

Medical Officer of Health Environmental Health ADVICE

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Introduction

2003 is the International Year of Freshwater. In this edition of EH Advice we outline the role of the Auckland Regional Public Health Service in ensuring safe water supplies in the Auckland region and discuss measures to ensure the safety of non-reticulated water supplies.

Marine biotoxins can close non-commercial shellfish beds. Current closures are listed on the New Zealand Food Safety website. We explain the reasons behind the current warning against collecting shellfish from the coastline between the mouth of the Manukau Harbour to the mouth of the Kaipara Harbour.

Asbestos was a widely used building material. In this issue we provide advice on managing the risks associated with exposure to asbestos containing materials.

The roles of ARPHS in drinking water in the Auckland Region

- ▶ Provide advice to consumers and water suppliers.
- ▶ Protect Public Health during drinking water emergencies (taking regulatory action where appropriate).
- ▶ Register Community Drinking Water Supplies (currently 224 distribution zones, 192 treatment plants, 236 sources) and approve new Community Drinking Water Supplies (e.g. new Waikato Treatment Plant).
- ▶ Determine chemicals to be monitored for in specific supplies (ESR P2 Programme) and approve associated monitoring plans.
- ▶ Conduct surveillance sampling of public water supplies (to verify water suppliers' monitoring data).
- ▶ Survey registered Community Water Supplies annually for compliance with the *Drinking Water Standards for New Zealand, 2000*.
- ▶ Grade Community Water Supplies serving 500 or more people (these supply 80% of the population of the region).
- ▶ Investigate suspected waterborne diseases and significant drinking water complaints and prevent further illness.
- ▶ Promote fluoridation of public water supplies to improve oral health.

It is expected that changes in legislation will result in new roles within the service:

Drinking Water Assessors will assess Public Health Risk Management Plans for Community Water Supplies.

Local Government will be encouraged to assess and meet community needs for sanitary infrastructure (applying for Sanitary Works Subsidies where appropriate).

Water Supplies

All premises, including houses, early childhood education centres, workplaces, schools and food premises should ideally have a potable (and preferably wholesome) drinking water supply. There is a legal requirement for workplaces to

meet the Drinking Water Standards of New Zealand 2000 and for food premises and manufacturers to meet the Food Hygiene Regulations 1974.

Potable is interpreted as not containing or exhibiting any determinand (contaminant) to an extent above its maximum acceptable value specified in the Drinking Water Standards for New Zealand, 2000. (That is, it is "safe".) Wholesome water is interpreted as potable water that does contain or exhibit any determinand that exceeds the aesthetic guideline values in the Drinking Water Standards for New Zealand, 2000. (That is, it tastes and looks OK too!).

Reticulated water supplies serving 500 or more people are graded annually by the Auckland Regional Public Health Service. Most city supplies received an A+ grade in the last round indicating a high level of confidence that public health risks are low. Some smaller supplies received less satisfactory grades. Grades for registered water supplies can be found in the Community Drinking Water Register in your local library or by contacting this service.

If you have your own water supply (roofwater, borewater or surface water), you need to ensure the quality of the water is adequate, as follows:

Use	Requirements
Drinking, cooking, food preparation	Potable (and preferably wholesome)
Handwashing and cleaning	Free from microbiological contamination (including bacteria, viruses and protozoa)
Toilet flushing	Not grossly contaminated

Microbiological contamination is the biggest health risk from untreated water supplies. Some waterborne microbes (germs) can cause serious illness - not just a "tummy bug", particularly for chronically ill, elderly, or immune-compromised people,

and pregnant women. Untreated roofwater, streamwater, and springwater are not considered reliable potable water supplies, because they can be easily contaminated. Similarly, unless you have scientific evidence that your bore water source is secure groundwater (i.e. not able to be contaminated), untreated bore water is not considered potable. Chemical/mineral contamination may also be an issue with some bore water supplies or roofwater supplies.

There are a variety of methods for treating small water supplies. Generally speaking, protozoa (cryptosporidium and giardia) are usually filtered out, and bacteria and viruses are usually disinfected using chlorine or UV light. Chemical and mineral contaminants may be more difficult to remove.

In most cases, it is better to treat the whole water supply, rather than to have different taps with different levels of treatment. However, if the premises has two different water sources (e.g. bore and roofwater) there may be alternative ways of ensuring that water used for each purpose is treated appropriately.

All water supplies need to be maintained to ensure the water is protected from contamination and that treatment is effective.

