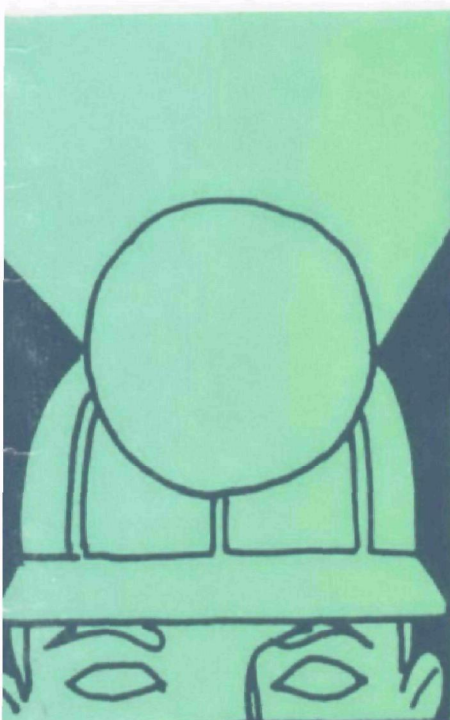

PRIMARY CARE **ENVIRONMENTAL AND OCCUPATIONAL HEALTH HAZARDS** GUIDE





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To the Primary Care Practitioner:

This guide provides a quick reference about the environment and work-relatedness of disease.

Its purpose is to alert the practitioner to the role of environmental and occupational factors in the etiology of diseases and to aids in their diagnosis.

The Booklet Includes:

- An overview of the problem,
 - A list of common signs and symptoms,
 - A sample environmental and occupational history form that can be photocopied for inclusion in all patients' records,
 - A table of selected toxic exposures and manifestations,
 - Agencies and organizations serving as resources,
 - Recommended desk-top references on the subject of environmental and occupational medicine.
-

An Introduction to Environmental and Occupational Health Hazards

New developments in technology and energy production and rising levels of chemical manufacturing and disposal are increasing the quantity of potentially hazardous substances in the environment. Additionally, non-biodegradable materials and longlived radioactive products have magnified the scope and duration of pollutant problems and their impacts on human health.

Over the past decade, a substantial number of health problems have been traced to exposures to hazardous substances in the workplace, home, and community environments. Diseases which have received widespread attention, such as lead poisoning and asbestosis, serve to illustrate the causal relationship between environmental and occupational exposure and human disease. Mortality from cancer is rising, and there is growing scientific consensus that 70-90 percent of all cases are attributable to environmental factors. These include worksite exposures and other environmental factors such as smoking, diet, and the physical environments of home, school, and community.

The practitioner will face a variety of problems in the diagnosis of environment and occupation-related diseases:

- Many symptoms, even though they are common to a number of problems, may be specifically related to environmental and occupational exposures and should be considered in the differential diagnosis.
- Some exposures result in immediate effects or effects which develop within a short period of time (e.g., CO, chlorine, food poisoning). Other exposures produce chronic effects which appear long after initial exposure (e.g. mercury, noise, radiation).
- Effects of exposure to combinations of substances may be synergistic. An example of this type of interaction is cigarette smoking and exposure to asbestos dust. It is known that smokers who work with asbestos are at increased risk of lung cancer.

-
- Susceptibility to environmental exposures varies from person to person.
 - Relationship between a patient's job title and toxic exposures may be obscure. The practitioner may need to probe beyond the patient's job title to discover actual work practices and exposures, such as the proximity of the individual to paints, solvents and cleaning compounds, welding and grinding operations, pesticides, etc.
 - The complex environment provides a mixture of stressors and ambient pollutants in air and water (SO₂, hydrocarbons, pesticides, fertilizers, noise, PCB's, etc.), which may give rise to health problems or augment occupational exposures.
 - Family members may be exposed to toxic substances brought home on workers' clothing or hair.

Given the difficulties of the practitioner's task, awareness and suspicion are the greatest "weapons" in tracking down environmentally and occupationally induced disease. The practitioner must take an environmental and occupational history on each patient. A sample form is included in this booklet. Once the history has been taken, it is necessary to relate the symptoms to possible toxic exposures. The tables and supplementary information contained in this guide will be an aid in evaluation.

