

WOHRC NEWS

WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER

WOHRC Shows Designs for Health and Safety



Manny Warman

At the conference "fashion show" of safe and functional workclothes, (from l.) Susan Klitzman models a smoke mask for fire safety along with a household worker's vinyl apron and latex gloves, as WOHRC director Dr. Jeanne Stellman narrates in the background. Sharen Gilner, as a welder, wears a leather bib apron and gloves, six-inch boots with steel toes and a face shield and visor. Adelaide Wiley of the Coalition of Labor Union Women, as a clinical lab technician, waves a "heat defier" glove worn with her disposable lab coat decorated with an ethylene oxide monitor. WOHRC's Eugenia Donahue models NASA's latest space suit and flight boots.

"The exhibits really made me think," said a lab technician. "Now I'd like to learn more."

"It's a great beginning," commented an industrial nurse. "Let's hope we can help more people get educated about occupational health."

"Next time, I wish you would hold a conference just for women in the skilled trades," urged a boilermaker.

These were some of the reactions of four hundred working women, trade union officials, occupational health professionals, employers and supervisors who attended WOHRC's all-day conference, Working Women: Designs for Workplace Health, in New York on September 24.

Those attending seemed particularly intrigued by a "fashion show" of safe and functional workclothes for women in both traditional and nontraditional

jobs — which ranged from a suit by NASA for the first women astronauts to a female coal miner's outfit and a costume for household and custodial workers featuring a vinyl apron, latex gloves and a respirator to filter out dust and harmful vapors.

Interest was also high in exhibits of ten model environments designed to maximize safety and counter stress in the workplace. These included a hospital room with a mechanical patient lifter and a high efficiency air filter to remove contaminants; an office with furniture adjustable to workers' different sizes, anti-glare surfaces and adjustable VDT stands; and an artists' corner where actual silk screening of conference T-shirts was done, while the craftspeople wore protective clothing, used reasonably safe chemicals, and benefited from good ventilation.

IBM, Polaroid, Xerox and the Singer Sewing Machine Company were among the 39 industrial exhibitors, while fashion show models came from trade unions such as District 1199 of the National Union of Hospital and Health Care Employees and the Amalgamated Meatcutters, as well as the Coalition of Labor Union Women and WOHRC staff.

Held on two floors of District 1199 headquarters, the conference also featured two fire safety demonstrations; a continuous closed circuit TV presentation on reproductive hazards in the workplace; a slide show on VDTs and stress; and a roster of expert speakers.

Among the latter was Karen Nussbaum, research director of the Working Women Education Fund, who was introduced to the conference as "the

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"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.

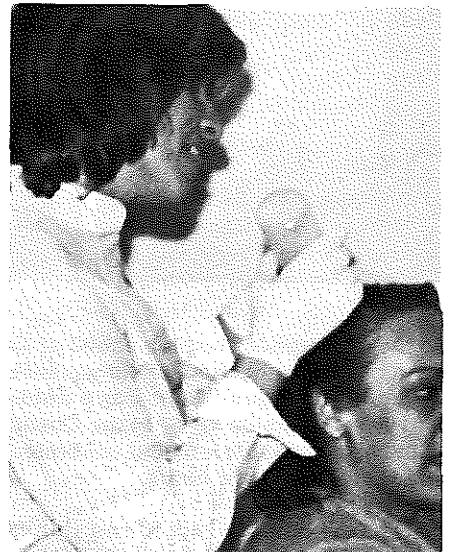
However, its replacement, 4-EMPD — still being tested by the FDA — has already been shown to cause genetic changes in bacteria, while a list of sixteen other hair dyes have tested as carcinogenic and eleven as having mutagenic ingredients.

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.)



Canadian Postal Workers Win Paid Maternity Leave

by Mary Morison

Last August 9, the 23,000 members of the Canadian Union of Postal Workers returned to work after a 42-day strike. One of the main issues in dispute was the union's demand for twenty weeks paid maternity leave. Although a widely accepted principle in much of the rest of the industrialized world, paid maternity leave remains a goal to be won for most workers in Canada.

CUPW won. The final agreement contained a clause giving workers seventeen weeks of maternity leave at 93 percent of full pay. It is an important victory for the Canadian workforce — 40 percent of which is composed of women. But many other gains are still to be made.

