton dust flying around. I couldn't breathe. I finally had to quit work five years early—no pension, no medical compensation, not even one of those sheets we were making."

Flossie Strickland,

• a South Carolina textile worker

- periodic breaks for face-washing. Respirators can cause skin irritations as dust accumulates under the faceplate seal. Especially during hot weather, the face and the respirator's faceplate shield should be washed frequently.

Employees who are already so disabled by brown lung disease that they cannot use a respirator, have the right under OSHA regulations to be transferred to a job in a dust-free area at *no loss in pay*.

THE DANGERS OF HAZARDOUS CHEMICALS: DYES AND ADDITIVES

Hundreds of different chemicals are involved in textile manufacture today. They are used as flame retardants, anti-stats, softeners, water or oil repellents, bleaches, wetting agents, finishers, and dyes. Most of these chemicals are potentially hazardous to the human body.

In addition to the chemicals which are deliberately used in textile manufacture, textile workers may be exposed to hazardous

chemicals contaminating the textile fibers. For example, growing cotton is sometimes sprayed with arsenic, and arsenic may remain on the fibers at toxic levels during the ginning process. Synthetic fibers may contain traces of the chemicals used in their manufacture, such as formaldehyde, which is severely irritating and has been found to cause cancer in laboratory animals.

Here are some general precautions for working with hazardous chemicals:

- Never eat in your work area. It is a good idea not to smoke either, since cigarettes may carry traces of chemicals from the environment to your mouth.
- Work areas should be properly ventilated.
- Work areas should have access to running water (or ceiling showers) for thorough washing of any clothes or skin areas which may be splashed by dangerous materials.
- Never use an industrial solvent to clean your hands. Don't use solvent-soaked rags to clean equipment.
- Some procedures may require rubber gloves, protective shields, and goggles.

NOISE AND THE DANGER OF HEARING LOSS

Many textile manufacturing processes are so noisy that conversation is impossible. Daily exposure to high levels of noise can lead to hearing loss and is certainly stressful. Hearing tests show that people who have worked in the textile industry for many years are more likely than other people their age to suffer from partial deafness.

In the long run, noise levels can only be reduced by replacing noisy equipment with equipment which has been designed to run quietly and smoothly. In the meantime, ear plugs or muffs can help and are required by OSHA where noise levels exceed allowed limits.

ACCIDENTS

The most dangerous machines in the textile industry are those used in the opening and carding processes—the gear wheels of spinning

machines, flying shuttles, hydroextractors, and finishing machines. New machines often have fencing or interlock guards to protect the worker, but many textile mills still have old and extremely hazardous equipment. The danger of accidents can only be reduced by (1) replacing old and hazardous equipment and (2) assigning an adequate number of workers to each machine, so that individual workers are not forced to work at an unsafe speed. Employees can reduce the chance of having an accident by avoiding flowing or loose-fitting clothing (especially sleeves) and oversized gloves.

PERSPECTIVE

You can protect yourself from many of the hazards of textile work by being well-informed and taking all the recommended precautions. But the most serious hazards—cotton dust, unsafe machines, chemical toxins—can only be controlled by the employer. These changes will

take time and the effort of many people working together.

The first step is to get the facts.

This factsheet was prepared by:

The Women's Occupational Health
Resources Center
117 St. John's Place
Brooklyn, N Y 11217

for a conference on:

"Hazards in the Textile Mills
And What You Can Do About Them"

A Joint OSHA/Women's Bureau Conference
For Working Women in the Textile Industry
Co-sponsored by the Coalition of Labor Union
Women (CLUW).

TABLE: SOME CHEMICAL HAZARDS IN THE TEXTILE INDUSTRY

There are many chemicals used in textile processing. Listed below are some of these chemicals and recommendations about what to do about them.

Dyes

1. Dyes derived from the chemical *benzidine* (such as dichloro-benzidine)

Possible dangers: bladder cancer, liver damage

Recommendations:

Whenever possible non-benzidine dyes should be substituted for benzidine-derived dyes.

If these dyes are used, industrial hygiene techniques, such as closed processes, to limit exposure should be used.

Water should be available in large amounts for washing exposed eyes or skin. The employer should provide goggles and protective shields.

There should be periodic screening to detect benzidine in the urine of workers using these

dyes. The presence of benzidine in the urine shows that workers are being exposed to dangerous amounts of that chemical.

2. Azoic dyes

Possible dangers: dermatitis (skin irritation—may include itching, rash, swelling. Repeated exposure leads to severe allergic reactions.) No studies have been done to rule out serious longterm effects, such as cancer.

Recommendation: follow general precautions for dealing with hazardous chemicals.

3. Dyes which comes in powder form (fiber reactive dyes)

Possible danger: lung damage

Recommendations: These dyes should be used with ventilation and employers should provide respirators to workers with potential exposure. Powdered chemicals should never be "dum-

ped" in dry form but should be wetted first or added mechanically.

4. Disperse dyes (used on fabrics such as Orlon, Dynel, and Acrilan)

Possible dangers: dermatitis, cancer (?)

Recommendations: follow general precautions

Chemicals used in textile printing

1. Formaldehyde (may be released during the heat treatment in textile printing, along with other toxic gases)

Possible dangers: dermatitis, allergic lung disease (?), cancer (?)

Recommendations: avoid skin contact. Ventilation must be provided and dry "dumping" eliminated.

2. Benzidine-based pigments (most of the pigments in the yellow range)

Possible dangers: bladder cancer, liver damage
Recommendations: avoid skin contact. Ventilation must be provided and dry "dumping" eliminated.

Additives and other chemicals used in fabric processing

Many additives, such as the now-banned flame-retardant Tris, which was found to cause changes in genetic structure and could possibly lead to cancer or birth defects, may be present in textile processing.

It is important to find out the names and known effects of these other chemicals which may be in your plant. Your employer should provide the information. NIOSH, OSHA, your union, and other organizations can help you try to get it as well. The Women's Occupational Health Resource Center can help you get help.