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WOHRC NEWS

WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER
SCHOOL OF PUBLIC HEALTH COLUMBIA UNIVERSITY

••News Briefs••

• **NEWLY-ISSUED OSHA** guidelines allow personal protective equipment to be used to lower noise exposure on the job to the permissible level of 90 decibels averaged over an eight-hour day (90 dBA). Before the November 1983 ruling, which was based on a Circuit Court of Appeals decision, such equipment could only be used when feasible engineering and/or administrative controls failed to lower worker exposure to the permissible level. In cases of high noise exposure (e.g. 100 dBA) when hearing protectors alone may not provide adequate protection, feasible engineering and/or administrative controls are still required.

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• **VDT USERS** will find much helpful information on page 5 some of which was adapted from the new book,"Office Work Can Be Dangerous to Your Health," by Jeanne Stellman, Ph.D. and Mary Sue Henifin, M.P.H. Until April 15 the book is available from WOHRC at a discount: $13.55 for an autographed copy of the hardcover; $5.90 for the paperback plus $1 postage and handling for each.

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• **"OUR JOBS,** Our Health, A Woman's Guide to Occupational Health and Safety", published by the Massachusetts Coalition for Occupational Safety and Health and the Boston Women's Health Book Collective covers such topics as workplace cancer, legal rights, stress, and hazard control. For information contact Mass COSH, 718 Huntington Ave., Boston, Ma. 02115.

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• **NEW RESOURCE** material: copies of the new WOHRC booklet,"Job Safety," can be ordered from the Center for $5 a copy plus $1 for postage. The 36-page booklet includes articles on personal protective equipment, why accidents happen, how to improve safety and health through collective bargaining, workplace design, occupational hazards as a source of stress and why safety is an issue whose time has come.

Reproductive Hazards at Work Focus of Key OTA Report to Congress

1984 began with important action in January when an advisory panel met in the Nation's Capitol at the Office of Technology Assessment to guide work on a reproductive hazards assessment requested by members of Congress.

The report was requested by Rep. Don Fuqua, Fla., Chairman of the Committee on Science and Technology. The request was supported by Senator Orin Hatch of Utah, Chairman of the Senate Labor and Human Resources Committee, and California Congressman George E. Brown, Chairman of a subcommittee of the House Agriculture Committee.

An OTA report has great significance because it is a nonpartisan analysis that is used by legislators when proposing changes in the law. And, OTA reports are available to the public.

Past health-related OTA reports have concentrated on such controversial issues as genetic screening in the workplace and cancer testing technology.

The report will be drafted by OTA staff members with expertise in different fields in cooperation with the advisory panel. WOHRC Director, Dr. Jeanne Stellman, serves on this panel as do lawyers, physicians, labor and industry representatives, environmental health specialists and other key people from across the country.

According to OTA Project Director, Dr. Louise Williams, the report will in-

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It's fitting that our top news story is related to a very old one—the reproductive risks of lead exposure—featured in a new column linking issues of the past with today's problems. Written by Prof. Vilma Hunt, advisory panel member and top environmental scientist, "Work History" premieres on p. 6.

Barbara Augliero

FASHIONED FOR SAFETY: The 1984 WOHRC "Fashion Show" of protective gear in women's sizes features such items as this steel-mesh glove/arm guard combo for meat cutters and electronics workers. Contact Amy Rosenberg at WOHRC, seen above, to arrange a free show for your group.

HEALTH WORKERS UPDATE

OSHA Aims To Cut Hepatitis Virus Risk

"OSHA is aware that health care professionals are at significant risk of contracting hepatitis B virus," Assistant Secretary of Labor Thorne G. Auchter, head of the Occupational Safety and Health Administration, said in announcing that local OSHA offices will serve as resource centers for information and guidance in identifying and educating high risk workers.

Each year some 10,000 people are hospitalized with hepatitis, an often serious liver inflammation. Approximately one percent of all hospital health care workers are chronically infected. However among high risk workers—e.g. emergency room workers, dialysis unit workers, IV therapy teams, surgical and pathology staff—the long-term risk of contracting hepatitis rises to 15-30% of exposed personnel.

The hepatitis risk can be lessened in two ways: immune protection and good work practices.

