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Use the **academic address** when writing about **salt control**—see the panel on page 4.

## Iodised salt and child health

On 14 March the popular ABC television program 7.30 Report made this startling announcement:

‘For years we’ve been told that too much salt is bad for us, and that is true. But now there’s a new public health campaign about how **a certain type of salt is essential, especially for children**’.

But script writers for the announcer (Kerry O’Brien) misunderstood the message—fortunately the real message is that the **children only need IODINE, NOT salt**.

ABC reporter Mike Sexton resolved the ambiguity with a clear statement of the true position a little later. He said (and the transcript confirms it) that **those advocating iodised salt are quick to point out they aren’t endorsing extra salt being added to food, merely switching to iodised salt**.

### World Health Organisation (WHO)

WHO and SALT—Compelling scientific evidence that the diet of industrial societies is far too salty has led WHO to call for worldwide public health campaigns to reduce salt intake. We should use far less cooking and table salt and the food industry should make a *massive reduction* in the heavy salting of processed foods.

WHO and IODINE—The evidence on iodine points in exactly the opposite direction. The latest evidence on brain development has led WHO to call for public health campaigns in all endemic areas of iodine deficiency (which now include Australia) to supplement the diet with *more iodine*, especially in pregnancy and childhood.

Children—from conception to adolescence—need more iodine.

Women—pregnant or breastfeeding—therefore need more iodine too.

WHO and IODISED SALT—Processed foods will contain added salt for decades, so it might as well be iodised. More iodine could be added gradually to balance the steadily declining use of salt as a food additive.

But a special WHO committee sees that LESS SALT and MORE IODINE as equally important, and that iodised salt muddles people by mixing additives with opposite messages—salt (LESS) and iodine (MORE).

It creates a dilemma for people who have **already** given up salt in cooking and at the table—**over 50%** in a Hobart survey. They have to choose between **re-educating their palates** with salted meals again, or **going without iodine**.

That is why the special WHO committee is about to issue special recommendations on the best long-term **alternatives to replace salt** as a carrier for iodine.

### Meanwhile use iodised bread

Tasmania is iodising bread again, and Food Standards of ANZ (FSANZ) has announced it will advise the Australian government to do the same in other states. As an interim measure the salt in ordinary bread will be iodised.

Salt skippers can use 0.4% potassium iodide drops to iodise their bread (in [www.saltmatters.org](http://www.saltmatters.org) click Shopping Guide and print page 3).

## Nutrition Research Update - CHILDREN AND SALT

With Paul Jones – Dietitian/Nutritionist – Warwick Health Services, Queensland

Most people control their salt intake late in life, after a diagnosis of heart disease or high blood pressure. Childhood should be the time to begin [1].

A recent meta-analysis of 13 trials in the last 25 years [2], has even more clearly demonstrated that this is way we should all be eating, especially children.

Three of the trials in the meta-analysis trace the link right back to early infancy between salt intake and the rise of blood pressure with age.

In 1983, when bottle feeds had the salt content of cow's milk (four times greater than breast milk) a study found that the average blood pressure of bottle-fed infants was 2 mmHg higher than that of breastfed infants.

Today bottle feeds must not be any saltier than breast milk, but the powder has to be mixed with normal tap water. Very salty tap water (sodium content 38mg/100mL) has been found to give infants a 5mmHg higher blood pressure.

The sodium content of breast milk is 14 mg/100g (under 16mmol/L), and another study has found that breastfeeding in infancy is associated with lower blood pressure later in life.

Another 9 trials in the meta-analysis include older children aged 8-16. Both systolic and diastolic blood pressure were reduced in the children eating less salt (an average of 42% less).

This effect on blood pressure is likely to track into later life. Lower blood pressures give children a better start in life and should reduce the later risk of cardiovascular disease across the population.

Foods specifically marketed to children are a big part of the problem. A 2006 American study found the average 12-24 month old was already exceeding the adult recommended salt intake for optimum health [3].

So how far do foods attracting children with

cartoon characters match the dietary guidelines to select low salt foods (sodium less than 120mg/100g)?

Among the breakfast cereals with cartoon characters in a local supermarket I found only one brand under 120mg of sodium per 100g, while other brands had up to 6 times more than the recommended level of sodium. Biscuits had up to 4 times more, some snack bars had over 3 times.

The sodium in some frozen foods went up to 773mg/100g, and a brand of potato crisps labelled 'Kidz Pick' contained sodium 1204 mg/100g—over 10 times the recommended limit.

Clearly food labels should pass on this message to the general public. The labels should give a marketing advantage to foods with an acceptable salt level, and they should give shoppers a disincentive to buy high salt foods. The best by far would be the UK Traffic light food labels.

### ***Editorial footnote added since the ABC 7.30 Report [page 1]***

An article on peanut butter in 'Choice' pointed out correctly that children brought up on unsalted peanut butter don't acquire the taste for salted peanut butter [4]. The palate adapts readily to any change in salt intake—up or down. You can educate the palate within four weeks in either direction [5,6].

