



## Lead Hazards and Indoor Shooting Ranges

Research in New Zealand and from overseas has concluded that indoor firing range users are at significant risk for exposure to high levels of lead. Indoor firing range users can inhale and ingest lead dust and fumes generated when the gun is fired and when settled lead particles are disturbed and re-suspended back into the air through actions such as sweeping, walking down the range or dropping mats on dusty surfaces.

Pre-school children may be exposed to lead dust which has been transferred from the rifle range to the home in addition to other sources (e.g. particularly lead based paint). Pre-school children are particularly susceptible to the effects of lead because they tend to eat, chew, lick or suck non-food items.

Lead and its associated compounds are extremely toxic, causing health effects which vary widely in their symptoms and severity and which may be difficult to distinguish from other conditions e.g. loss of appetite, headaches and fatigue, diarrhoea and weakness of the hands and fingers

To help reduce the risks of exposure through lead dust being deposited and transferred to other areas such as home interiors, there are a number of points which should be disseminated to all club members and their families of the necessary precautions to take to prevent unnecessary exposure. The New Zealand Association has written a number of articles in the national publication and we understand will be incorporating a section on lead into the Target Shooting Range Manual, which will discuss clean-up and ventilation of indoor ranges as well as general avoidance on exposure.

### 1) Shooting Mound Clean-up

Persons cleaning up after a shoot must be adequately protected. Remove accumulated lead dust after each shooting session by either using a vacuum cleaner fitted with a high efficiency filter (HEPA), or alternatively wet mopping. A vacuum cleaner fitted with a HEPA filter is capable of filtering out 99.9% of fine particles less than 3  $\mu\text{m}$ . The filter on a standard domestic vacuum cleaner is not capable of doing this. Change the HEPA filter according to the manufacturers' instructions. Avoid any movements that will shake the lead dust loose from the filter. Immediately place the used filter into a polythene bag and seal before disposal. Small amounts of lead debris can be disposed of in the household refuse collection, or directly to the rubbish tip. Place lead debris directly into polythene bags and seal them before disposal.

Good housekeeping at the range involves a regular schedule to remove accumulations of lead dust and debris.

## 2) Ventilation

Good ventilation can significantly reduce airborne lead levels at the firing line. It is important that there is adequate ventilation in the immediate vicinity of the shooting mound to enable air to flow away from the shooters face down the range where it can be exhausted, filtered and discharged. The ventilation system should be monitored for effectiveness on a regular basis.

## 3) Hand-Washing

Hand washing with water and soap before drinking, eating or smoking, is particularly important following shooting and cleaning up. All clubs should have hand washing facilities available. Single use drying surfaces such as paper towels are recommended.

## 4) Clothing

Do not wear contaminated shooting vests, clothing or shoes home as this can spread contamination to your home and car. Items taken home to be washed should be placed in a polythene bag and sealed.

## 5) Laundering

Shooting mats and jackets should be regularly laundered to remove lead. It is important to use a phosphate detergent in the water as this improves cleaning efficiency. Most common laundry powders which contain phosphate detergents e.g. Cold Water Surf, are suitable for this purpose. The shooting mats and vests should be laundered separately from other domestic clothing and linen. When laundering contaminated garments, store them away from other clothes and do not shake them prior to laundering.

### For further information please contact:

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