Any water supply that supplies 25 or more people for 60 or more days a year, should be registered as a Community Water Supply with the Auckland Regional Public Health Service and monitored for compliance with *Drinking Water Standards for New Zealand, 2000*. We also recommend that all non-reticulated supplies serving food premises, early childhood education centres, schools, health services and medical centres should be registered and monitored.

The current monitoring requirements of the Drinking Water Standards for small supplies are not too expensive or time-consuming (monthly tests for a bacteria called *E. coli*). Monitoring gives you confidence that treatment is working, and the supply is safe, especially where vulnerable groups, such as children, are involved.

The *Drinking Water Standards for New Zealand, 2000* are available from www.moh.govt.nz/water.

The booklets *Household Water Supplies*, *Water Collection Tanks*, and *Secure Groundwater Bores and Wells* are useful for premises with their own water supply. An excellent framework for risk management, applicable to all water supplies, is given in *How to Prepare and Develop Public Health Risk Management Plans*.

Please contact us (ph (09) 262 1855), for copies of these booklets, to register your water supply, or to clarify any aspect of the *Drinking Water Standards for New Zealand*. For detailed advice about water treatment, we recommend you seek expert advice.

In an emergency (e.g. your water treatment fails), you can boil water to make it potable (unless it has some types of chemical contamination). Community Water Supplies should have contingency plans for emergencies and operators should contact us immediately (ph (09) 262 1855) if the supply or water quality fails for any reason.

Drinking Water Legislation and Policy Changes

For updates on new drinking water legislation, you can check the Ministry of Health website www.moh.govt.nz/water.

We understand that new Grading criteria are soon to be released by the Ministry of Health on their website. These criteria will be used when we next Grade Community Water Supplies. After the criteria are released, we plan to hold a workshop for affected water suppliers, to discuss the application of the new criteria and process for the next round of Grading. In the interim, water supplies should email any queries for discussion at the workshop to Snezana Nikolic SnezanaN@adhb.govt.nz or Megan Owen MeganO@adhb.govt.nz.

Marine biotoxins and non-commercial gathering of shellfish

The New Zealand Food Safety Authority which manages the marine biotoxin monitoring programme at the national level has a website containing information relating to the non-commercial taking of shellfish. It also lists shellfish gathering areas in New Zealand affected by marine biotoxins and warnings currently in force.

<http://www.nzfsa.govt.nz/consumers/marine-biotoxins>

There is currently a public health warning advising against the collection and consumption of shellfish from the coastline that extends from the mouth of the Manukau Harbour to the mouth of the Kaipara Harbour. The warning has been issued due to the presence of paralytic shellfish poisoning levels in shellfish, which are routinely monitored at the coastline.

Paralytic shellfish poisoning (PSP) is caused by a group of 24 chemicals called the saxitoxins and the gonyautoxins. These chemicals are produced by certain types of algae (in this case *Gymnodinium catenatum*) and are released into shellfish when the algae are eaten. The toxins are heat stable, so cooking will not destroy them.

Symptoms of Paralytic Shellfish Poisoning include:

- ▶ Numbness and tingling (prickly feeling) around the mouth, face or extremities first.
- ▶ Headache and dizziness
- ▶ Moderate to severe symptoms include a spread of the prickly areas, floating feeling, difficulty swallowing and speaking with slight difficulty in breathing and a rapid heart rate.
- ▶ Symptoms can progress to dizziness; double vision and paralysis and eventually breathing may stop.

These symptoms may take as long as 12 hours after eating shellfish to develop and then may progress rapidly causing respiratory failure within 2 hours. If you are ill with these types of symptoms after eating shellfish from any source please consult your doctor immediately and advise health protection staff at your local public health service.

If somebody has these symptoms and suffers breathing failure after eating shellfish from any source, rescue breathing and cardiac massage will need to be carried out until medical assistance arrives. The person will then be placed onto artificial respiration. As there is no antidote for paralytic shellfish poisoning, affected people have to be kept alive until their nerves become free of the toxin and they are able to recover.

PSP can affect **all** shellfish, including scallops, tuatua, cockles, oysters, mussels, pipis, catseyes or pupu, and kina or sea urchin. The gut of paua, crayfish and crabs should not be eaten when taken from within the areas closed because of elevated levels of PSP toxins. The gut and skirt of scallops should never be consumed even when taken from areas that are not subject to warnings about biotoxins. While the muscle of fish is safe to eat, the gut contents of fish that feed on algae should be safely disposed of. Cats and dogs can also become ill from eating shellfish and the guts of fish harvested from affected areas.