Signs and Symptoms That May Be Related to Environmental and Work Exposures

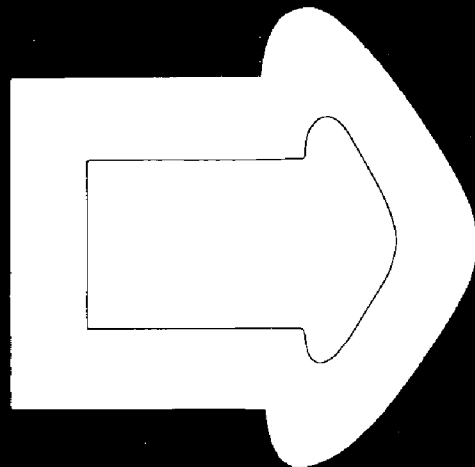
Commonly observed signs and symptoms should be considered as potential indicators of toxic exposure:

System or Site	Signs and Symptoms
General:	Weight loss, change in appetite, fatigue, new sleep difficulties, irritability
Dermatological:	Skin rashes, allergies, sores
Head (eye/ear/nose/throat):	Hearing loss, eye problems, headaches, change in taste, rhinitis
Chest:	Shortness of breath, asthma, cough and sputum production
Heart:	Chest pain, circulatory changes
Abdominal:	Nausea and vomiting, constipation
Reproductive System:	Infertility, miscarriages, birth defects
Musculo-Skeletal:	Back pain, joint pain
Central Nervous System:	Weakness, tremors, personality changes, headaches

Environmental and Occupational History Form

The following history form is adapted from one currently in use at the Mount Sinai Hospital in New York City. It may be freely photocopied and should be included with individual patient's records. The form will assist the practitioner in gathering information on a patient's work, home, and community environments.

The patient is the primary source of information about his or her environment. While the patient may not have specific knowledge about toxic substances or easily recall past exposures, it is the practitioner's role to work with the patient to develop this relevant information.



PATIENT ENVIRONMENTAL / OCCUPATIONAL HISTORY FORM

Date Taken:

Patient Name:

I. WORKPLACE

Current Work (i.e., carpenter, housewife, police officer, etc.)

Name and address of company or employer (if any) _____

How long at this job? _____

General description of work _____

Any contact with dusts, fumes, vapors, gases, chemicals, radiation, pressure, excessive noise, vibration, temperature extremes? _____

Any adverse effects noted? (Describe) _____

Previous Work	Years	Description of Work	Exposures
First regular job	_____	_____	_____
Next regular job	_____	_____	_____
Next regular job	_____	_____	_____
Next regular job	_____	_____	_____
Next regular job	_____	_____	_____
Vacation jobs	_____	_____	_____

"Second" jobs _____

Temporary work _____

Work in military services _____

2. HOME AND COMMUNITY

Are there any conditions in your home which you think may affect your health (use of aerosol sprays, chemicals or cleaning agents, recent reconstruction, painting, etc.)?

Does anyone in family work in a trade where hazardous materials could have been brought home (i.e., asbestos, lead, beryllium, vinyl chloride, etc.)? _____

Did you ever live near a plant, shipyard, mine, chemical (petroleum) factory, dumpsite?

Did you ever live near a busy highway, street or gas station? _____

Hobbies involving adverse exposures: (furniture refinishing, arts and crafts, etc.):

3. CIGARETTES:

Ever smoke? _____. If yes, age started _____. On average, number/day _____. Current smoking, number/day _____.

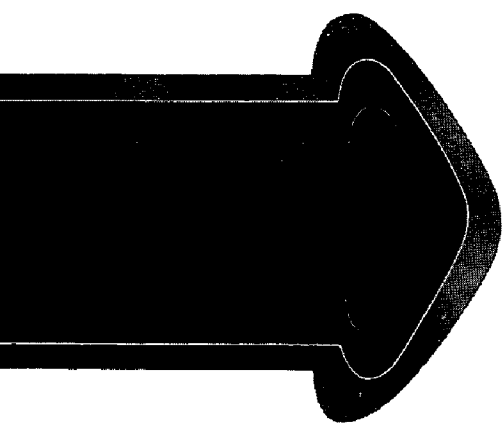
If stopped, how long _____.

