

# OCCUPATIONAL HEALTH RISKS CARPENTERS



**A diagnostic toolkit for physicians  
and primary health providers.  
Prevention information for workers.**

**Give pages 3 and 4 of this booklet to your doctor.**

**They give your doctor information about the health risks of your job.**

This booklet was prepared by the Ontario construction industry's Occupational Disease and Research Labour-Management Health and Safety Committee with assistance from the Infrastructure Health & Safety Association (IHSA), the Ontario Ministry of Labour (MOL), the Workplace Safety and Insurance Board (WSIB), and labour and employers in Ontario construction.

The information presented here is for general information only. It should not be regarded or relied upon as a definitive guide to health risks in the trade. This information is, to the best of our knowledge, current at the time of publication. For more information, contact IHSA.

## Tasks and possible hazards

### All tasks

- ▶ **Hand-arm vibration** from equipment and tools
- ▶ **Noise** from power tools, grinders, saws, and mobile equipment
- ▶ **Dust** and **insulation fibres** on construction sites
- ▶ **Solvents and epoxies** in paint, caulking
- ▶ **Wood dust** from cutting, sanding
- ▶ **Hazardous materials from industrial worksites** (coke ovens, refineries, chemical or cement plants, glass plants, factories, pulp and paper mills, power plants)
- ▶ **Fungi/mould** from water-damaged building materials

### Outdoor tasks

- ▶ **Extreme temperatures** (hot and cold)
- ▶ **Ultraviolet** radiation from the sun

### Placing concrete

- ▶ **Hexavalent chromium** in cement dust and wet concrete
- ▶ **Alkalis** in wet concrete
- ▶ **Exhausts** from gasoline or diesel powered equipment

### Framing

- ▶ **Exhausts** from gasoline or diesel powered equipment

### Exterior finishing

- ▶ **Welding fume and gases**
- ▶ **Isocyanates** from spray-foam insulation, adhesives
- ▶ **Exhausts** from gasoline or diesel powered equipment

### Interior finishing

- ▶ **Formaldehyde** from composite wood products, laminate floor, medium density fibreboard
- ▶ **Asbestos** from old pipe insulation, drywall joint compound, plaster
- ▶ **Lead** paint

## How to protect your health

- ▶ Ask your supervisor or employer for safe work **instructions** and training.
- ▶ Consult industrial clients on site-specific health and safety **procedures**.
- ▶ Ask about any hazardous materials or unknown chemicals when **entering** an industrial site for work.
- ▶ Ensure proper **ventilation**.
- ▶ Wear a proper **respirator** when exposed to:
  - Dusty atmospheres
  - Cement or concrete dusts
  - Wood dust
  - Form oil.
- ▶ Wear clothing (e.g., gloves, coveralls, or a welding jacket) or use barrier creams to protect the **skin**.
- ▶ Wear **hearing protection** when exposed to loud noise.
- ▶ Consult **safety data sheets** (SDSs) for information about hazardous chemicals used at work
- ▶ Obey the workplace health and safety **rules**.
- ▶ **Never eat, drink, smoke, or chew gum** in areas contaminated with asbestos, lead, or toxic chemicals.
- ▶ Wash or wipe **hands** clean before eating, drinking, and smoking.
- ▶ Always clean up and change out of contaminated **clothing** before going home at the end of the shift.
- ▶ Wash work clothes **separately** from casual and other family members' clothes.
- ▶ When working in the **heat** or near heat sources, drink lots of water and take frequent rest breaks to prevent heat stress.
- ▶ When working in the **cold** take frequent breaks in a warm area to prevent cold stress.
- ▶ **Report** hazards to your employer.

Workers who are without symptoms and who have been exposed to asbestos may participate in a research study at Princess Margaret Hospital by volunteering to be screened for mesothelioma/asbestos.  
Phone: 416-340-5686 • Fax: 416-340-4964

For more information about health and safety in your job, contact your union or

Infrastructure Health & Safety Association: 1-800-263-5024 • ihsa.ca  
Ontario Ministry of Labour: 1-877-202-0008 • labour.gov.on.ca  
Workplace Safety and Insurance Board: 1-800-387-5540 • wsib.on.ca

## Occupational diseases and hazardous agents encountered by carpenters

**Job function:** A general carpenter constructs, renovates, and repairs structures made of wood, steel, concrete, and other materials in the residential, commercial, and industrial construction sectors and related industries. This may involve:

- Preparing worksites
- Laying out, constructing, and installing formwork and concrete foundations
- Framing floors, walls, ceilings, and roofs
- Finishing interiors and exteriors
- Constructing heavy framing
- Building stairs, posts, and handrails
- Laying out, constructing, and installing doors and windows
- Performing renovations.