Inactivated hepatitis B virus vaccine is about 90% effective in preventing infection in susceptible people though safety precautions are still necessary. More than 200,000 people have been vaccinated in a three-injection procedure. Also, immune globulin is used at times to provide a very limited, short-term kind of protection.

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WOMEN'S OCCUPATIONAL HEALTH RESOURCE CENTER

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(Subscription information on page 6)

The hepatitis risk to hospital workers can also be controlled by:

- Using an identifying system to call attention to infected patients;
- Using gloves and gowns in patient contact or when blood, body fluid or saliva will be touched. This is essential when a worker's hands are abraded or active dermatitis is present;
- Bagging and labelling suspect articles;
- Sterilizing or decontaminating reusable equipment;
- Using disposible needles and syringes. Needles should never be recapped or bent;
- Reporting contaminated needle sticks to supervisors immediately;
- Placing contaminated linen in a laundry bag in the infected area;
- Bagging and labelling contaminated reusable dishes, utensils, trays. Use of gloves by dishwashers;
- Labelling contaminated lab specimens and disinfecting or bagging container if the outside is contaminated;
- Bagging, labelling and properly disposing of dressings and paper tissues;
- Following CDC guidelines in room cleaning;
- Immediately cleaning blood spills with detergent and water;
- Wearing gloves for oropharynx, gastrointestinal or genitourinary tract exams. Instruments and materials from such examinations should be handled only with gloves. Hands should be washed when gloves are removed. □

Handling Drugs Possible Health Risk

A study done at the University of Oulu in Finland adds to increasing evidence of risk to workers dealing with cancer drugs.

Intensive physical workups, including biopsy, were done on three consecutive head nurses with symptoms such as constant headaches. Although these women had no drinking problems, liver damage was found.

The researchers noted that "handling of cytostatic drugs may insidiously damage the liver, which, with time, seems to lead to irreversible fibrosis," and that ordinary liver function tests seem not to pick up the subtle intracellular processes before marked damage occurs.

Previous studies done elsewhere showed the mutagenic effect of handling cancer drugs.

One of the Finnish nurses worked with bare hands and without a face mask for six years. This echoes a WOHRC study (see the WOHRC Fact Sheet entitled "Handling Chemotherapeutic Drugs") which emphasized the need for safety procedures and the fact that in some U.S. hospitals with such regulations, protective measures often were ignored. □

Malpractice Woes

In recent years, occupational health nurses have earned greater clout—more responsibility and more independence. But this leap forward has been at some cost: more occupational health nurses are defendants in negligence or malpractice suits.

For example, in one classic case, an occupational nurse treated a skin puncture. In follow-up visits, it was noted that the wound seemed closed but a red mark persisted. Ten months later the worker insisted on seeing a doctor who diagnosed skin cancer. The nurse should have noted a cancer warning signal—a sore that does not heal—and made a referral. Fifteen thousand dollars was awarded to the worker.

According to Elizabeth A. Bowyer, R.N., a law student associated with the journal, "Law, Medicine & Health Care," "although every nurse is personally accountable for his or her own acts or omissions, liability may attach often to the nurse's employer or supervising physician" because they are in a position to control a nurse's duties. If a nurse is an independent contractor, he or she is liable.

Bowyer says nurses should be aware that the rules of liability are complicated and one's position should be clear at the time of employment. □

OTA continued from page 1 .
clude evidence supporting existing standards; cite workers at possible risk; review the validity of different kinds of testing, and cover legal matters such as "right to know" laws, civil rights and sex discrimination. She expects the report to be available by early spring 1985.

Individuals or groups wishing to have input can receive a list of panel members from WOHRC or they might address members of Congress who requested the report. □

WOHRC FACT SHEET

WOMEN"S OCCUPATIONAL HEALTH RESOURCE CENTER

ASBESTOS: What to Do; When to Act

Asbestos is an example of a good commercial material with bad health implications. Although some 5 million tons of asbestos are produced annually, and there are an estimated 3,000 ways to use it—asbestos is used in roofing and flooring products; reinforcing material in cement; pipes, sheets and coating materials; friction products, fireproofing textiles and thermal and acoustical insulations—a great body of research has shown that asbestos fibers can cause cancer and debilitating lung diseases. Historically, the danger to workers with high levels of exposure was the first to be defined. Today we know that long-term, low-level exposure presents a real hazard to other workers, particularly cigarette smokers. And, risk to the public is a growing concern.

