

Feature

How healthy is your





Next to air, water is the stuff of life and it pays to keep an eye on its quality, says Carolin Pickering

I never used to think about the water coming out of the taps in my home. I took it for granted that it had been treated so we could happily use it for cooking, making tea and coffee, drinking and cleaning our teeth. It's strange that when we travel abroad, we're advised to, and do, routinely drink bottled water yet never think to challenge what comes through the taps in our own homes or places of work.

Once I had my baby I breastfed for as long as I could and then progressed to giving our young toddler some formula milk made with our tap water. As I said, I never thought to question the water quality in my own home. That was until we wanted to sell our house and the surveyor found a lead pipe. Lead poisoning can have some long-term effects on health and once lead is in our bodies it cannot be removed. If lead leaches into drinking water it can lead to systemic and development problems in both adults and children.

As a new mother, can you imagine how shocked, scared and worried I was that I might have inadvertently subjected my family to potential lead poisoning? It was a real wake-up call for me and since then, I have become very conscious about the water my family consumes.

Water is a fundamental part of life, it makes up about two thirds of our body weight and to remain hydrated, the Department of Health recommends we drink at least 1.2 litres of it every day. It's one of the things we consume most of and can be a great source of vital minerals and trace elements, so it's important that what we are drinking is good for us!

Both the British water authorities and water suppliers are doing a fantastic job in cleaning up the water that comes into our homes, but they cannot be totally responsible for water safety once it has left their treatment plant. Many people don't realise that once water has left the water supplier it can become contaminated, either through damaged pipes or even within our own homes.

Bacteria can build up on taps themselves, copper or lead pipes can leak through corrosion, and even small rodents and birds can perish in water tanks stored in our roofspace. All these instances are above and beyond the remit of your local water authority, but it's important to understand that low-level exposure to contaminants can, over time, cause severe illness.

Does this sound scary? It should. It's essential to recognise that safe

drinking water is not only a problem in third world countries.

Contaminants can range from naturally-occurring minerals to man-made chemicals and by-products. Some contaminants cannot be detected by smell, taste or appearance. But there are some tell-tale signs that water quality may be affected: stains on your laundry or appliance; oily film on boiled water; white spots on glasses; unusual smells or tastes; and recurrent incidents of gastro-enteritis.

Even knowing the hardness of your water can be useful in being able to take remedial action to prolong the life of domestic appliances like washing machines. Ironically, although hard water can cause scaling of domestic appliances, it can also help protect your pipes from leaching! Over time, limescale will settle within the pipes and provide protection from copper or lead pipes leaching through corrosion. A sort of mineral lagging!

Waterborne diseases have the greatest impact on vulnerable groups, like babies and children, pregnant and lactating women and the elderly but they can affect anyone. Whilst our water authorities and governments do an unprecedented job of maintaining water supplies, contamination can happen between source and table so getting into the habit of regularly monitoring domestic/commercial tap water or drinking fountains in local communities is no bad thing.

And it's not just mains water supplies that can be affected. A number of homes, holiday accommodation, businesses, leisure facilities and small communities in England and Wales are served by private water supplies. The source of these supplies varies from boreholes and springs to larger groundwater and surface water supplies. A report published in July 2011 by Department for Environment, Food and Rural Affairs (<http://dwi.defra.gov.uk/about/annual-report/2010/private-england.pdf>) revealed one in four private water supplies like wells were not fit for purpose, with 9.6% of samples failing to comply with the EU Drinking Water Directive.

Both private and mains water resources are also subject to climate vagaries and a growing frequency and intensity of extreme weather conditions can have a real effect on quantity and quality of supplies. As farming intensifies there is also the constant risk of pollutants such as fertilisers and pesticides entering rivers, lakes and groundwater sources.

So how often should you check your water supply? I test mine at least once a year, but there are tell-tale signs and occasions when it's advisable to check out your supply.

- If you have a private water source
- If you're moving to a new property
- If water appears discoloured, or has a strange taste or smell
- If your water causes stains on laundry or fixtures
- If you know or suspect that you may have lead pipes (more advice on what to do if you have lead pipes can be found on <http://www.simplexhealth.co.uk/learn-more-cms-38.html>)
- If water supply equipment, eg. pumps and chlorinators, are wearing rapidly
- If water-dependent household appliances don't appear to be working effectively
- If you have installed a water softener or some sort of filtering system to ensure it is working correctly

I think the onus is on everyone to be responsible for regularly checking their own water supply as we can't continue to assume that what our water supplier delivers is clean and safe. I would

always test the water before moving to a new property, as well as annual checking to ensure no contamination has occurred since. You'd not think twice about checking water safety while abroad so it makes sense to keep an eye on things closer to home.

Regular testing of water at home, work or community centres does not have to be expensive, there is a range of easy-to-use and easily understood water testing kits available for both urban and private water supplies. Many people spend an inordinate amount each year – up to £100 per person – on bottled water because they don't like the smell or taste of what comes out their tap. There could be a perfectly good reason for that and with test kits costing less than £20, it seems a small price to pay for peace of mind.