So if you are a young parent managing a salt-related health problem by controlling your salt intake, think of the children who share some of your genes. Should their palates remain adapted to the high salt intake that gave you a health problem?

Do you intend to:

- serve meals at two levels of salt intake—healthy (yours) and unhealthy (theirs)?
- or will you help them to prevent health problems by sharing your healthier food?

References on page 4

# Brief medical notes on salt and iodine

After millennia of evolution on a natural (unsalted) diet, modern humans invented the technology for bulk manufacture of sodium chloride about 5000 years ago.

Salt manufacture is more recent than agriculture. A pocket calculator will confirm that it requires an annual production of over half a million metric tonnes of salt to give the American population of 300 million even as much as one level teaspoonful (5 grams) a day.

Production on that scale had to wait for the industrial revolution, and we have had only about 10 generations for genetic adaptation to the very artificial electrolyte balance of the modern industrial diet, which gives the whole population between 10 and 30 times more sodium and chloride than they need for perfect health.

Many common salted foods such as corned beef, ham, bacon, olives, processed cheeses and salad dressings, are up to two or three times more salty than seawater (which has a sodium content of a little over 1000 mg/100g). Only very high salt concentrations are lethal to all the food-spoilage bacteria, and—in their natural (unsalted) state—most foods taste too bland to a salt-blunted palate unless salt is added as a condiment.

## 'Salt-free' societies

About 20 tribal societies have lived in geographically isolated habitats right up to the 20th century without ever discovering the technology for salt manufacture [7].

Natural (unsalted) foods give the 'salt-free' societies all the sodium and chloride they need, with enough of all the other chemical elements essential for life.

Their infants thrive—as ours do—on natural (unsalted) breast milk with a sodium content of 14 mg/100g.

Even the industrial societies wean their infants without added salt, and most countries have made it illegal to add salt to baby foods sold for infants under 12 months of age.

## Behaviour of wildlife

Cattle and wildlife that trek vast distances in search of a salt lick are often cited as evidence that 'animals love salt' and 'obviously need it'. Their problem is simply that

the sodium content of grass in some inland habitats is below 1 mg/100g.

Note that mice however can multiply in plague numbers during the Australian wheat harvest, with disastrous population explosions of staggering size based exclusively on a diet of wheat grains with a sodium content of 3 mg/100g.

No 'salt-free' human society has ever been known to travel in search of salt. The Yanomama (syn. Yanomamo, Yanomamö)—the tribe with the lowest sodium excretion rate ever recorded in any human culture—detest salt when they first taste it [8]. Neither they nor any other 'salt-free' society is ever offered salt as a public health measure, as there is no evidence that they need it.

## Pregnancy and breastfeeding

A special medical expedition to the Yanomama made a thorough investigation of pregnancy and breastfeeding at the lowest sodium excretion rate ever recorded in humans, and found them perfectly normal [9].

## Salt and blood pressure

Three 'salt-free' societies (Yanomama, Xingu and Asaro) joined the Intersalt Study. The average (mean) adult blood pressure of each group was 96/61, 99/62 and 108/63 respectively [10].

Chimpanzees that eat nothing but unsalted fresh fruit and vegetables have similar very low blood pressures but get hypertension within two years when salt is added in 'normal' amounts [11].

A Papua-New Guinea 'salt-free' society (the Kalugaluvi) had a rise of blood pressure within 10 days when salt was added to their diet of vegetables and cereals in 'normal' amounts [12]. For ethical reasons the trial had to stop at the first confirmation of a rise of blood pressure.

## The strange contrast with iodine

The foods available in every known human habitat provide enough salt—as a natural ingredient—for perfect health, yet an estimated population of over a billion people worldwide is at risk of iodine deficiency unless they take an artificial supplement.

Every alternative to iodised salt is safer, and for that reason salt is likely to be superseded eventually as a vehicle for iodine.

# Salt or sodium?

## SALT SKIP NEWS

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Salt Skip News will  
continue to be distributed  
in hard copy in The BP  
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SALT matters. In a world that cheerfully eats foods that are even saltier than seawater, there is a worldwide scientific consensus that:

- the salt intake of industrial societies is excessive
- the excess salt confers no health benefits
- it causes or aggravates over a dozen health problems

SODIUM. The Australian Dietary Guidelines tell everybody to choose foods low in salt, and the food regulations define low salt foods by their **sodium** content. Although nobody has ever seen, touched or tasted sodium, they do have to check the **sodium** content when they read food labels.

### TECHNICAL COMMENTS

Chloride ions are also harmful in excess, and there is no question that the epidemic health problems are due to the abuse of **common salt** as a food additive.

Although sodium chloride is only one of 43 sodium compounds permitted as food additives in Australia, about 90% of all the sodium added to foods is sodium chloride.

The chloride has far more effect on blood pressure, and is more important even in oedema and the other salt-related health problems, as it takes longer to excrete than the alkaline sodium compounds.

Physiologically normal urine is alkaline, and chlorides are partly responsible for the prevalence of acid urine and its health consequences.

### THE SALTMATTERS RESIDENT CHEF

Liane Colwell's academic commitments have prevented her from joining us until the next issue (No 147, June 2007).

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