

Medical Officer of Health Environmental Health ADVICE

Inside

▶ Geothermal pools

▶ Spa pools

▶ Emergency
Management

▶ Rats

Environmental Health Quarterly Report

2002 Vol. 6, Issue 3

Introduction

In this edition we discuss the use of copper, chromium and arsenic treated timber in early childhood education centres and outline best practice for minimising children's contact with timber treatment chemicals.

Spa pools that are not properly maintained may expose people to a range of infections. This issue focuses on how to manage spa pools to minimise the risk of illness.

Amoebic meningitis is a serious and usually fatal illness, which is associated with swimming in geothermal pools. In this edition we discuss how to avoid catching this rare disease.

Treated Timber in Early Childhood Education Centres and Public Playgrounds

There are many different chemical treatments used to make timber more durable. Small quantities of treatment chemicals can leach into soil, particularly when the timber is new. Children can be exposed to timber treatment chemicals by touching treated timber and then placing their hands in their mouths or handling food, by placing timber in their mouth or gnawing, or by eating contaminated soil. Some chemicals can be absorbed through the skin, but ingestion is thought to be a more significant exposure route.

Preservatives containing copper, chromium and arsenic (CCA) are one of the most commonly used timber treatments in New Zealand. CCA is used to treat timber to stop it rotting when used outdoors. Arsenic can slowly leach from CCA treated wood products. Arsenic is a known human carcinogen (can cause cancer) and is acutely toxic. Low levels of arsenic also exist naturally in soil.

The Environmental Risk Management Authority (ERMA) recently reviewed the public health risks associated with CCA-treated timber. The review focussed on the exposure children may receive when playing on CCA treated playground equipment, and was prompted by the release of a report in the USA (the Maas Report) and associated public concern. Copies of the ERMA report "*Report on Copper, Chromium, Arsenic (CCA) treated timber*" are available from the ERMA website (www.ermanz.govt.nz).

ERMA found that although arsenic is known to cause some cancers, there is insufficient information to conclude whether children's exposure to CCA poses a significant health risk in New Zealand. Based on the available evidence, there appeared to be no case for replacing existing CCA treated structures or banning all future use. However, ERMA also stated that it would be prudent to reduce exposure to arsenic from all sources; wherever feasible: new playground equipment should be built of alternative materials, and recently constructed CCA treated playground equipment should be sealed.

At the time of print, the Ministry of Education are reviewing the implications for schools and early childhood education centres. The following advice is based on information from ERMA (www.ermanz.govt.nz) and the Ministry of Health, and a pre- cautionary approach. Playgrounds in Early Childhood Education Centres, particularly where children attend five days a week, represent the greatest risk. This is because young children are smaller and much more likely to place items and their hands in their mouths.

- ▶ **Do not use any treated timber** for **woodwork** activities, **toys** or where it would come into contact with **food** or **water** supply.
- ▶ Early Childhood Education Centres should ensure children **always** wash and dry their hands after playing outside.
- ▶ Be alert to any child showing signs of **pica** (habitual gnawing behaviour (non-food items) and/or eating soil, particularly when the child should have already grown out of this behaviour). This behaviour puts children at much greater risk of poisoning. Talk to the parents of any child with pica behaviour, alert them to possible hazards at home (such as treated timber or lead-based paint) and encourage them to take the child to their GP if concerned.
- ▶ Do **not** burn treated timber or use it for firewood.

New playgrounds:

- ▶ Consider using alternatives to CCA treated timber for new playground equipment, decking, fencing and any other timber the children may come into contact with.
- ▶ All treated timber is toxic to some extent, so you will need to balance durability with toxicity, and consider how children will use the wood, their age and developmental stage, and Building Code requirements. Check with a building supplier or your local authority regarding timbers that are naturally more resistant to insects and rot.

- ▶ Treated timber debris (e.g. shavings, sawdust and scraps) should be removed immediately from the site. Dropcloths and other methods to control dust should be used to minimise contamination. Consult OSH (www.osh.govt.nz) regarding measures to protect workers' health. See also ERMA's website www.ermanz.govt.nz.

Existing CCA treated timber structures:

- ▶ If you have existing CCA treated play equipment or other structures, consider painting it or coating it with polyurethane (particularly if it is only a year or so old). Paintwork/polyurethane will need to be maintained in a good condition, and non-slip paint should be used for decking, platforms etc.

Spa pools and illness

If spa pools are not properly maintained they can make people sick. A variety of illnesses including diarrhoea, skin, ear, eye and upper respiratory infections can be caused by exposure to contaminated recreational water. Skin infections are the most common infection transmitted by spa pools. Micro-organisms which may be present in poorly maintained spa pools include *Cryptosporidium*, *E Coli 0157*, *Giardia*, *Shigella* and *Legionella*. All of these micro-organisms can cause severe illness.

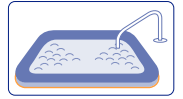
The increased temperature of the water in spa pools can cause the chlorine to evaporate more rapidly than in swimming pools. This reduces the amount of chlorine available to disinfect the water. As a result, chlorine or other disinfectant levels in spa pools need to be maintained at a higher level than in a swimming pool and they need to be checked and adjusted more frequently than in swimming pools. The pH and chlorine levels should be checked before and after use of the spa pool. Infections are unlikely to be transmitted if the water quality is appropriately maintained and monitored in accordance with the New Zealand Pool Water Quality

Standard: NZS 5826 2000. Spa pool filters also need to be maintained regularly. The water in domestic spa pools should be changed monthly. The spa pool water should also be changed if it smells unpleasant or is not clear. The spa should be emptied immediately if there is a faecal accident (poo in the water).

