WORKSAFE
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HSWA

QUICK GUIDE

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Hazards that can cause occupational diseases

This guidance highlights the hazards that, without risk management, can cause occupational disease. This guide may help PCBUs when identifying hazards relating to occupational disease. Some occupational diseases are included in the definition of critical risk.

KEY POINTS

- Occupational diseases can cause serious harm but can take months or years to become apparent.
- You must identify and manage any critical risks in your work, including those that are likely to lead to occupational disease.
- Critical risks that are likely to lead to occupational disease are risks associated with hazards that can cause occupational diseases listed in Schedule 2 of the Accident Compensation Act 2001. See Table 1 at the end of this guide.
- You may need to seek specialist advice if you are unsure about the risk or level of exposure to any of the hazards described in this guidance.

See What is a critical risk? for more general information on critical risks.

What is an occupational disease under the Accident Compensation Act 2001?

Occupational diseases are diseases caused by exposure to workplace hazards.

These diseases can develop over time and may not become apparent until months or years after exposure.

For the purposes of the critical risk definition, occupational diseases are the diseases listed in Schedule 2 of the Accident Compensation Act 2001. See Table 1 at the end of this guide.

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How can PCBUs identify hazards associated with a risk of an occupational disease?

Check the occupational diseases listed in Schedule 2 of the Accident Compensation Act 2001. See Table 1 at the end of this guide.

If you have any hazards that may cause an occupational disease included in this list, you must manage these as critical risks.

See What is a critical risk? for more general information on identifying critical risks.

Hazards that can cause occupational diseases

The following sections list the types of hazards and associated risks of disease that you should look for when assessing whether you have any critical risks relating to occupational disease.

If any of these hazards are present, you may have critical risks that must be managed. Do a risk assessment and plan how you will manage the risk of exposure to the hazard that could lead to occupational disease.

For more detailed information on managing risk see:

- How to manage work risks
- Health and exposure monitoring

Biological hazards

Work with the following can expose people to biological hazards:

- infected animals
- infected animal products
- carcasses
- contaminated biological material.

Examples of occupational diseases associated with biological hazards include:

- anthrax
- leptospirosis
- brucellosis
- orf
- streptococcus suis infection.

These diseases can affect multiple body systems and are generally acquired through direct contact with infected animals or contaminated materials.

Chemical hazards

Chemical hazards account for many occupational diseases. Exposure can occur through inhalation, skin contact, or ingestion. Examples include:

- metals
- dusts
- fibres
- fumes
- gases
- vapours
- solvents
- liquids
- mists
- aerosols.

Metals and chemicals known to cause specific diseases

The following substances are recognised as causing specific diseases of organs such as the lungs, liver, kidneys, nervous system, blood-forming organs, and skin:

- arsenic
- benzene
- beryllium
- butadiene
- cadmium
- carbon disulphide
- chlorinated hydrocarbons.
- chromium
- copper
- ethylene oxide
- formaldehyde
- lead
- manganese
- mercury
- phosphorus
- trichloroethylene
- tungsten
- vinyl chloride.

Exposure through inhalation

Inhalation of workplace dusts, fibres, smoke, fumes, or gases can cause respiratory diseases, including:

- silicosis
- asbestosis
- anthraco-silicosis
- silico-tuberculosis
- pneumoconiosis (caused by tin, iron oxide, barium, or cobalt dust)
- byssinosis (cotton and textile dust disease)
- extrinsic allergic alveolitis
- occupational asthma
- asthma caused by potroom emissions
- chronic obstructive pulmonary disease (COPD).

Exposure through skin contact or absorption

Skin absorption of solvents, pesticides, or other industrial chemicals can cause nervous system disorders. These disorders affect the brain, spinal cord, or peripheral nerves and may take some time to develop. They include chronic solvent-induced encephalopathy and peripheral neuropathy caused by solvents, pesticides, or acrylamide.

Repeated contact with certain chemicals and metals can cause irritation, allergic reactions, pigmentation disorders, or chronic skin damage. Diseases include occupational allergic contact dermatitis and vitiligo caused by specified industrial chemicals.

Exposure through ingestion

Ingesting or swallowing metals, pesticides, or other industrial chemicals can cause a range of neurological, gastrointestinal, cardiovascular, blood-forming, and renal disease. Swallowing of food, water, fluids or particles containing biological hazards can cause diseases such as anthrax, leptospirosis, brucellosis, and *streptococcus suis*.

Physical hazards

Exposure to physical agents or forces can cause occupational diseases. Examples include vibration and radiation exposure.

Prolonged exposure to vibrating tools and equipment

Prolonged exposure to hand and arm vibration can result in hand-arm vibration syndrome.

Exposure to radiation

Exposure to ionising or non-ionising radiation can result in occupational diseases, including radiation-related diseases, heat-induced cataracts and ocular melanoma associated with exposure to ultraviolet radiation during welding.

Hazards recognised to cause occupational cancers

Some workplace hazards are recognised causes of occupational cancers.

Examples include:

- asbestos
- crystalline silica
- wood dust
- nickel compounds
- formaldehyde
- benzene
- vinyl chloride
- trichloroethylene
- sulphuric acid mists
- ultraviolet radiation from welding.

Many occupational cancers develop over a long period after exposure.

Where to get more information or help

WorkSafe New Zealand has further guidance about managing health-related risks including managing risks relating to occupational disease:

- Health and exposure monitoring
- Hazardous substances toolbox
- Safety data sheets
- A to Z topics and industries

If you know your work involves exposure to a hazard listed in this guidance but aren't sure about your workers level of exposure, or how best to manage the risk, you may want to seek further advice from an occupational hygienist.

