

Industrial Hygiene at Petrotrin

Petrotrin has embarked upon an aggressive Occupational Health programme for its employees. The Industrial Hygiene group has commenced a series of monitoring and training programmes designed to minimize Occupational Health issues in the Company. The Noise and Hearing Conservation programme has been successfully delivered throughout the majority of the Company and is continuing on an ongoing basis.

Noise and Hearing Conservation Program

What is Noise?

Noise is any unwanted sound. Sound is measured in decibels. Noise is created when any material vibrates in air. This vibration can be a single sound wave, such as when a hammer strikes a nail, or a continuous vibration created by running equipment.

How we hear

The ear is made up of three parts – the outer, middle and inner ear. The outer ear is the part you can see and it is designed to collect sound waves and direct them to the middle ear. The middle ear is composed of the eardrum and small bones that transmit sound vibration to the inner ear. The inner ear contains a fluid filled spiral called the cochlea which contains small hair-like cells. Sound causes the fluid to move which causes the hair-like cells to bend. This creates a signal to the auditory nerve which transmits the impulses to the brain which interprets the signals as sound.

What is loud noise?

Studies have shown that exposure to noise levels at or above 85dBA over an 8 hour period can mean the risk of hearing loss. To understand the level of noise, a typical vacuum cleaner has a noise level of about 70 decibels and a lawn mower has a level of about 100dB. Hearing loss caused by noise exposure depends on three factors:

1. How loud is the noise
 2. How long you are exposed
 3. How often you are exposed
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How do you know if the noise level is too loud?

If you have to shout to someone that is just 2 or 3 feet away in order for them to hear you, then the noise level in your area is too loud.

Causes of hearing loss

Aging – As we age, the hair-like cells in the inner ear can stiffen or shrink. This reduces the ability of these cells to react to sound waves.

Illness – Diseases can cause damage to the middle ear, inner ear or auditory nerve. Any damage can cause loss or reduction of hearing.

Noise Exposure – Frequent exposure to loud noises or a single exposure to a very loud noise can damage the inner ear.

Signs of hearing loss

- ▶ Ringing, roaring or whistling in the ear
 - ▶ Problems understanding normal conversations
 - ▶ Need to turn up the radio or television to understand voices
 - ▶ Problems locating sources of sound
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How can I protect my hearing?

At home

- ▶ Use sound- absorbing materials to reduce noise at home. Rubber mats can be put under noisy kitchen appliances. Curtains and carpeting also can help reduce noise. Storm windows or double-pane windows can reduce the amount of noise that enters the home
- ▶ Avoid using several appliances at the same time. Try to keep television sets, stereos and headsets low in volume
- ▶ Avoid trying to drown out unwanted sound with other sounds. For example, do not turn up the volume on your car radio or headset to drown out traffic noise or turn up the television volume while vacuuming

On the job

- ▶ Be conscious of the noise in your environment. If you are standing three feet away from someone and you can't hear what that person is saying to you the noise level is likely damaging to your hearing
- ▶ Reduce noise exposure by spending only the time necessary for the effective operation of the facility
- ▶ Wear hearing protection devices (earplugs, earmuffs etc) when operating machinery or when exposed to continuous noise
- ▶ Persons exposed to noise levels of 85 decibels and over should have their hearing tested every year
- ▶ Tell your colleagues of the importance of wearing their hearing protection devices and encourage them to do so

Petrotrin's Noise and Hearing Conservation Program

Petrotrin has undertaken a Noise and Hearing Conservation program. The primary goal of the Company is to reduce, and eventually eliminate hearing loss due to workplace noise exposures. The program includes the following elements:

- a) Noise Area Monitoring
- b) Personnel Monitoring
- c) Hearing Conservation Training
- d) Audiometric Testing