The Effects of Asbestos Exposure

The Australian government enacted a ban on the use of asbestos in 2003 after the dangers of asbestos and the knowledge of it being a human carcinogen became known.

Enacting this ban to help protect workers, families and individuals from continuing to use this toxin will ensure thousands of lives are not lost to asbestos-related diseases in years to come. However, due to extremely widespread use by the building industry in the second half of the 20th century it remains prevalent within building environments in Australia, estimated by the Australian Government to be in as many as one third of homes and building sites in the country.

Asbestos is an invisible mineral fiber that is relatively safe when encased and the materials that contain it remain undamaged. However, if disturbed or broken, these microscopic fibers become airborne and can easily enter the body and become trapped when inhaled or ingested. Asbestos exposure at a job site is a major health problem.

Asbestos Related Disease

Breathing in asbestos fibres has been linked to three asbestos related diseases, all of which can be fatal. Asbestos-related diseases take time to develop, typically emerging at least 10 years after exposure, and sometimes as long as 50 years later. Currently there are no cures for these diseases.

Asbestosis

A chronic lung disease that can lead to respiratory impairment and to diseases such as lung cancer. Asbestosis causes widespread interstitial fibrosis (scar tissue between the alveoli, spread over the lung).

It is difficult to distinguish from other causes of interstitial fibrosis and only confirmation of exposure to asbestos or detection of unusually high numbers of asbestos fibres in the lung is considered conclusive evidence of this disease.

Mesothelioma

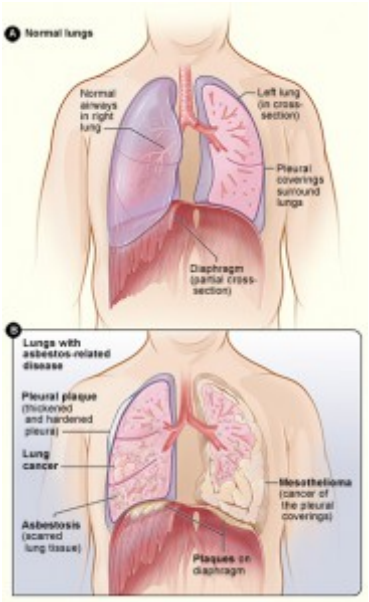
Mesothelioma is a cancer of the mesothelial cells which cover most internal organs. There are two main types, being a cancer of the lining of the pleura (outer lung lining) or of the peritoneum (the lining of the abdominal cavity).

- It is a rare disease - incidence is 1 in every 100,000 for males and 0.3 in every 100,000 for females.
- Asbestos is not the only cause of this disease, but it is the most important cause in modern times.
- Crocidolite (type of asbestos) is the most important asbestos-related factor, but amosite, chrysotile and tremolite are also linked.
- This disease takes 20-50 years to appear, with the highest risk around 30-35 years after exposure.
- It is typically dose-related, but in rare cases has been known to occur in patients with little known occupational exposure to asbestos.

Lung cancer

Cannot be distinguished from those cancers that are caused by other agents such as tobacco smoke.

- Lung cancer is relatively common among the general public and is the cancer most frequently associated with asbestos.
- Tumours grow and eventually obstruct airways.
- No characteristics specify a lung cancer as being caused by asbestos - we cannot distinguish a cigarette lung cancer from an asbestos lung cancer or another lung cancer.
- Smoking multiplies by 10 the risk of death due to lung cancer for asbestos workers.
- This cancer occurs at least 15 years after first exposure to asbestos.



What factors affect the risk of developing an asbestos related disease?

Your chance of getting an asbestos-related disease depends on certain conditions called risk factors. There are several risk factors, including the following:

- **Concentration** - how much asbestos was in the air you breathed
- **Duration** - the cumulative length of all exposures

The asbestos disease risk factors of concentration and duration establish a person's **dose**.

Asbestos diseases follow a "**dose-response**" relationship curve. This means that the more asbestos you inhale (dose), the greater your risk of contracting an asbestos-related disease. Generally, your risk of being affected increases with each dose. For example, if a person worked around asbestos for 5 years and someone else worked in the same job for 15 years and had an equal concentration of exposure, the person with 15 years of asbestos exposure has higher cumulative dose and therefore higher risk. However, either, neither or both may become ill from that exposure depending on a given person's own susceptibility to asbestos. Occasional exposures to low concentrations of asbestos fibres, are likely to be associated with low risk to health.

In addition to the above, how asbestos exposure affects an individual can be affected by:

- Size, shape, and chemical makeup of the asbestos fibres
- Source of the exposure
- Individual risk factors, such as smoking and pre-existing lung disease

Current scientific and medical evidence supports the fact that simply living or working in a building containing asbestos is not dangerous as long as the asbestos is in good condition (i.e. undamaged). It is when asbestos is worked with or disturbed and asbestos fibres are released that the risk of developing an asbestos related disease is increased.

Those at Highest Risk

The people at greatest risk of developing an asbestos related disease are those that frequently undertake repairs, renovations and other work which can generate the release of asbestos fibres into the air.

However, asbestos is only a risk to health when asbestos fibres become airborne and are inhaled into the lungs. Most fibres are removed from your lungs by your body's natural defences (e.g. coughing); however, some fibres can remain.

Asbestos-related diseases usually take many years to develop. The idea that 'one fibre will kill' is not supported by scientific evidence as everyone has had some exposure to asbestos fibres. The burden of asbestos fibres in the lungs, resulting from typical background exposure, appears to be tolerated by most people. Post-mortem studies of people aged between 60 -79 years who had not died from asbestos-related diseases have shown up to one million asbestos fibres per gram of dry lung tissue. Except in cases of high occupational exposure, the incidence of asbestos-related disease is usually low.

How does smoking affect risk?

Many studies have shown that the combination of smoking and asbestos exposure is particularly hazardous. Smokers who are also exposed to asbestos have a risk of developing lung cancer that is greater than the individual risks from asbestos and smoking added together. There is evidence that quitting smoking will reduce the risk of lung cancer among asbestos-exposed workers. Smoking combined with asbestos exposure does not appear to increase the risk of mesothelioma. However, people who were exposed to asbestos on the job at any time during their life or who suspect they may have been exposed should not smoke.

How KINNECT can Help

A business conducting Asbestos related work, including asbestos removal, must ensure periodic health monitoring is provided to the worker. Monitoring should occur prior to commencing asbestos related work and at least once every two years if this type of work is continued.

KINNECT are highly skilled and experience in performing asbestos related screening. Contact us to establish an Asbestos Health Monitoring Program for your workforce.