### Asbestos-related Diseases

- **Asbestosis**
- **Cancer** (lung, mesothelioma, gastrointestinal)

### Cancer

- **Gastrointestinal**—*asbestos*
- **Lung**—*asbestos, diesel exhaust, coke oven emissions, crystalline silica, environmental tobacco smoke, hexavalent chromium.*
- **Nasal**—*nickel, wood dust*
- **Paranasal and nasopharynx**—*wood dust, formaldehyde*
- **Skin**—*ultraviolet (UV) radiation*

### Miscellaneous Disorders

- **Hantavirus, histoplasmosis, leptospirosis, lymphocytic choriomeningitis**—*rodent, bird, or bat droppings*
- **Hepatitis (chronic solvent toxicity)**—*chlorinated solvents*

### Miscellaneous Disorders (cont'd)

- **Infertility, male**—*lead, chlorinated solvents*
- **Noise-induced hearing loss**—*noise, power tools, saws, drills, nail guns, industrial noise*
- **Renal disease**—*lead, degreasers, solvents, cadmium*
- **Scleroderma/systemic sclerosis**—*silica*

### Respiratory Diseases

- **Asthma**—*fungi/mould, chromium, dust, epoxies, PVC*
- **Benign pneumoconiosis**—*welding fume*
- **Bronchitis, chronic**—*organic dust, construction dust, welding fume, environmental tobacco smoke*
- **Hypersensitivity pneumonitis, acute/chronic**—*polyurethane foam insulation, epoxies, fungi/mould, wood dust*
- **Metal fume fever**—*welding fume from galvanized metals*
- **Pontiac fever, Legionnaires' disease**—*Legionella*
- **Silicosis**—*silica*

The next page provides important diagnostic criteria for screening, early detection, and diagnosis.

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## Asbestos disease

Asbestos-caused fibrosis of the lungs and pleura may lead to shortness of breath. It usually takes 15 or more years from the onset of exposure for radiographic abnormalities and symptoms to arise. Radiologists should be alerted to the suspected diagnosis. Carpenters occupationally exposed to asbestos are at increased risk of cancers of the lungs and pleura.

Screening for cancer has not been proven to reduce mortality; however, it can result in early detection. If there is any suspicion of asbestos-related illness (i.e., not screening scenario), patients may be referred directly to Princess Margaret Hospital's program where immediate assistance, rapid assessment, and specialized treatments are available.

Phone 1-877-LUNG 911 (5864 911) Fax 416-340-3353.  
Asbestos-exposed workers should be counseled about smoking cessation.

## Contact dermatitis

Contact dermatitis is an inflammatory skin reaction to direct contact with noxious agents in the environment. Substances that produce this condition after single or multiple exposures may be either irritant or allergic in nature.

Irritant contact dermatitis (ICD) results from contact with external agents that directly damage the epidermis, in contrast to allergic contact dermatitis (ACD) in which the damage occurs through the host's immune response as a result of a delayed type hypersensitivity reaction.

The diagnosis of contact dermatitis should be considered when there is a suspected workplace agent (allergen or irritant). Screening should include determination of the following: (A) Did the skin condition start after the worker started the job? OR Did the skin condition become worse after the worker started the job? AND (B) Are symptoms better on weekends or holidays off work?

Referral to a specialist with experience diagnosing and treating occupational contact dermatitis should be considered when any of the following are suspected:

- All cases of possible ACD
- ICD with allergic features
- Chronic ICD
- Complicated ICD (e.g., not improving, deteriorating, confounded by another skin disease such as psoriasis).

## Hand-arm vibration syndrome (HAVS) and vibration-induced white finger (VWF)

HAVS and VWF are the major health hazards related to the use of vibrating tools. If workers develop symptoms of tingling or numbness, or if their fingers occasionally become white, blue, or painful—especially when cold—they should be examined by a doctor who knows about the diagnosis and treatment of these conditions.

Diagnostic tests that can be used include plethysmography, arteriography, skin thermography, and sensory tests such as two-point discrimination depth sense, pinprick touch, and temperature sensation. The Occupational Medicine Clinic at St. Michael's hospital in Toronto has diagnostic facilities.

## Noise-induced hearing loss

Noise-induced hearing loss (NIHL), is diagnosed by audiometric testing. With NIHL, there is a characteristic dip (notch) at 4 kHz on the audiogram. This contrasts with presbycusis where there is a continuous dropoff as frequency increases.

## Occupational asthma

Sensitizer-induced occupational asthma is caused by an immune response to specific workplace agents such as low-molecular-weight chemicals (such as diisocyanates, colophony [a pine resin product used in soldering], or epoxy compounds). Once a person has been sensitized to one of these materials, even exposure to extremely low quantities will exacerbate the asthma. If this form of occupational asthma is suspected from the patient's history, objective investigation is required to confirm or refute the diagnosis.

Patients with confirmed sensitizer-induced occupational asthma should have no further exposure to the causative agent, since the best outcome is achieved with early diagnosis and complete avoidance of exposure. An objectively confirmed diagnosis is very important. Patients with suspected sensitizer-induced occupational asthma should be referred as soon as possible to a specialist (a respirologist, an allergist, or an occupational physician) with expertise in this area. Investigations are most helpful if they can be performed while the patient is still working in the suspected causative work area; the primary care physician may be able to initiate some of these.

*Source: Occupational asthma: An approach to diagnosis and management. Tarlo and Liss. Canadian Medical Association Journal. Apr 1, 2003. 168(7); 867-71.*

**For more info about occupational disease and workplace health and safety,  
contact the Workplace Safety and Insurance Board: 1-877-202-0008**