Although the asbestos problem calls for attention, knowing when to act and just what to do is essential. Dealing with asbestos can be both dangerous and expensive. Fortunately, there are step-by-step ways to proceed.

Asbestos is a generic term covering a wide variety of naturally-occurring mineral silicates which are separable into fibers. The fibers of commercially valuable asbestos are nonflammable, strong, fairly resistent to chemicals, and have thermal and electrical insulating properties. Given these attributes, it's no surprise that the U.S. uses some 900,000 tons of asbestos annually, mostly in the construction industry.

But asbestos fibers have other properties as well—because of their fibrous form, small size and resistence to degradation, they can remain suspended invisibly in the air we breathe for long periods of time, posing a serious health hazard.

Asbestos fibers can be released into the air during mining, milling and processing. For commercial use, asbestos fibers are generally mixed with other materials. These mixtures are often friable, which means that they can be easily crumbled or damaged, releasing fibers into the air as the material ages or is disturbed. Friable asbestos material presents a hazard during installation and in the surrounding area thereafter. Even if asbestos fibers have settled, they can re-circulate if they are disturbed for example, by a janitor dusting or sweeping.

Last November, OSHA issued an Emergency Temporary Standard lowering the existing permissible exposure level by 75% to 0.5 fibers/cc. Also, EPA has ordered all schools to inspect their buildings for asbestos and report their findings to employees and parents.

The possibility of asbestos contamination is literally everywhere in our surroundings. To best address the problem, it is necessary to (1) assess whether or not

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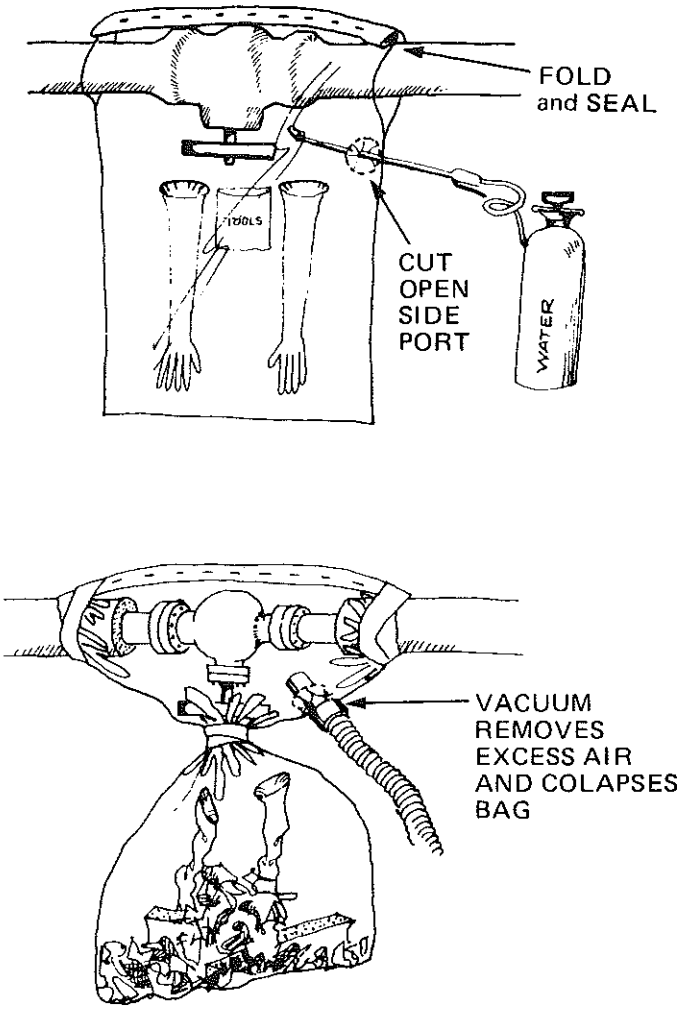

Asbestos Control Technology

The "Profo Bag," designed for encapsulated removal of asbestos pipe covering, is an example of the many commercial products available to make asbestos control easier and safer.

continued
it exists and the extent of exposure and (2) to decide the most effective, safest and economically feasible way to correct the situation.