Make sure that the person has the right specialist knowledge and experience to provide advice on your specific hazard or situation.

You can find more information about occupational hygienists in the following guide Guide to working with occupational hygienists

The table below lists occupational diseases listed in Schedule 2 of the Accident Compensation Act 2001. This list may be modified from time to time. For the most up-to-date list, check Schedule 2 on the New Zealand Legislation website

OCCUPATIONAL DISEASES
Pneumoconioses caused by sclerogenetic mineral dust (silicosis, anthraco-silicosis, asbestosis) and silico-tuberculosis, provided that silicosis is an essential factor in causing the resultant incapacity or death.
Lung cancer, mesothelioma, laryngeal cancer, or ovarian cancer diagnosed as caused by asbestos.
Diseases of a type generally accepted by the medical profession as caused by beryllium or its toxic compounds.
Diseases of a type generally accepted by the medical profession as caused by phosphorus or its toxic compounds.
Diseases of a type generally accepted by the medical profession as caused by chrome or its toxic compounds.
Diseases of a type generally accepted by the medical profession as caused by manganese or its toxic compounds.
Diseases of a type generally accepted by the medical profession as caused by arsenic or its toxic compounds.
Diseases of a type generally accepted by the medical profession as caused by mercury or its toxic compounds.
Diseases of a type generally accepted by the medical profession as caused by lead or its toxic compounds.
Diseases of a type generally accepted by the medical profession as caused by carbon bisulfide.
Diseases of a type generally accepted by the medical profession as caused by the toxic halogen derivatives of hydrocarbons of the aliphatic series.
Diseases of a type generally accepted by the medical profession as caused by benzene or its toxic homologues.
Diseases of a type generally accepted by the medical profession as caused by nitro- and amido-toxic derivatives of benzene or its homologues.
Diseases of a type generally accepted by the medical profession as caused by ionising radiations.
Primary epitheliomatous cancer of the skin diagnosed as caused by tar, pitch, bitumen, mineral oil, anthracene, or the compounds, products, or residues of these substances.
Anthrax infection.
Leptospirosis diagnosed as caused by working with animals or their carcasses.
Brucellosis diagnosed as caused by working with animals or their carcasses.
Orf diagnosed as caused by working with animals or their carcasses.
Streptococcus suis diagnosed as caused by working with animals or their carcasses.
Angiosarcoma of the liver or hepatocellular carcinoma diagnosed as caused by vinyl chloride monomer.
Byssinosis diagnosed as caused by working with cotton, flax, hemp, or sisal dust.
Pneumoconiosis diagnosed as caused by tin, iron oxide, barium, or cobalt.
Diseases of a type generally accepted by the medical profession as caused by tungsten.
Hand-arm vibration syndrome diagnosed as caused by hand and/or arm vibration.
Sino-nasal carcinoma diagnosed as caused by working with wood dust.
Diseases of a type generally accepted by the medical profession as caused by ethylene oxide.
Extrinsic allergic alveolitis diagnosed as caused by work involving the inhalation of organic dusts.
Naso-pharyngeal carcinoma diagnosed as caused by formaldehyde.
Laryngeal carcinoma diagnosed as caused by sulphuric acid mists or organic solvents.
Lung cancer diagnosed as caused by bis (chloromethyl) ether (and chloromethyl methyl ether), cadmium, coke oven emissions, nickel, radon, silica, or soot.

OCCUPATIONAL DISEASES
Primary epitheliomatous cancer of the skin diagnosed as caused by shale oil.
Bladder carcinoma diagnosed as caused by 2-naphthylamine, benzidine, 4-aminobiphenyl, N, N-Bis (2-chloroethyl)-2-naphthylamine, other aromatic amines, or poly-cyclic aromatic hydrocarbons.
Hodgkin's lymphoma diagnosed as caused by wood dust.
Chronic solvent-induced encephalopathy diagnosed as caused by organic solvents, particularly styrene, toluene, xylene, trichloroethylene, methylene chloride, or white spirit.
Peripheral neuropathy diagnosed as caused by organic solvents such as n-hexane, carbon disulphide, or trichloroethylene; pesticides such as organophosphates; or acrylamide.
Occupational asthma diagnosed as caused by recognised sensitising agents inherent in the work process such as, but not limited to, isocyanates, certain wood dusts, flour dusts, animal proteins, enzymes, and latex.
Chronic obstructive pulmonary disease diagnosed as caused by coal, silica, cotton dust, or grain dust.
Chronic renal failure diagnosed as caused by metals such as cadmium or copper, including via welding fumes.
Occupational allergic contact dermatitis diagnosed as caused by recognised sensitising agents inherent in the work process such as, but not limited to, nickel and other metals, rubber additives, resins, petroleum distillates, solvents, soaps, detergents, and plant allergens.
Vitiligo diagnosed as caused by para-tertiary-butylphenol, para-tertiary-butylcatechol, para-amylphenol, hydroquinone, or the monobenzyl or monobutyl ether of hydroquinone.
Malignant mesothelioma diagnosed as caused by erionite.
Heat-induced cataracts diagnosed as caused by infrared radiation.
Nasal cancer diagnosed as caused by nickel.
Chronic corneal ulcer diagnosed as caused by ammonia.
Cholangiocarcinoma diagnosed as caused by 1,2-dichloropropane.
Leukaemia diagnosed as caused by butadiene.
Kidney cancer diagnosed as caused by trichloroethylene.
Ocular melanoma diagnosed as caused by ultraviolet radiation (UVR) exposure from work involving welding.
Asthma diagnosed as caused by potroom emissions.

TABLE 1: Schedule 2, Occupational diseases listed in the Accident Compensation Act 2001