At present, Canadian maternity leave is regulated by ten different provincial labor codes and two federal acts covering federal and interprovincial employees. The only payment is through unemployment insurance.

This leaves some workers, such as those on Prince Edward Island — where women comprise 40 percent of the labor force — with no maternity leave at all. Farm workers and domestics in other provinces are also usually not covered.

The unemployment insurance benefits now available are largely inadequate. They provide only 60 percent of average earnings over the last twenty weeks of work, with a maximum of \$189 per week. In order to be eligible, the recipient must have been either working or on unemployment insurance for at least ten weeks between the thirtieth and fiftieth weeks before her due date. This is to ensure that she does not start a job knowing that she is pregnant, simply to get the insurance benefits.

Critics point out that this discriminates against women who may have been unable to find work during that period. They also object to the fact that unemployment insurance coverage does not cover part-time workers putting in fewer than twenty hours a week or women involved in strikes. Since maternity leave benefits cannot be collected until eight weeks before due date, the regulations also discriminate against those who take an early leave.

In addition, there are almost no provisions for taking leave or changing a job to protect the health of the worker or her unborn child. Only one province, Quebec, makes such a provision.

The best that can be said about the current regulations is that, in most provinces, a worker cannot be dismissed for pregnancy, nor can she be required to take an early leave unless it is demonstrated that she can no longer perform her job. And only British Columbia and New Brunswick fail to guarantee her a comparable job at the same wages when she returns.

However, unemployment counselors across the country have reported grave inequities in the administration of the unemployment insurance act, ranging from poor advice to harassment. And the criticisms only beg the basic question — the same question that the postal workers took to the bargaining table. Why should Canadian women be put in economic jeopardy for bearing children? □

Control over Job Linked to Stress

Contrary to popular belief, it is not executives with high pressure jobs who suffer the greatest stress, it was found in a recent study. The most stressful jobs are those that place great demands on the worker, while giving little or no control over the task at hand.

The study, conducted by Professor Robert Karasek of the Columbia University School of Public Health on a large random sample of Swedish men, found that assembly line workers — under high pressure for output but with little control over their work — are in greater danger of heart ailments than managers or lawyers. Control over the job — ability to make decisions, to use skills one possesses and to gain new skills — coupled with job security, makes for less stress even though high performance may be required.

A preliminary analysis of typical women's jobs by Professor Karasek points to similar conclusions. Karasek, who, with Linda Cranor, is now studying women's jobs for demands and con-

trol alone — observes that in most cases "...women's decision latitude on the job is much lower than that for men . . . Furthermore, while men and women report roughly equal workload demands, the combination of high demands with low control is much more common for women. Since these jobs are associated with high levels of psychological stress, this occupational concentration may account for the higher observed rates of mental strain among working women, otherwise often implicitly attributed to female frailty or excitability."

The women's jobs with the highest stress, according to Professor Karasek's analysis, are waitress, sewer, telephone operator, teller, cashier, nursing aide, assembler, keypunch operator, file clerk, office machine operator, and receptionist. Cooks, sales clerks, typists, secretaries and library clerks also operate under a good deal of stress, according to this ratio of control and demands, he found.

Karasek's research also casts doubt on the commonly held belief that "stress-prone individuals bring problems on themselves . . ." The statistics on heart disease among assembly line workers and managers are so different that they cannot be accounted for by personal differences alone. It is more likely, says Karasek, that "the main effects of individual differences are in the effects of stress — whether a person gets physically sick, gets insomnia, an ulcer or suffers psychological strain. Everybody gets some stress." □

Get everyone you know interested in occupational health!

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Please make checks payable to WOHC and mail to Calendar, WOHC, Columbia University, 60 Haven Ave., B-1, New York, N.Y. 10032.

Minority Women Suffer from More Work Hazards

NIOSH report cites electronics, garment, laundry and tobacco industries.

Black, Chicana, Native American and Asian-American women workers are exposed more frequently to more dangerous occupational hazards than whites, according to a report on health hazards to minority workers prepared for the National Institute for Occupational Safety and Health.

The still unpublished report was written after the first minority workers conference on occupational health held in Memphis in 1979. But "nothing much has changed," according to organizers of the second conference sponsored by NIOSH in Cincinnati last July.