Assessment should be done in this order: inspection; sampling; analysis, exposure analysis.

Assessing the Problem

• **Inspection**—Asbestos was used in cement products, plaster, fireproof textiles, thermal and accoustical insulation, wall or ceiling decoration.

Friable materials are usually found on overhead surfaces, steel beams, ceilings and occasionally on walls and pipes. As soft or loosely bound asbestos material ages or is damaged, asbestos fibers are likely to be released. It is therefore most productive to inspect areas where water damage might occur, such as ceilings; areas where there is a lot of maintenance activity or other activity such as ball throwing in a gymnasium where direct contact can occur; areas where vandalism —scraping or gouging walls—has occurred; areas where vibration from sources within or without the building might loosen softly-bound asbestos.

• **Sampling**—Friable material should always be sampled and this can be done fairly simply. Sampling should be done when the area in question is not in use with as few people around as possible. Sampling can be done by using a dry clean container such as a film canister or a small wide-mouth jar to gently bore into the material with a twisting motion. The jar should be tightly sealed and labelled. It should always be held away from the face. The area being sampled can be misted with water to prevent fiber release. If any material breaks off and falls on the floor, wet mop. These "bulk samples" should be taken for about every 5,000 feet of material of the same color and texture. If many samples are to be taken, a NIOSH approved respirator should be worn. The air in a suspect area can also be sampled by means of a special pump. However this does not reveal the source of the fibers.

• **Analysis**—The State Asbestos Program Agency or the EPA Regional Asbestos Coordinator should be contacted for their assistance and advice in finding a laboratory competent in bulk sample analysis. The laboratory should be able to do polarized light microscopy and x-ray diffraction, if necessary, and to provide a complete report.

• **Exposure Assessment**—If the lab does confirm the presence of asbestos, the degree of exposure can be assessed by checking the following factors: condition of the friable material; how big an area is of concern; the possibility of water damage; how much the area is used and the likelihood of damage; how friable the bound material is and if it is exposed. Friable asbestos in a direct air stream or air plenum may or may not represent a danger depending on the potential for human contact.

Controlling Exposure

If there is no evidence of asbestos in the air, no action save for follow-up inspection is necessary. If action must be taken, temporary safeguards such as: substituting wet cleaning methods for dry ones (e.g. mopping instead of dusting); re-scheduling to reduce bystander or building user exposure, and filtered respirators for maintenance workers should be employed.

Depending on many factors—the characteristics of the material; structure use and configuration; user activity; cost—asbestos control can be achieved in two ways: (1) Containment or (2) Removal.

Containment

It is possible to isolate friable asbestos material to reduce or prevent fiber release by either enclosing or encapsulating it.

Enclosure places a barrier such as a suspended ceiling or attached lath system between the friable asbestos and the surrounding area. Fiber fallout continues but it occurs behind the barrier. While it can reduce exposure, this method has some drawbacks: long-term effectiveness is uncertain and continued air monitoring is necessary.

Friable asbestos can also be contained by the application of a sealant to envelope or coat the fiber matrix to eliminate fallout and protect against contact damage. For example, latex paint can be sprayed over the area. While sealants can be highly effective, they are not a total solution. They must be carefully chosen and a sealed-off surface is not forever immune to damage. Also, the fiber release problem will reappear when renovation or demolition must be done.

Removal

Sometimes building characteristics, the inability to eliminate exposure or questions about the health impact of any continued exposure may point to only one solution: removal. The EPA has many regulations about asbestos stripping and removal. Dry removal of untreated friable asbestos material is not recommended. Specific EPA approval is required if it must be used because workers, the rest of the structure and the surrounding community can be affected. The construction of barriers and rapid vacuum techniques are employed in dry removal.

Friable materials can more safely be dealt with using a "wet" technique. Water makes the material less friable. The release of fibers is lessened and the fibers that are released into the air will fall rapidly making their removal easier. Plain water is not an ideal substance to use in removal because it tends to penetrate slowly and incompletely and to cause a runoff which can carry fibers to other areas, fibers that can re-enter the air following evaporation. For this reason a "wetting" agent or surfacant is used which greatly reduces the amount of water needed for saturation and results in a better job. While wet removal reduces the asbestos exposure level by 75%, "wet" water reduces the exposure level by 90% as compared to dry removal.

