



Chapter 14

Lung hazards

The hazard

Work can cause lung disease due to the inhalation of:

- Dusts - such as silica, asbestos, coal dust, food enzymes
- Fumes - such as welding and diesel fumes
- Gases and vapours - ammonia, chlorine, carbon monoxide gas.

Work related lung diseases and most agents which cause them have been known for centuries.

The effects on the lungs can be:

- Cancer - e.g. lung cancers from silica dusts or welding and diesel fumes
- Lung scarring - e.g. silicosis and coal miners' pneumoconiosis, hard metal pneumoconiosis e.g. compacting cobalt with tungsten carbide in a process called sintering; beryllium due to exposures in defence and aerospace industries
- Bronchitis - e.g. welding
- Asthma - e.g. isocyanates, cobalt compounds, food industry enzymes
- Metal fume fever - e.g. zinc compounds - a short term flu like illness
- "Mushroom compost lung" - due to 'spores' from organic material

In one study, people working as welders and sheet-metal workers were five times more likely to have to quit their jobs due to breathing problems than the rest of the work force.

Welders are at increased risk of metal fume fever, bronchitis and lung cancer. Sheet metal workers are also at increased risk of developing lung cancer and chronic bronchitis.

Spray painters and those inserting foam for seating or insulation in vehicles are very vulnerable to developing asthma due to isocyanates (MDI/TDI).

14. Lung hazards

Coal dust – Black lung

After World War II, Welsh coal miners had a horrendous death toll - from two mines, 1 in 3 workers died from coal miners' pneumoconiosis. In Australian coal mines, the same disease has resurfaced. Its causes are known, as are the ways to prevent black lung.

This disease usually takes over 10 years of exposure to coal dust to develop. And in the early stages of the disease workers usually have no symptoms. Symptoms begin with mild cough, followed by increasing breathlessness, wheeze and cough productive of black sputum in later stages and significant breathlessness.

Health monitoring: lung function tests are exceptionally important in workers exposed to coal dust. Early changes in the lungs can be identified and action can be taken to prevent or limit further exposures. The failure of the health monitoring system in Queensland coal mines is one of the reasons we have seen this disease re-emerge.

If you or others have concerns about Black lung - please contact the AMWU for detailed advice.

Crystalline Silica

Silica is a hazard found in foundries and is very common in the building and construction industries.

Experts estimate that 6.6% of Australian workers have exposure to crystalline silica dust and 3.7% are heavily exposed.

Assay laboratories in the mining and exploration industries are an example of unexpected exposures to silica dust. A study by WA Government inspectors found silica dust levels exceeded the exposure standard in 50% of measurements. In some places, the use of compressed air to clean crushing machines created dust levels up to seven times the inhalable dust exposure standard.

There has been a re-emergence of severe silicosis due to the cutting of artificial stone for kitchen bench tops.

Silica dust causes lung cancer and scar tissue (fibrosis) in the lungs which can continue after exposure ends - the risk of cancer is higher in smokers who have silicosis.

Silicosis, like Black lung, has re-emerged as a significant problem in the building industry - fake stone kitchen bench tops - workers cutting and grinding this material are very susceptible to silicosis due to the high silica content of the "stone". In Australia we now have young people waiting for lung transplants due to high uncontrolled exposures to silica dust.

What can be done?

Preventing dust getting into the air and/or suppression is very important - e.g. wetting down dust, wet cutting, no dry sweeping.

Effective and efficient ventilation solutions are always available.

Ventilation systems need to be regularly checked to ensure the system is performing as it was designed. Common problems include:

- Poorly maintained fans
- Low face velocity in fume hoods or spray booths
- Placing the worker between the source of fumes and the extraction (the worker is guaranteed to breathe in fumes then!).

The law says that workers need to have regular medical examinations if placed at risk by exposure to silica dust.

It is vitally important that:

- Medical checks/screening and monitoring of dust or fume levels are conducted by independent experts
- The findings are published and notified to the workers.

Remember, medical screening does not stop exposures. PCBU/employers are required to make changes to the work if the health monitoring shows any effects of exposure.

The AMWU, along with the ACTU, has been lobbying for:

1. A national register of occupational lung disease - especially for dusts.
2. Lowering of the exposure level for silica and the introduction of an exposure level for diesel and welding fumes.

See Chapters on Asthma, Exhaust/Diesel and Welding.