Cigars/pipe:

Ever smoke? _____. Current smoking, amount _____. If stopped, how long? _____

4. COMMENTS:

ENVIRONMENTAL/OCCUPATIONAL HEALTH



This table is a guide to potential health effects from exposure to hazardous agents in the workplace, home, and community environments. Exposures are frequently most intense in the work setting, but hazardous materials used in the workplace may also be brought into the home. In addition, individuals in the community are exposed to toxic substances found in air, soil, water, foods and consumer products.

This table should be used in conjunction with the environmental and occupational history obtained from the patient. While not all-inclusive, the table will assist in determining the environment and work-relatedness of the patient's symptoms. Individual allergic responses, extreme hypersusceptible reactions, and communicable diseases are not included in the table. Also omitted are hazards attributable, at least in part, to personal habits, i.e., smoking, drinking, drug use, personal hygiene, poor nutrition, etc.

Organ System (Primarily Affected)	Manifestations Acute and Chronic
Skin	Dermatitis Chloracne Skin Cancer
Respiratory System	Acute pulmonary edema and pneumonitis Asthma Chronic lung disease Lung cancer
Cardiovascular System	Arrhythmias Angina Intermittent claudication Arteriosclerosis
Gastrointestinal System	Abdominal pain, nausea Vomiting, diarrhea, bloody stools Hepatic necrosis Hepatic cancer Hepatic fibrosis
Genitourinary System	Aminoaciduria Chronic renal disease Bladder cancer
Nervous System	Headache/convulsions/coma Extrapyramidal disorders Peripheral neuropathy
Auditory System	Hearing loss (and stress reactions)
Ophthalmic System	Eye irritation Cataracts
Reproductive System	Spontaneous abortions Birth defects Infertility
Hematological System	Pancytopenia and aplasia Acute myelogenous leukemia Lymphadenopathy, anemia, buboes.
Nasal Cavity and Sinuses	Inflammation Cancer

HAZARDS AND MANIFESTATIONS

Environments and Practices Conveying an Increased Risk of Developing Disease

Chemical and Physical Agents

Electroplating; photoengraving; metal cleaning; wood preserving; food preserving; contact with foods and cosmetics; use of household chemicals and soaps.

Hydrocarbon solvents; beryllium; arsenic, zinc oxide, PCB, nickel, dioxane, soap, pentachlorophenol, bismuth, alcohol, drugs.

Construction and insulation; textile manufacturing; painting; arc-welding; meat wrapping; animal handling; in-flight airline services; radiological work; exposure to traffic exhausts, dust, and industrial air pollution; improper ventilation and heating.

Arsenic, asbestos, chromium, iron oxide, ionizing radiation, beryllium, ozone, nitrogen oxides, textile dusts, nickel, carbonyl, aerosolized plastics (e.g., vinyl chloride, teflon), dusts, fumes, vapors.

Exposure to traffic exhaust; diesel engine operation; sewage treatment; cellophane and plastic manufacturing; motor vehicle repairing; extreme hot/cold; contact with synthetic film and hazardous agents in art and hobby supplies; pest extermination.

Carbon monoxide, hydrogen sulfide, barium, organophosphates, freon, glues and solvents, heat and cold.

Jewelry making; dry cleaning; refrigerant manufacturing; food processing; chemical handling; printing; contact with lead-based paints and components of batteries and electrical equipment; consumption of improperly handled food.

Heavy metals (e.g., lead, cadmium), carbon tetrachloride, chlorinated hydrocarbons, phosphorus, beryllium, arsenic, nitrosamines, vinyl chloride, aflatoxin, bacterial toxin.

Plumbing; soldering; exterminating; textile manufacturing; contact with components of batteries.

Cadmium, lead, mercury, organic dyes, halogenated hydrocarbons.

Wood working; painting; exposure to traffic exhausts; fireproofing; plumbing; soldering; manufacturing of textiles and petrochemicals; contact with pesticides and battery components; consumption of improperly prepared food.