Asbestos control is a complicated job but one made easier by the kind of step-by-step approach that we have outlined, the use of EPA guidelines, and the variety of commercial services and protective devices and tools available. □

This fact sheet reflects information in EPA Guidance Document #450, "Asbestos-Containing Materials in School Buildings" and Document #560, "Guidance for Controlling Friable Asbestos-Containing Material in Buildings."

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Glare, Screen Quality Determine Eye Comfort

Is it possible to work at a VDT and enjoy visual comfort too?

The answer is yes, but a qualified yes because changes might be necessary to achieve an acceptable work situation.

While the long-term visual impact of VDTs is not known—and this is a good reason why a base eye examination and follow-up record keeping is vital—there is information about sources of visual problems.

Visual strain and stress is determined by the brightness of the characters on the screen, the degree of contrast between characters and background, how long the characters last, how much they wave and flicker and the shape of the letters. Guidelines are in the following chart.

Screen

Dark green with lighter green or yellow characters or black with white.

Screen Brightness

Adjustable across a wide range including contrast adjustability.

Character Generation

A 5 by 7 or a 7 by 9 dot matrix

Character Refresh Rate

40-60 hertz minimum for low to medium persistence phosphor, with higher levels preferable.

Character Size

For normal viewing distance of 70 cm or 28 inches. Min. height 3.2-4.2 mm; Max height, 4.5 mm; width/height ratio, 3:4-4:5.

Spacing

½ character height between words; 1 character height between lines.

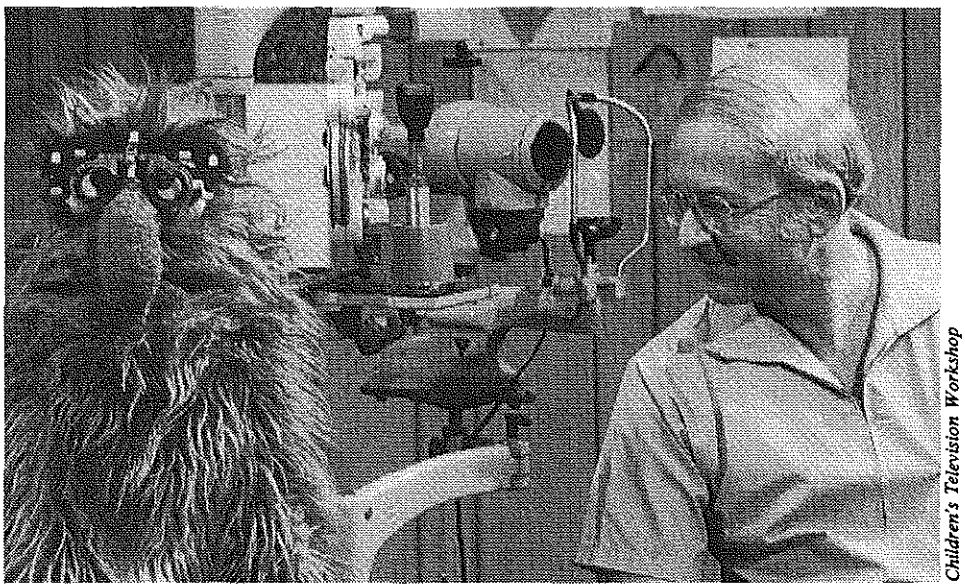
"VDT News" a bi-monthly newsletter reporting exclusively on VDT operator health and safety began publication in January. Prepaid subscription ($18 for individuals; $35 for institutions) should be sent to VDT News, P.O. Box 1799, Grand Central Station, N.Y., N.Y. 10163. A "VDT News: 1983 Health and Safety Update" also is available for $7.50 including postage and handling.

The elimination of eye glare is crucial in easing the eye burden of VDT work. All equipment and furniture that surrounds the VDT workstation should be made with a matte finish to minimize reflection of light off the surface and hence glare. Overall lighting should be at the lower end of the scale of 30-150 footcandles recommended for offices. Room fixtures should be shielded and indirect light is best. Concealed lighting that is reflected from the upper walls is preferred. Individual local desk lighting should be shielded and fitted with a dimmer. Windows should be fitted with adjustable blinds or curtains. VDTs should *always* be placed at right angles to windows, not facing them.