Noting that both men and women minority workers are more likely both to suffer and die from job-related illnesses and accidents because they are concentrated in the dirtiest and most dangerous occupations, the report listed these facts about minority women workers:

- **In the electronics industry** which shows a preference for minority women, especially Orientals, "reportedly because they are 'obedient' and have small, nimble fingers," there is an abundance of dangerous solvents such as trichloroethylene, which causes cancers in animals, freon, xylene and methylethyl ketone. These are used to wash the silicon wafers during each stage of a complex process in which thousands of elements are photographically printed on them.

"Other hazards," says the report, "include acids used for etching, lead used for soldering the printed circuits, and gases such as phosphine and arsine (the gaseous form of arsenic), which are used to impart certain electrical properties.

"Workers complain of a wide range of health problems: skin irritation, allergies from sensitization to chemicals, breathing problems, headaches, dizziness, nausea and nosebleeds. Of greater concern is evidence linking many of the substances they use with cancer, birth defects, and liver and kidney damage."

- **Seventy-five percent of this country's 5 million migrant and seasonal farm workers** are Chicano and 20 percent black, many of them women. Their living and working conditions are so bad that their life expectancy is only 49 years. "Pesticides are the worst problem," notes the report. "Many farmworkers and their families are exposed round the clock to poisonous chemicals in the air, on their clothing, and in their living quarters,

which are usually in or near the fields. According to one government estimate, 80,000 to 90,000 field workers get sick and 800 to 1,000 die each year from pesticide exposure."

- **Minority women still largely staff the garment industry**, with Hispanics primarily in New York and Asians on the West Coast. Work hazards come from dyes and finishes on fabrics, which provoke allergies, eye problems and skin rashes; the fine dust from pinking machines which causes asthma and bronchitis; and the pace of piece-work which may lead to high blood pressure. The latter is common among garment workers, as is arthritis of the hand which seems to come from constantly turning the wheels on sewing machines.

- **In the laundry and dry-cleaning industry**, according to the National Cancer Institute, death rates for black workers were double those for whites. Twenty-five percent of workers in the industry are black women. They were more likely than whites to die from

cancers of the liver, lung, cervix, uterus and skin, as well as from circulatory diseases. The chemical hazards include caustic detergents, bleaches and drycleaning solvents which affect the nervous system; carbon tetrachloride, which causes liver and kidney damage; and trichloroethylene and benzidine which are carcinogenic.

- **In the tobacco industry**, blacks comprise 30 percent of the workforce. In North Carolina, home of the industry, cancer is the second leading cause of death among blacks of both sexes between the ages of 40 and 45 and among black women aged 25 to 39. Of all nonwhites in the country, those in central North Carolina, the center for cigarette-manufacturing, have the highest death rate for skin cancer.

In commenting on the generally poor state of nonwhite health in the U.S., the report noted that high blood pressure kills black women between the ages of 25 and 44 seventeen times more often than white women in that age range. □

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Joan of Arc of office workers."

Stress is great problem

Stress is one of the greatest health problems of these workers, said Nussbaum, a pioneer organizer of office workers. "In February of this year," she declared, "NIOSH (the National Institute for Occupational Safety and Health) found higher levels of stress in clerical video display terminal operators than in any other job category, including air traffic controllers." Over 10 million people, mostly women, now work on VDTs in the United States, she reported. Those in the NIOSH study "all reported high levels of anxiety, confusion, depression, fatigue and high rates of health problems."

The problems are not the same for professionals or administrative secretaries who use the machines as only one tool in a more complex and interesting job, Nussbaum noted. She attributed the high level of stress among clerical VDT operators to "little control over the job, little use of skills and boring job content.

"A secretarial job which used to involve a variety of tasks, contact with other workers, exercise of some judgment, has now been reduced to one task

which repeats one job over and over for forty hours a week. Workers relate only to their machines, and machines are programmed to accept only one kind of information. They can automatically pace the work by bringing new tasks onto the screen, and they can supervise and monitor tasks by registering mistakes.

"It is this diabolical use of machines," charged Nussbaum, "that is the cause of stress."

Indoor air pollution, she continued, is another major health hazard for clerical workers. The variety of new and largely untested chemicals used in office buildings, furniture and working materials, plus sealed windows and poorly maintained ventilation systems has led health and safety experts to coin a new phrase: tight-building syndrome, she reported. They conclude that "indoor air pollution is more hazardous than outdoor air pollution."

