

DANGER EYES AT WORK



Your eyes are precious. And, depending on the type of work you do, they may also be at risk.

Every year over 4,000 New Zealanders suffer an eye injury at work, necessitating time off work. Many are left with impaired vision and some are blinded.

Most of these injuries are preventable. Everyone at risk should know:

- How to avoid being harmed; and
- What to do if an eye injury occurs.

What Causes Eye Injuries?

Over 90% of eye injuries are due to four general causes.

1. Being struck in the eye by flying particles and objects such as nuts, bolts, ball bearings, springs, and fragments from abrasive blasting and grinding. The missile strikes the eye a blow that either grazes, bruises, tears or penetrates. An example is a ricocheting nail which is propelled by a glancing hammer blow.

2. Striking the eye against moving or stationary objects, hand tools, etc. Such accidents happen when you blunder into the corner of an open cabinet or stab your eye on a protruding tool or piece of equipment in your work area.

3. Eye contact with:

- Splashes of molten metals, hot liquids, corrosive chemicals, irritant liquids, disease-causing agents. Squirts of chemicals in the eye will

cause damage to the tissue, if not immediately flooded with water. Some of the most extensive corneal scars result from chemicals such as lime and concentrated acids and alkalis. These cause serious visual loss and considerable disfigurement.

- Fumes—corrosive, irritant.
 - Dusts—organic, chemical, abrasive, corrosive.
4. Exposure to welding flash, hot substances, laser beams, infrared radiation, laser reflection.

Treating Splashes, Fumes, Dust, Particles In The Eyes

Speed is essential to prevent permanent damage to the eyes.

Immediately lay the patient on the floor and pour copious amounts of cold water gently into the eye while holding the eyelids open. (You may need help if the person's eye has been splashed by a corrosive chemical.)

You can use any clean container such as a jug, teapot or bottle.

Continue for 15 minutes. Get professional medical attention.



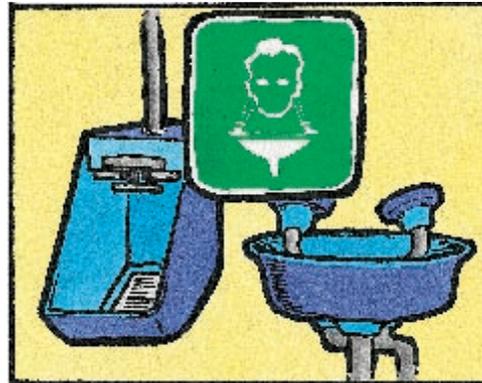
Note on Contact Lenses:

If the patient is wearing contact lenses, don't attempt to remove them before or during the 15-minute irrigation. Usually, the lenses will be washed out of the eye. If this doesn't occur, the lenses will slide off the pupil and migrate to the back of the eye. They may be safely left there until medical attention is available.

Treating Wounds To The Eye

If the injury is obviously major, prevent the victim from rubbing it. Cover the entire orbit with a soft dressing and get to hospital.

Do not attempt to remove foreign bodies from an eye.



First Aid Facilities

Adequate first aid and emergency treatment must be available in the work area.

In workplaces where there is a risk of splashes, fumes and dust, a mains-supplied, self-activating eyewash should be standard equipment.

Dealing With Eye Hazards

Many work hazards present the risk of serious harm to the eyes. The Health and Safety in Employment Act 1992 requires employers to take all practicable steps to eliminate these hazards or to isolate the hazard from the employee.

Where this is not possible, employers must take all practicable steps to minimise the likelihood of harm to employees. They must provide suitable eye protection for employees and ensure it is used.

Employees have a duty to wear the eye protection while they are exposed to the hazard.

The hazard protection table on the following page will help you to select the right protection gear for the job.

All eye hazard areas in places of work should be clearly signposted.



CHOOSING EYE PROTECTION

This hazard protection table is designed to help you select the right protection gear for your job.

Hazard	Examples	Effects	Protection	Notes
Thrown particles	Grinding, blasting, flying objects, especially from rotary lawnmowers.	Hard fragments can penetrate and lodge within the eyeball. The commonest cause of such injuries is a chip off an object being hammered or ground. Most penetrating fragments contain iron, which will gradually destroy vision. The risk of permanent disability from eye penetration injuries is high. <ul style="list-style-type: none"> • One in three victims will continue to have good vision. • One in three will have some visual impairment. • One in three will end up blind. 	Face shield, goggles, glasses with side shields.	Select according to factors: hot or cold particles, high speed or low, hard or soft. See AS/NZS 1337:1992 <i>Eye protectors for industrial applications</i> .
Thrown objects	Chipping operations, demolition; flying nuts, bolts and springs.	This type of injury can result in superficial injuries to the cornea, and cuts and bruises to the eyelids. In severe cases, the eyeball can be ruptured in its socket or knocked out.	High-impact face shields, goggles.	Select according to Standard above.
Splashes	Molten metals, hot or very cold liquids, corrosive liquids, chemicals, detergents.	Burns from molten metals or corrosives can lead to permanent opacity of the cornea or even its perforation. Acids and alkalis produce similar appearance but alkalis penetrate faster and are more destructive to the eye. The eye becomes bloodshot, with itching, burning, pain and loss of vision.	Goggles and masks.	Ensure the goggle or mask ventilation system is splash-proof and the mask fits the face contours. See Standard above.
Dusts	Work with powdered materials, abrasives, dry organic material, chemicals, some corrosives.	Depending on specific dust involved, injury could vary in severity from mild irritation and watering to complete loss of vision or the eye itself, often from secondary infection.	Light goggles.	Close fit is important. Ensure any ventilation system is dust-proof. See Standard above.
Fumes	May be corrosive or irritant. Can be produced by hot materials, chemical reagents, smog (e.g., automobile exhaust fumes, mainly hydro-carbons).	Fumes cause profuse watering but seldom permanent corneal damage.	Goggles and masks.	Lens type governed by other hazard factors. See Standard above.
Radiation	Welding glare (ultraviolet and infrared radiation) furnace work (infrared radiation) laser radiation (lasers used for aligning, surveying and levelling applications; lasers used in the meat industry, research laboratories, laser light shows).	Short-term effects of ultraviolet radiation in industry (welders' flash) occur 5-12 hours after exposure and last 24 hours. Swelling, reddening and watering occur but seldom permanent damage. In an injured state, cornea are prone to secondary infection. Severe exposure to infrared radiation can burn the retina, causing some loss of vision. Long-term exposure can cause cataracts. Effects of laser radiation on eyes are dependent on the wave length. Burns to retina may cause blind spots.	Goggles, visors, hand-held shields, specific wavelength filter lenses, face shields.	Different welding processes produce different glare hazards and need different protective lenses. Some lenses have a limited life: check and renew as necessary. Laser protection goggles must be suited to the particular laser type and power output. If in doubt, check with the National Radiation Laboratory. See: AS/NZS 1381:1992 <i>Filters for eye protectors</i> , AS/NZS 1381.1:1992 <i>Filters for protection against radiation generated in welding and allied trades</i> , AS/NZS 1338.2:1992 <i>Filters for protection against ultraviolet radiation</i> , AS/NZS 1338.3:1992 <i>Filters for protection against infrared radiation</i> , NZS 5821:1981 <i>Laser safety</i> .

Note on Contact Lenses and Eye Protection: Contact lenses may be safely worn with all types of eye protection, including welding goggles and visors. Contact lenses do not provide protection against eye hazards and must not be considered as a substitute for the appropriate type of personal protective equipment.