The VDT screen itself can be a major source of reflected glare. Screens produced with fine-grained anti-reflection coatings, called anti-glare displays, can reduce glare. Separate filters also can be purchased to attach to the screen, however this may reduce the screen image resolution. Since there are many products on the market and new ones are always coming along it may be best to purchase equipment from a vendor who will permit exchange. □

This information comes from "Office Work Is Dangerous to Your Health" by Jeanne Stellman, Ph.D. and Mary Sue Henifin, M.P.H. To order see p. 1.

VDT Specs Worth Exploring



Children's Television Workshop

As the "Sesame Street" eye doctor, Melvin Schrier, O.D. dealt with hairy monsters (see above)—now he's working with another possible "monster", the VDT screen.

"It should be possible to work all day at a VDT screen and go home and read a newspaper," Dr. Schrier said in a recent interview.

To this end he invented a portable testing system, "EyeTech", marketed by Levolor, to identify people whose eyes are stressed by VDT work so that corrective action can be taken.

According to Dr. Schrier, ordinary "20/20" eye tests are not applicable to VDT work because they measure the ability to see clearly at 20 feet while a VDT operator needs good visual acuity at about two feet. Furthermore, the VDT workers need to be able to rapidly shift and point their eyes from document to screen to keyboard.

VDT glasses for on-the-job use only, can be prescribed to correct strain or any latent visual problem that may surface when one spends hours before a screen. People who already wear corrective reading glasses or bifocals may need additional VDT glasses. Tinting lenses may also aid VDT users.

"No one should suffer visually or lose a job," Dr. Schrier said. "In fact management should consider paying for testing and corrective work because a visually comfortable person works better."

VDT operators should always report the distance between their eyes, the keyboard and screen to eye specialists. □

Work History

An Old/New Story

by Vilma R. Hunt

Newspaper and TV accounts of lead poisoning in the workplace or at home often make it sound like a new problem among the many in our chemical environment. Historians can tell another story going back hundreds of years.

In America we've watched the recent events at Willow Island, W. Va., where five women chose sterilization to avoid losing their jobs in the lead pigment department of American Cyanamid. The management policy was to prohibit employment of women who could become pregnant. Such policies were being argued 75 years ago at international meetings. Italy and Austria kept women out of the printing trades arguing that the danger of lead poisoning was too great; women were more susceptible and serious effects were passed on to their children. The U.S., French and British position then was that print shops could be cleaned up, which would avoid shutting women out of the industry—one of the few where they had a toe in the door.

Alice Hamilton, America's first occupational physician, wrote in 1917: "the typographical industry is not the only one in which efforts have been made to prohibit work by women on the ground of danger to health... whatever process in printing is dangerous to women has dangers for men also, and as we have repeatedly shown, all these dangers can and should be prevented."

She also studied the pottery industry to explore the claim of women's susceptibility to lead poisoning. She found that in the potteries of East Liverpool and Trenton, N.J., more women *were* suffering from lead poisoning than were men. But she also reported that the men were members of a strong union—they were well paid with good living conditions. "The women were unorganized, underpaid, poorly housed, poorly fed and subject to the worry and strain of supporting dependents on low wages. In the organized pottery fields, in the tile works, and in the art potteries of the Zanesville district of Ohio, the men and women were in the same economic class, making the same low wages with everything that implies. Here the rate of lead poisoning was slightly greater among men."

The concern that lead caused problems for reproduction not only for women, but for men as well, was well known throughout Europe in the 1800's. Miscarriages, stillbirths, malformed babies and convulsions in children were all related to the fathers' exposure to lead.

Although the setting of the lead standard for occupational exposure has now resulted in much reduced lead exposures, well below levels that workers experienced in the 1800's and later, age-old beliefs that women are susceptible and men invincible still permeate TV and newspaper reports. □

Vilma R. Hunt, Professor of Environmental Health, Pennsylvania State University, is a public health scientist whose research, lectures and reports to policy makers are well known in the U.S. and abroad. With a background in physical anthropology and radiation biology, she has worked on such issues as biological monitoring in the workplace; infant mortality, public health and social policy, and the health of working women. Specific reference material for "Work History" columns can be obtained from WOHRC.

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