Mercury, manganese, lead, carbon monoxide, boron, fluoride, organophosphates, hexane, organic solvents, wood preservatives (pentachlorophenol).

Subway operations; metal working; construction; activities involving loud music.

Loud noise, high frequency noise.

Petroleum refining; chemical handling; paper production; laundering; contact with photographic films; glass blowing.

Nitrogen oxides, acetic acid, formaldehyde, radiation.

Operating room procedures; contact with pesticides and contact with battery components.

Anesthetic gases, ionizing and non-ionizing radiation, lead, chemicals (dioxane), pesticides (DBCP).

Dye manufacturing; dry cleaning; chemical handling; contact with hazardous agents in art and hobby supplies; contact with rodent excreta, rodent bites

Benzene, arsenic, organic dyes, arsine, nitrates, drugs, lead.

Welding; photoengraving; manufacturing of glass, pottery, linoleum, textile, wood and leather products; contact with battery components.

Arsenic, selenium, chromium, nickelcarbonyl, wood.

RESOURCES

in the New York City Area for Information and Assistance

Various government and non-government agencies have been established to disseminate environmental and occupational health and safety information. The following is a list of resources in the New York City area that may be contacted by the health care practitioner as well as the patient or concerned citizen.

1 The National Institute for Occupational and Safety and Health (NIOSH)

NIOSH is a division of the U.S. Public Health Service responsible for educating professionals and conducting research on the effects and control strategies of occupational hazards.

NIOSH can provide (1) technical and non-technical publications on occupational health and safety problems, and (2) technical or consultative services related to specific occupational health problems.

Contact NIOSH for information regarding:

- research and testing related to toxic substances,
- protective equipment,
- effective testing procedures for evaluation of the workplace.

NIOSH

26 Federal Plaza

33rd Floor (Rm. 3300)

New York, N.Y. 10007

Phone: (212) 264-2485

NIOSH provides technical support to twelve Educational Resource Centers (ERCs) throughout the country (see below.)

RESOURCES

2 The Educational Resource Center (ERC)

Contact ERC regarding:

- development of degree and continuing medical education programs
- training in all areas of occupational safety and health

ERC

Environmental Sciences Laboratory

Mt. Sinai School of Medicine

1 Gustave Levy Place

New York, N.Y. 10024

Phone: (212) 650-6777 (Edwin Holstein, M.D.)

3 The Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

OSHA develops standards for occupational safety and health, and enforces these standards through an inspection procedure. In the New York City area, inspections are carried out by the five area offices which cover the five boroughs and Long Island.

OSHA also publishes many non-technical publications which address employer/employee rights and responsibilities under the Act, OSHA procedures, and OSHA standards.

Communicate with OSHA when:

- you believe the need for Federal regulatory action is called for in the area of occupational safety and health

OSHA

Region II

1515 Broadway

New York, N.Y. 10036

Phone: (212) 399-5754

RESOURCES

4 The New York Committee for Occupational Safety and Health (NYCOSH)

NYCOSH is an independent organization composed of trade unionists, workers, health and legal professionals, and educators working in the area of occupational health and safety.

NYCOSH offers materials geared to workers' needs, seminars, workshops, and conferences for both professionals and non-professionals.

Contact NYCOSH for information regarding:

- technical support in evaluation and control of health hazards,
- educational programs for local unions,
- preventive training for medical students and professionals.

NYCOSH

P.O. Box 3285, Grand Central Sta.

New York, N.Y. 10017

Phone: (212) 349-6478

5 Center for Occupational Hazards (COH)

COH publishes a newsletter, operates an information center, and can provide information on various occupational health problems and techniques for control. The Art Hazards Project is presently the strongest element of COH.

COH should be contacted for information regarding:

- occupational health hazards of chemicals, particularly chemicals used by artists and craftspersons.