Good personal hygiene will also reduce the risk of the transmission of illness to spa pool users. People who have had diarrhoea in the past 14 days should not use spa pools or swim in public swimming pools. All pool users should:

- ▶ Use the toilet if necessary and thoroughly wash their hands before entering the pool
- ▶ Shower thoroughly with soap and rinse well before entering the pool
- ▶ Not drink pool water

Spa pools should be appropriately fenced with childproof fencing as required by the Fencing of Swimming Pools Act 1987 and local council by-laws.



Amoebic meningitis and geothermal pools

Amoebic meningitis is a serious illness that is usually always fatal. It is caused by a tiny organism called an amoeba (*Naegleria fowleri*) which can live in geothermal pools. The amoeba can be picked up through the nose when a person puts their head under the water. Geothermal pools contain warm water from natural sources in geothermal areas like Rotorua and Taupo. Geothermal pool can be natural outdoor pools, commercial pools including public swimming pools and spas in hotels and motels. Some homes also have geothermal pools.

All types of meningitis are serious. Most types of meningitis are caused by bacteria or viruses. Unlike other types of meningitis, amoebic meningitis can not be passed from person to person. A hospital test is needed to determine what type of meningitis a person has. Early symptoms of all types of meningitis are:

- ▶ headache
- ▶ fever
- ▶ vomiting

The symptoms of amoebic meningitis usually start 3-7 days after swimming in a geothermal pool. If you or your children have these symptoms see your doctor immediately.

The amoeba usually lives in warm soil and can survive in geothermal pool water that is not chlorinated. It can get into geothermal pools when soil is:

- ▶ in direct contact with the pool
- ▶ washed into a geothermal pool by rain
- ▶ blown into the pool by wind
- ▶ carried into the pool by people's feet

When a person puts their head under water, the amoeba can in rare cases, enter the nose and travel along the nerves

to the brain. The amoeba then infects the brain causing swelling and death. The risk of amoeba getting to the brain is much greater if the geothermal water is forced up the nose e.g. when a person jumps or dives into the water.

You can enjoy geothermal pools safely by:

- ▶ Keeping your head above water at all times. Do not put your head under the water for any reason. Never jump, splash, dive or duck in the pool as this forces water up your nose.
- ▶ Choose your geothermal pool carefully.
 - Natural outdoor pools do not have to meet safety standards. This means that the amoeba can survive in these pools.
 - Commercial geothermal pools should ideally comply with the New Zealand Standard for Swimming Pool Water Quality (NZ 5826 2000).

The safest geothermal pools are those which comply with the New Zealand Standard, or where:

- ▶ Barriers such as concrete surrounds, floors, walls, roofs etc help keep soil away from the pool water and water source, and
- ▶ Swimmers have to walk through a foot bath before entering the pool, and
- ▶ The pool is chlorinated, and
- ▶ The water is filtered, and
- ▶ There is a constant flow of new water into the pool.

This information has been sourced from a Ministry of Health brochure *Keep Your Head Above Water*. Copies of this brochure are available from the HealthEd website www.healthed.govt.nz.



Rats



Rats can be a significant nuisance and carry diseases. They can live both inside buildings and outdoors and may be found in sewers, railway embankments and landfill sites. Rats are able to burrow and can jump 60 to 90 cm. They can contaminate large quantities of stored foods such as grain. In domestic settings, rat droppings and urine can contaminate stored food. They can cause considerable damage to woodwork, electric cables, water pipes, wallpaper and other building materials by gnawing.

Worldwide a number of diseases can be spread either by rats or via parasites including fleas. These include plague, rat bite fever, leptospirosis, Q fever, listeriosis, lyme disease, yersinia enterocolita, pasteuria, hanta virus, viral haemorrhagic fevers, toxoplasmosis and flea borne (murine) typhus. In New Zealand the diseases of public health significance associated with rats are leptospirosis and possibly, murine typhus. Disease carrying organisms can be carried on the fur of rats with the possibility of food and water contamination.

Specific measures to prevent rat infestations include:

- ▶ Removing possible food supplies and using rat proof containers
- ▶ Rat proofing of buildings to prevent access
- ▶ Proactive baiting programmes to control rat populations in sewers, landfills and other potential habitats

Where an infestation has been identified, control options include gassing, trapping, fumigation and poisoning. If you suspect or are being affected by a rat infestation contact the Environmental Health Officer at your District Council for advice.

Short Notes

▶ 0800 SAFESWIM

During the summer months, Auckland City, North Shore and Rodney District Councils will be testing the water quality at popular swimming beaches to ensure that they meet Ministry for the Environment's guidelines for recreational water quality. Results from the testing programme are available either by phoning 0800 SAFESWIM (0800 72 3379) or from the websites of participating councils.

Emergency Management

The Auckland Regional Public Health Service is updating its Emergency Response and Contingency Plans to respond to and to continue its own work in the event of a Civil Defence or Public Health Emergency. These plans cover the scope of Regional Public Health Services, including Food Safety, Drinking Water, Communicable Disease, Hazardous Substance Incidents and disposal of human remains.

How prepared would you, your organisation and your family be in an emergency? The Ministry of Health has a useful booklet available that covers helpful tips, emergency survival kits and where to seek further information. This booklet titled "Protecting your Health in an Emergency" can be obtained through your local council, the Ministry of Health or by calling the Environmental Health Duty Officer telephone 09 262 1855.

Websites you might find of interest in this area include the Ministry of Civil Defence and Emergency Management www.mem.govt.nz which lists regional contacts and links as well as information on emergency preparedness.

The Auckland Regional Council has a Hazard Management Team which focuses on ways to minimise the potential effects of emergency events, and natural hazards on Aucklanders. For more on hazards in the Auckland region visit their site www.arc.govt.nz.

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