▶ For further information please contact the duty Health Protection Officer, Environmental Health. Telephone (09) 262 1855. More information on marine biotoxins is also available from the Ministry of Health's website www.moh.govt.nz. This website was the source of the information used to prepare this article.

Asbestos in houses

Asbestos is the name used for a group of natural minerals that are made up of many small fibres. Asbestos only poses a risk to health when inhaled as fine dust. The risk to health increases with the number of fibres breathed in, the frequency of exposure and cigarette smoking. There are a number of diseases that are related to exposure to asbestos fibres:

- ▶ asbestosis (scarring of lung tissues)
- ▶ mesothelioma (tumours which develop around the lungs)
- ▶ lung cancer.

When can asbestos affect health?

Factors that will influence whether asbestos will influence health include:

- ▶ how long a person was exposed
- ▶ when the exposure started
- ▶ whether a cigarette smoker
- ▶ the size, type and number of asbestos fibres.

Exposure levels indoors depend on the asbestos type and its condition. Brief exposure to low concentrations of airborne asbestos fibres is unlikely to be a major health risk. Constant exposure to crumbly or powdery, damaged, exposed, or poorly maintained asbestos materials may increase the health risk. A lifetime exposure to asbestos dust containing 100 fibres per cubic metre has been estimated to result in 2 - 4 excess cancer deaths per 100,000 people.

Possible sources of asbestos in the home include:

- ▶ textured ceiling claddings
- ▶ vinyl floor tiles and as backing on vinyl sheet flooring and adhesives
- ▶ some roofing and siding shingles
- ▶ insulation in houses built between 1930 and 1950
- ▶ textured paint and patching compounds on wall and ceiling joints
- ▶ artificial ash and embers used in some gas-fired artificial fires
- ▶ walls and floors around stoves, stove-top pads

- ▶ lagging of hot water pipes
- ▶ old ironing boards

Asbestos-containing material is not a risk if it is in sound condition and not disturbed by drilling etc. It is therefore best left undisturbed. The risk situations in the residential setting are where the material is:

- ▶ friable
- ▶ loose, fluffy or flaking
- ▶ showing signs of mildew or mould damage
- ▶ cracking
- ▶ not securely fastened.

If the material meets one of the above criteria we recommend it is tested for asbestos and this can be arranged via Regional Public Health. The property owner should make arrangements with a laboratory to have testing performed before the removal of any suspected asbestos-containing material, whatever its condition, from a home.

Asbestos-containing material that is in poor condition should be sealed, encapsulated or enclosed or, preferably, removed. Under the Asbestos Regulations 1983, workers who wish to remove or work with asbestos-containing material are required to have a Certificate of Competence and take precautions to protect health.

What to do if asbestos is present or suspected?

- ▶ take every precaution to avoid damaging asbestos containing materials
- ▶ keep activities to a minimum in areas having damaged materials that may contain asbestos
- ▶ do not sweep debris that may contain asbestos
- ▶ have analysis and remediation carried out by licensed professionals who will ensure that the area is properly decontaminated.

▶ Further advice on sampling and on health issues related to asbestos can be obtained from the duty Health Protection Officer, Environmental Health. **Phone 09 262 1855**

Short Notes

▶ New Air Quality Standards

The Ministry for the Environment is developing a package of national environmental standards. These standards will be mandatory "bottom-line" regulations that apply nationally. The first set of standards will focus on air quality. The air quality standards will include:

- ▶ Ambient air quality for priority contaminants
- ▶ Emission standards for new solid-fuel burning appliances
- ▶ Prohibitive standards for activities which discharge significant quantities of harmful contaminants into the air, such as dioxins.

Information on the background to each of the standards is available from the Ministry for the Environment website www.mfe.govt.nz/laws/rma/standards.

If you would like to make comments on the proposed standards or obtain more information, contact standards@mfe.govt.nz. Comments on these standards will be received until late November.

▶ Treated timber and domestic fires

Painted and/or treated timber should not be burnt in domestic fires. Some old paints contain lead and other potentially toxic heavy metals and certain treated timber products contain copper, chromium and arsenic; these metals can be released when the wood is burnt. This is particularly important if you collect drinking water from your roof. The Auckland Regional Public Health Service has recently investigated a case where a roof water supply was contaminated with arsenic by burning treated timber.



Dayong Li

Dayong Li joined the Environmental Health team as a Technical Officer in February 2003. He has a Bachelor of Chemical Engineering from China and a Master of Environmental Engineering from the University of Auckland. He has been involved in wastewater research at University of Auckland. Dayong is currently working in the areas of mosquitos surveillance, drinking water and resource management.