Women more vulnerable

Women are more vulnerable to stress than men, said Freda Paltiel, senior advisor on the status of women to the Cana-

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Questions for Cosmetologists

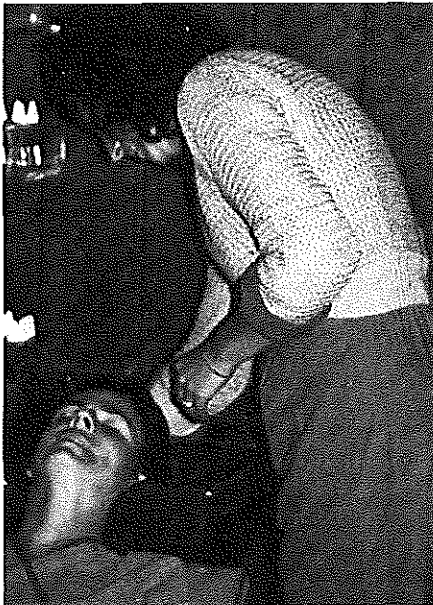
shampoos and nail polish can pose health hazards

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 Barko

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 — thesauritis, 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 NW, Washington, D.C. 20006.

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dian Department of Health and Welfare, who spoke on stress and burnout in women. "So long as women's earnings hover at about three-fifths those of men, women will suffer from greater insecurity and dependency," she declared. The amount of housework that most women do in addition to their paid jobs contributes to their vulnerability to stress, she added.

Psychological tests have shown that uncertainty, unpredictability and lack of control — the conditions under which many women work — are potent stressors, said the Canadian expert. Tests also show that men are likely to feel more confident and satisfied with their own performances than women. "Even women with high accomplishments often do not feel confident about or satisfied with their work," she reported.

In a discussion of cancer in the workplace, Dr. Steven Stellman, a vice president of the American Cancer Society, noted that most cancer is of environmental origin and that most studies of the work environment had been done on men rather than women. However, it is clear that certain jobs held by large numbers of women make them susceptible to cancer, he said. Among them he listed:

- Health care professions which employ over 3 million women and expose them to sterilizing agents, such as ethylene oxide, as well as ultra violet light,

anesthetic gases, X-rays, radioisotopes and the kinds of chemicals used in chemotherapy;

- Clothing and textile industry jobs which employ about a million women and expose them to benzidine dyes, asbestos and flame retardants;

- Laundry work which includes about a quarter of a million women and which uses carcinogenic chemicals in cleaning and dyeing solutions.

Meat wrappers, hairdressers, crafts-women, agricultural workers and electronics workers are also exposed to a variety of toxins, he reported.

Discrimination based on hazards

Describing discrimination against women based on occupational hazards, Isabelle Katz-Pinzler, director of the Women's Rights Project of the American Civil Liberties Union, referred to "the myth of permanent pregnancy," the belief that women are always potentially pregnant and that they are not in control of their reproductive functions.

Such discrimination also assumes that women, but not men, should subordinate their work to their families, she said.

"When a chemical is harmful to men, the chemical is banned," she declared. "When it is harmful to women, the women are banned."

If all hazards were treated equally, Katz-Pinzler asserted, industry would be more inclined to get rid of all of them.

Dr. Jessica Davis, chief of the division of genetics at North Shore-Cornell University Hospital, said that most teratogens, or substances that cause birth defects are not really yet known, and that this includes most environmental chemicals.

However, studies on chemicals are now being done, she reported. A hearing scheduled the day after the conference in New York would involve veterans of the Viet Nam war, many of whom were exposed to dioxins. These people are concerned, she said, about miscarriages, stillbirths and malformations which might be attributable to such chemicals as Agent Orange.

Sperm are particularly susceptible to mutagens, said Mary Sue Henifin, assistant professor of biology at Hampshire College, but there is little legislation to protect future fathers. □

VDT Report Available

A report on health problems among VDT operators is available from the National Institute for Occupational Safety and Health. It is based on studies of operators in the the San Francisco area made at the request of three California labor unions.

To receive a copy, send a self-addressed mailing label to: NIOSH, Publications Dissemination, DTS, 4676 Columbia Parkway, Cincinnati, Ohio 45226, Attention: VDT.

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