Chapter 6

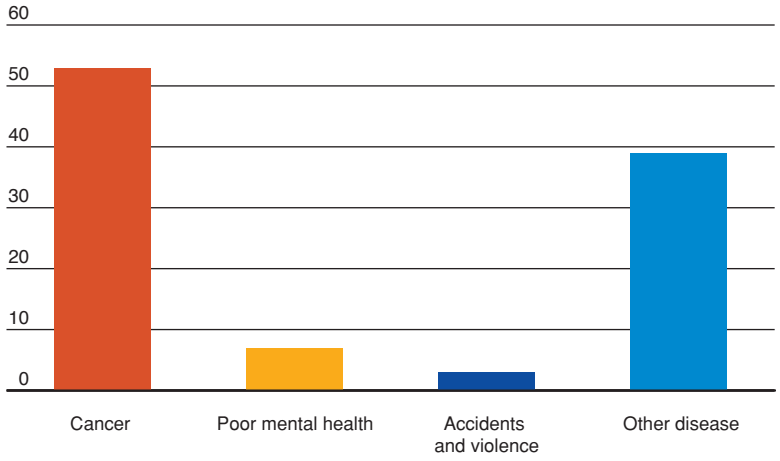
Cancer and work

What is the hazard?

According to world expert, Dr Takala, exposures at work cause 5.3–8.4% of all cancer and among men and 17–29 % of all lung cancer deaths.

Dr Takala estimates that cancers caused by work account for 53% of work-related diseases and importantly work-related accidents only account for 5% of all work-related deaths.

Percentage of work-related deaths by illness



6. Cancer and work

Australian research estimates that:

- At least 1.5 million Australian workers are exposed to occupational carcinogens
- 14% of cancer deaths in men are due to exposures at work
- 2.2% of cancer deaths in women are due to exposures at work

These figures are likely to underestimate the actual numbers.

80% of all exposures at work are due to about 50 cancer causing agents:

- UV radiation from sun light
- Artificial UV radiation e.g. welders
- Diesel exhaust – diesel mechanics, auto technicians working on diesel engines, underground miners
- Crystalline silica e.g. mining industry lab workers
- Benzene
- Second hand tobacco smoke – especially amongst tradespeople
- Lead
- Asbestos – maintenance and asbestos removal
- Trichloroethylene – metal workers
- Chromium, cadmium, nickel – welders, metal and aerospace workers
- Welding fumes – due to chromium and nickel.

See Chapters on Diesel Fumes and Welding

IARC CLASS 1A: Substances that are known causes of cancer in humans

Hazard	Cancer type	Exposures from
Asbestos	Lung cancer, cancer of the lining around the lung and abdomen [mesothelioma], pharynx, ovary.	Gaskets, back of switchboards, cement sheeting, brake linings etc.
Benzene	Leukaemia	Petroleum products and combustion residue containing benzene. In the past, some cleaning solvents especially in the print industry
Chromium (VI)	Nose, lung	Airline industry, dye manufacture, electroplating
Diesel exhaust	Lung	Diesel motors that are not exhausted to outside, working close to diesel exhausts
Nickel compounds	Nose, lung	Metallurgy, welding
Shale oils	Skin	Lubricants, fuel
Iron and steel	Lung cancer	Foundries
Welding fumes	Lung cancer and maybe kidney cancer	Welding

IARC Group 2A: Probably cause cancer in humans

Hazard	Cancer	Exposures from
Trichloroethylene	Liver, lymphoma	Degreasing, solvent
Tetrachloroethylene	Oesophagus, lymphoma	Dry cleaning, solvent
Acrylonitrile	Lung, prostate	Plastics, rubber
Formaldehyde	Nose/throat	Laboratories, plastics used as a solvent
Shift-work (night work)	Breast cancer in women	Shift work and night work. The latest evidence suggests that the risk decreases if the person stops doing night work.

Further information is available on our website; including a list of questions that Doctors can ask to help decide if there is a link between work and cancer.

The Regulations

The PCBU/employer has general obligations under the law to control the risks of developing cancer. There is a small number of carcinogens that must not be used in Australia. The list is in the Hazardous Substances Regulations. But most cancer-causing substances are not on those lists. The Hazardous Substances Regulations and Code apply to all carcinogens.

Exposure to a cancer-causing substance needs to be eliminated or kept as low as possible. This is because for most carcinogens there is no known safe level.

The health warning pictogram on labels and SDSs applies to:

- Carcinogens, cancer causing substances
- Mutagens, which are the chemicals which damage our genetic make-up, e.g. gamma ionising radiation
- Teratogens which are chemicals which damage the unborn foetus e.g. lead
- Reproductive and endocrine disrupters – substances that disrupt how our hormones work
- Sensitisers and asthma causing agents.

6. Cancer and work

Finding cancer-causing chemicals and processes

Barely one in every 100 chemicals used at work has been systematically tested; so be cautious about chemicals. Check all the labels and Safety Data Sheets, ask questions about the health effects of the products being used and if necessary, seek expert medical or occupational hygiene advice.

Preventing exposures

The laws use the term so far as reasonably practicable – for cancer causing substances the AMWU recommends keeping the exposure **as low as possible. No one should be exposed to more than 20% of the exposure level for a carcinogen. If the level gets to 50% then an immediate review of control measures is necessary.**

Preventing exposures – the hierarchy of control

The best way to prevent cancer is to prevent exposure, i.e. don't use the cancer-causing substances.

The next best option - is keeping the substance in a closed system, i.e. extra safety measures will be needed in cases of spills, leaks or when cleaning or performing maintenance.

If that is not possible then engineering controls are need, e.g. extraction exhaust and fume hoods. These need to be supplemented by personal protective equipment if there is any chance of exposures.

If carcinogens are being used and the measures above are not keeping exposures as low as possible, then go back over the options and see what can be improved. No-one should be exposed to cancer causing agents at work.

Additional HSR actions

There is always a lag time between the exposure and the development of cancer, so it can be useful to record the exposures - for future medical use.

There are two reasons for an exposure letter:

- A record for the workers who might be unlucky enough to become ill and need to run a compensation case. The letter makes it clearer for the lawyers to track down the employer(s).
- To put political and industrial pressure on PCBU/employers, to drive home the importance of their duty of care to workers and their obligations not to expose workers to lethal dusts/fumes/vapours etc.

Exposure to cancer-causing substances

Name (of worker): _____

Union: _____

Workplace Details:

Employer: _____

Address of Employer: _____

Workplace location: _____

(please write as above if the same address as employer)

Duration of employment: _____

Potential exposure to _____

(name of substance)

Duration of exposure if known):_____

Circumstances of exposure:

Exposure has occurred while working as _____

(name of job/job classification)

whilst doing the following job tasks _____

(e.g. degreasing, welding stainless steel tanks, decanting during lab analysis etc.)

It is acknowledged that the above-named worker was potentially exposed to _____ during their employment.

(name of substance)

Signed on behalf of the employer:_____

Name of the employer representative _____

(Block letters)

Title of the employer representative: _____

Date of signing: _____/_____/_____