

# A triumph

Pay for bottled water if you like the taste, but don't kid yourself it's healthier than tap water.

## IN A NUTSHELL

- For most of us, there's no good reason to believe bottled water's any healthier than tap water. Tap water generally has to comply with strict standards, and it's thoroughly tested — with the bonus that it costs virtually nothing.
- Bottled water doesn't necessarily taste better. Our taste panel couldn't distinguish between either of the two leading brands of bottled water (*MOUNT FRANKLIN* and *FRANTELLE*) and Sydney tap water. It may be different in other places.
- Bottled water can be a handy alternative to soft drinks or juice when you're out and about, and it has no kilojoules.



**B**ottled water's now big business. In Australia we down 150 million litres a year at a cost of \$123 million. Which seems odd when most people can turn on a tap and get a drink of water for virtually nothing.

We ran a quick e-poll on CHOICE Online asking the main reason why people bought bottled water. Of 612 responses:

- 24% said they thought it less likely to contain harmful bacteria.
- 16% thought it tasted better than tap water.
- 8% said they thought it was less likely to contain nasty chemicals.

The rest, though, were more down-to-earth — 29% simply thought it a handy drink to have when you're out and 22% said they bought it mainly because it comes in a useful bottle that you can refill from the tap.

What's the real story with bottled vs tap water?

## THE QUALITY OF TAP WATER

Tap water is required to comply with the *Australian Drinking Water Guidelines* and to be tested regularly for bacteria and chemical contaminants. It's treated to remove sediment, then filtered and disinfected to kill harmful micro-organisms and prevent them from regrowing in the water mains and pipes. In most places a small amount of fluoride is also added because it's been proved to be of enormous benefit in preventing tooth decay.

The usual disinfectant is chlorine. It's cheap and effective, and has a long history of safe use around the world. However, there's concern that chlorination can produce very small amounts of chemicals called trihalomethanes (THM) that may cause cancer. THM are produced by the reaction of chlorine with organic matter from the soil and vegetation in the catchment area. Most of the organic matter is removed before the water is treated with chlorine so the risk is

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thought to be very small. Even alternative disinfectants, such as ozone (often used for bottled water) produce by-products that could present some health risks.

The benefits of chlorination appear to vastly outweigh the risks. According to the World Health Organization (WHO), the risk of cancer from THM is 100 to 1000 times less than the risk of death from harmful bacteria in unchlorinated water.

Other concerns about the quality of our tap water came to the fore with the cryptosporidium and giardia scare in Sydney in 1998. These are protozoa rather than bacteria, and can cause diarrhoea. They're more resistant to chlorine than most other micro-organisms but filtering should remove them from tap water. Water suppliers regularly test for them so the risk of infection from tap water is now very small. (You're much more at risk from protozoa if you swim in a public pool.)

As for the taste, obviously it depends on where you live. But if it's chlorine you don't like, it's easily got rid of by keeping a bottle or jug of water in the fridge — after a few hours the smell and taste disappear. And see *Can you tell it from tap water?*, below right, for the results of a small taste test on bottled vs tap water.

## IS BOTTLED WATER ANY SAFER?

The names are evocative. The labels have pictures of cascading mountain streams. The claims imply bottled water is purer and healthier than tap water: *additive free ... collected fresh and pure ... free from impurities that you find in tap water ... helps keep you fit and healthy ... supplement your body's natural mineral requirements.*

While in Europe there are strict controls and 'spring water' has to be untreated and bottled at its source, we don't have similar regulations in Australia. 'Spring water' here is quite likely to have been transported in bulk and treated much like tap water. *What's in a name?*, right, has more detail on this.

Bottled water is regulated under the national Food Standards Code, and the purity standards imposed aren't as strict as those for tap water. However, just like any food that's sold in Australia, bottled water must be free of harmful bacteria, and there are specified limits to the amounts of substances like arsenic and heavy metals (such as copper, lead and mercury) it can contain.

The industry's Australian Bottled Water Institute (ABWI) has a 'Model Code' that specifies a self-regulation scheme for members which includes a testing program, but any independent checking is left to the states. However, state health authorities almost never do any testing because bottled water is considered to be low-risk.

Tests carried out for the *Weekend Australian* in March this year showed that tap water from Sydney, Melbourne and Adelaide contained no harmful bacteria — and the same applied to the two leading brands of bottled water (MOUNT FRANKLIN and FRANTELE).