COH

5 Beekman Street

New York, N.Y. 10038

Phone: (212) 227-6220

RESOURCES

6 Poison Control Center; New York City Department of Health

The Poison Control Center should be contacted for information on:

- chemical agents involved in cases of poisoning
- poisoning treatment information (to physicians)
- initial first aid (to the general public)

The Poison Control Center
New York City Department of Health
455 First Avenue
New York, N.Y. 10016
Phone: (212) 340-4494 (24 hr. service)

7 The Women's Occupational Health Resource Center (WOHRC)

WOHRC, in affiliation with Columbia's School of Public Health, addresses women's occupational health and safety needs. The center offers a research service, library, bi-monthly newsletter, fact sheets, workshops, conferences and speakers' bureau.

The Women's Occupational Health Resource Center
School of Public Health
Columbia University
60 Haven Avenue, B-1
New York, N.Y. 10032
Phone: (212) 694-3464

REFERENCES

This handbook is meant to serve as an initial aid and reference only. Individual situations and patient complaints will often lead the practitioner to seek detailed information. The following reference books and information sources will be extremely valuable. Sources included in this list will help direct both the health practitioner and the patient to multiple additional references pertaining to specific problems.

Occupational Diseases—A Guide to their Recognition, Revised Edition, June, 1977; U.S. Department H.E.W., DHEW Publication No. 79-116; edited by S. Kusnetz and M. Hutchinson, GPO Stock No. 017-033-00266-5.

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

\$5.25*

NIOSH/OSHA Pocket Guide to Chemical Hazards; DHEW (NIOSH) Publication No. 78-210. GPO Stock No. 017-033-00342-4.

Superintendent of Documents (see above)

\$5.00*

A Guide to the Work-Relatedness of Disease—Revised Edition, DHEW (NIOSH) Publication No. 79-116.

PUBLICATION DISSEMINATION, DTS
National Institute for Occupational
Safety and Health
4676 Columbia Parkway
Cincinnati, Ohio 45226

FREE*

(When writing, please refer to Publication No.)

Occupational Lung Diseases—An Introduction, American Lung Association, May, 1979.

American Lung Association
1740 Broadway
New York, New York 10019

FREE*

REFERENCES

The following group of references are distributed by private publishing houses. Each reference is followed by its publisher's address although any of the books may be ordered through a medical bookstore.

Hunter, Donald: **The Diseases of Occupations**; 1978 6th edition

Little, Brown & Co.

34 Beacon Street

Boston, MA 02106

\$75.00*

Zenz, Carl: **Occupational Medicine: Principles and Practical Applications**, 1975.

Yearbook Medical Publishers

35 East Wacker Drive

Chicago, Illinois 60601

\$55.00*

Waldbott, George L.: **Health Effects of Environmental Pollutants**, Second Edition, 1978.

The C.V. Mosby Company

11830 Westline Industrial Drive

St. Louis, MO. 63141

\$14.95*

Hamilton, Alice, & Harriet Hardy: **Industrial Toxicology**, Third Edition, 1974.

Publishing Sciences Group, Inc.

411 Massachusetts Avenue

Acton, Mass. 01720

\$26.00*

Saxe, N.I.: **Dangerous Properties of Industrial Materials**, 4th Edition, 1975.

Van Nostrand Reinhold Co.

135 West 50th Street

New York, N.Y. 10020

REFERENCES

Additional sources may be obtained from libraries and not-for-profit agencies including the following:

The Labor Safety and Health Institute (LSHI)

The LSHI publishes workbooks and maintains a library on job safety and health information which may be used by appointment.

LSHI
377 Park Avenue South
New York, N.Y. 10016
Phone: (212) 689-8959

Health PAC

Health PAC is an independent, not-for-profit public interest center concerned with monitoring and interpreting the health system. Health PAC publishes reports and bulletins on various occupational health issues, i.e., asbestosis, black lung, byssinosis, etc.

Health PAC
17 Murray Street
New York, N.Y. 10016
Phone: (212) 267-8890

National Institute for Occupational Safety and Health (NIOSH)

NIOSH is the information dissemination branch of the Occupational Safety and Health Administration under the U.S. Department of Health, Education and Welfare. Numerous publications on occupational and environmental health issues are available, **free**, upon request.

Publications Dissemination, DTS
National Institute for Occupational
Safety and Health
4676 Columbia Parkway
Cincinnati, Ohio 45226

(A "New Publications" list will be sent upon request.)

*Prices subject to change.