I wish I'd known about the incidence of water contamination before I discovered my lead pipe as the only sleepless nights I'd have suffered then would have been getting up to feed my baby rather than worrying that we'd all been poisoned!

Common contaminants

Many contaminants cannot be detected by smell, taste or look and the most common problems you're likely to encounter with water quality include:

Lead	Chlorine
Nitrates and nitrites	Iron
Bacteria	Copper
Chlorine	Sulfate
pH	Hydrogen sulfide
Hardness	



Top tips

Ideally you should only use a mains fed tap for drinking water but in some older properties a storage tank provides all the cold water so ensure the tank is in good order and covered securely so nothing can enter it.

If you've just moved to a new address check your water for the most common contaminants.

Knowing the water hardness levels in your area can help protect kitchen appliances and many water companies make this information available on their websites via a postcode search.

If you notice a particularly unpalatable smell or taste to your water, which does not go away in a short time, contact your water supplier.

Bacteria can build up around taps and inside the spout so regularly clean them with a mild household disinfectant and don't let food come in contact with taps. Never hang your dishcloth on the tap to dry.

If you have a lead pipe or when no water has been used in the house for several hours always let the water run for a while (approx one washing up bowl) as the water that has been sitting in the pipe is more likely to contain contaminants. Don't waste this water; water your garden.

If you suspect contamination of your water, either by discolouration or smell, check with your neighbours to see if the problem is specific to your house.

If you have your own private water supply, such as a well or a spring, you should regularly check it for contamination.

Always use freshly drawn water from the mains tap (usually the cold tap in the kitchen) for cooking and drinking. Don't use water from your bathroom taps as it usually comes from a storage tank and it is not as fresh and safe.

What does it mean?

Since I discovered my potential lead leaching problem I started to research what different stain colours could mean and what certain tastes or smells could signify.

Colours:

Blue/green stain: Could indicate the presence of copper, which could either have come from the supplier or from corroded pipes en route. If the copper is higher than 30ppm you could experience vomiting, diarrhoea or gastrointestinal distress. Corrosion in pipes is more likely to occur with acid water (pH below 6.8).

Red/brown stain: Could signify iron or manganese in your water.

Brown water: Potentially caused by rust (iron oxide) dislodged if a pipe is disturbed which can temporarily turn water brown. Simply running the tap should clear it.

Yellow water: Rare but can happen when water passes through marshlands and peat soils. It's more commonly found in surface water supplies or shallow wells. Although the colour may be off-putting it initially presents no health hazard, but if you're worried about your water you should always get it checked before consumption.

Cloudy white/foamy: Often just harmless air bubbles, floating white particles could be flakes of limescale or calcium carbonate, which have formed in the pipework or kettle and signify water hardness.

Oily film: If you notice an oily film on the surface of boiled water it could indicate that galvanised iron pipes and fittings need attention. In that case, the film is not oil but a shimmering layer of very small, flat crystals of a zinc compound, which are formed and then float on the surface. As a short-term measure, flush the pipe before using the water and if the problem persists have your pipes checked.

Smell and taste:

Chlorine: Used for hygiene purposes for more than 100 years. Chlorine in water may be present in two forms; free and combined. Water companies keep the level of free or combined chlorine to 0.5mg/l or less. Should you occasionally smell or taste chlorine it could be due to maintenance work and refrigerating a jug of the water will remove the smell but throw away any unused water after 24 hours and clean the jug regularly.

Metallic taste: Corroding copper or zinc pipes can produce metallic tastes and some systems have a high mineral concentration, giving a salty or soda taste. The risk of this happening is higher when water has a low pH (acid).

Rotten egg odour: When water flows through decaying organic deposits, hydrogen sulfide gas could be picked

up, which may be released later into the air. This gas produces a rotten egg odour which can, at high levels, corrode plumbing and tarnish silver.

Musty/earthy tastes or smells:

Mostly harmless organic matter. Bacteria can grow on grease or fibre washers used in plumbing, especially if the pipework is warm and rarely has water flowing through it. Even low amounts can cause unpleasant odours so if the problem persists, it may be worth cleaning and disinfecting the plumbing system.

Find out more

- Water UK – Looking After Water in Your Home http://www.water.org.uk/Looking_after_water_in_your_home
- The European Drinking Water Directive http://ec.europa.eu/environment/water/water-drink/index_en.html
- The Water Information System for Europe (WISE) <http://water.europa.eu/>
- Drinking Water Inspectorate (England & Wales) which is set up to regulate public water supply companies in England and Wales <http://dwi.defra.gov.uk/> or www.dwi.gov.uk



Carolin Pickering is director of SimplexHealth, which sells a wide range of easy-to-use home water testing kits. On her website www.simplexhealth.co.uk she also offers lots of free

advice and help in understanding your water at home and what to do when certain contaminants have been identified.