## WHAT'S IN A NAME?

Most brands of bottled water call themselves 'spring water', but there are also other types.

■ **Spring water**, according to the ABWI 'Model Code', must come from underground. It contains 'soluble matter' (which is mostly dissolved minerals), and no extra minerals should be added. But it's not necessarily untreated and it doesn't

## Can you tell it from tap water?

We chose the two leading brands of bottled water, MOUNT FRANKLIN and FRANTELE (together they supply nearly a third of the bottled water sold in Australia) and compared them with Sydney tap water. The water was tasted at room temperature and we stored the tap water overnight in empty MOUNT FRANKLIN or FRANTELE bottles.

We asked our 21 tasters to pick the odd one out of three samples — they didn't know if two were the bottled water and one tap water, or vice versa. They then had to say which they preferred, the odd one out or the others.

It's only a small test but its results backed up other research findings: our testers couldn't distinguish between either of the two big brands of bottled water and Sydney tap water.

necessarily come from the picturesque location implied by the graphics on the label. Unless the label specifies that the water has been ‘bottled at source’, it’s probably been transported to a bottling plant in a bulk tanker (the two biggest brands, **MOUNT FRANKLIN** and **FRANTELLE**, both fall into this category). Many spring waters are filtered and some may be chemically disinfected (usually with ozone).

■ **Artesian water** is similar, except that the water probably comes from deeper underground. (Artesian water is confined underground between layers of impervious rock and is under pressure, so it comes to the surface without pumping.) One of the brands (**MOREE Artesian Mineral Water**) has a high mineral content, but the others have much the same as spring water.

■ **Purified water** could be tap water that’s been distilled (a process that removes almost everything that’s not H<sub>2</sub>O) or otherwise treated to remove bacteria, dissolved organic material and minerals. Some brands, though, are purified spring water.

### USEFUL MINERALS?

Most (but not all) bottled water is labelled with a ‘typical analysis’ of its mineral content. It’s a guide to the water’s mineral content but actual levels may vary over time.

In general, the levels of minerals in bottled water are quite low compared with the daily amount you need from your diet. Calcium is the one that’s declared on bottled water labels that would most likely be of benefit, as, according to the Australian Nutrition Survey, about 90% of women and 70% of children don’t get enough. According to the labels of the brands we found, **VITTEL** has the most (91 mg/L), but you’d need to drink about 10 L of it to get near the daily recommended intake of calcium.

## WATER ON THE BRAIN?

We found three brands of bottled water with names suggesting they’re ‘organic’ (**ORGANIC SPRINGS**, **OZ ORGANICS** and **SNOWY MOUNTAIN ORGANIC**). If you’ve studied chemistry you’ll know that ‘organic’ refers to compounds of carbon (other than carbon dioxide and carbon monoxide). Water, H<sub>2</sub>O, doesn’t qualify.

And according to the *National Standard for Organic and Biodynamic Products*, natural products such as water can’t be labelled as ‘organic’ or ‘bio-dynamic’. Nevertheless, **ORGANIC SPRINGS** and **OZ ORGANICS** have the Biological Farmers of Australia (BFA) logo on their labels. BFA told us that water shouldn’t be labelled as ‘organic’ because it’s not of agricultural origin. But it can be registered with them as an ‘approved product’, meaning that it’s free from additives or pollutants.

If you’re concerned about too much sodium, the only bottled water we found with a significant level according to its label was **MOREE Artesian Mineral Water**. One litre would give you more than 10% of your maximum recommended intake.

### AN EXPENSIVE ALTERNATIVE

We found bottled water for just 46 or 47 cents per litre (see the table, far right) — but tap water’s even cheaper. Unless you really hate the taste of your local water or you’re after out-and-about convenience, there’s no other good reason to pay for something that’s not guaranteed to be safer and is no better for you. Hence the title of this article: *A triumph of marketing*.

You can get ‘bottled’ water in bigger containers (we found sizes of up to 10 litres in some supermarkets) but the price doesn’t get significantly less — and you run the risk of the water becoming contaminated with bacteria from the air before you’ve finished it (see *Bottled risks*, right).

But bottled water’s a handy alternative to soft drinks and juices when you’re out. It has no sugar and no kilojoules — with the added bonus that it’s usually the cheapest drink in the chiller cabinet. ■



## Bottled risks

You have to take some care with bottled water. Tests carried out by *Health Which?* in the UK found that once it's opened, bacteria levels can increase if it's kept at room temperature. Air can carry bacteria and the spores of moulds, so once you've opened a bottle of water it's safest to keep it in the fridge.

This can be a problem if you buy the larger containers or have home delivery. And it means you also shouldn't leave bottles of water lying around in the car if they've been opened (or refilled from the tap at home). Drinking from the bottle can spread bacteria from your mouth into the water too, so for both reasons it's safer to throw out any you haven't finished. You may have got away with it so far, but it's safer to take an unopened (or freshly refilled) bottle each day.

Bottled water definitely shouldn't be used for babies unless you boil it first (just as you would tap water). And giving children exclusively bottled water deprives them of the fluoride that's added to tap water in most places to increase the resistance of their teeth to decay.

On the positive side, there's no substance to fears that bottled water is contaminated with toxic chemicals from the plastic bottle. Nearly all the brands of bottled water in our test came in PET bottles (and the few that weren't PET were glass). PET (short for polyethylene terephthalate) has no plasticisers — nothing to leach out into the water.



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1 Brand (in order of price per litre)

2 Price / L (\$)  
Size priced (mL)  
Origin

### SPRING WATER

<b>NORTHBROOK</b> Natural Australian Spring Water	0.46	1500	Australia
<b>HOME BRAND</b> Natural Spring Water	0.47	1500	Australia
<b>BLACK &amp; GOLD</b> Natural Spring Water	0.58	1500	Australia
<b>TORQUAY</b> Natural Spring Water	0.73	1500	Australia
<b>BKK</b> Aqua Still Spring Water	0.74	1500	Australia
<b>IGA</b> Evita Natural Spring Water	0.75	1500	Australia
<b>ARTIC ICE</b> Natural Spring Water	0.79	1500	Australia
<b>COLES</b> Natural Spring Water	0.83	600	Australia
<b>PEATS RIDGE SPRINGS</b> Natural Still Spring Water	0.92	600	Not stated
<b>SNOWY MOUNTAIN</b> Organic Natural Spring Water	0.93	1500	Australia
<b>AROONA</b> Sports Body Quencher	0.98	1000	Australia
<b>BI-LO</b> Natural Spring Water	1.08	600	Australia
<b>OZ2O</b>	1.08	600	Australia
<b>ORGANIC SPRINGS</b> Pure Still Spring Water	1.13	1500	Australia
<b>DANCING</b> Natural Spring Water	1.15	600	Australia
<b>H2GO</b> Pure Spring Water	1.32	750	Australia
<b>MOUNT FRANKLIN</b>	1.57	1000	Australia
<b>FRANTELE</b> All Natural Spring Water	1.62	600	Australia
<b>OZ ORGANICS</b> Spring Water	1.65	600	Australia
<b>COLES FARMLAND</b> Natural Spring Water	1.73	600	Australia
<b>COOL RIDGE</b> Still Spring Water	1.85	600	Australia
<b>AQUAQUEEN</b> Australian Spring Water	1.90	500	Australia
<b>SUMMIT</b> Natural Spring Water	1.98	600	Australia
<b>SANTA CROCE</b> Natural Mineral Water	2.47	750	Italy
<b>VITTEL</b> Natural Mineral Water	2.80	500	France
<b>EVIAN</b> Natural Spring Water	3.02	500	France
<b>ACQUA PANNA</b> Natural Mineral Water	5.00	750	Italy

### PURIFIED WATER

<b>BICKFORD'S</b> Aqua Pura	0.74	1500	Australia
<b>WATERFORDS</b> Pure Water	0.99	2000	Australia
<b>PUMP</b> Pure Water	1.08	750	Australia
<b>NOBLES</b> Pureau	1.23	2000	Australia
<b>ORIGINAL JUICE CO</b> Purified Water	1.32	600	Australia
<b>GRANDER</b>	1.63	600	Australia
<b>ADAMS ALE</b>	1.92	600	Australia

### ARTESIAN BORE WATER

<b>IOLI</b> Natural Spring Water	0.66	1500	Greece
<b>ETERNAL</b> New Zealand Artesian Water	1.65	600	NZ
<b>MOREE</b> Artesian Mineral Water	1.99	1500	Australia

#### 1 Brand

These are the brands we found distributed across several states. Many others have a more local distribution. We've ranked them by price and grouped them by type.

#### 2 Price per litre

Bottle sizes vary, so for comparison we calculated the price per litre based on what we paid in Sydney or Adelaide in March 2005 for the size closest to one litre.