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# Salt Skip News

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The **business address** of the Salt Skip Program is Queensland Hypertension Association  
PO Box 193, Holland Park, QLD 4121, phone (07) 3899 1659, FAX (07) 3394 7815.

Use the **editorial address** when writing about the newsletter—see the panel on page 4.

## Salt in Processed Food in Australia

by Dr Malcolm Riley, Ferny Creek, Victoria

A systematic collection of the sodium content of 7221 Australian processed foods was carried out between July and December 2008 and recently published in the American Journal of Clinical Nutrition [1].

This work, carried out by Jackie Webster, Elizabeth Dunford and Bruce Neal of the George Institute for International Health in Sydney, provides a baseline against which efforts to reduce sodium in processed foods can be assessed. It has long been recognised that processed foods are major contributors to population dietary salt intake. National salt reduction programs can generate awareness in citizens to seek and select lower salt foods (requiring suitable low salt foods to be available), or more generally decrease the amount of salt reaching people in processed foods (whether they are aware or not - making healthier choices easier choices). Both strategies are compatible with each other, and public health practitioners and processed food manufacturers can work in collaboration towards a food supply containing less salt. To see the progress of such a program, the 'starting point' needs to be described across the processed food supply – not only one food category, or the products of one company. This is the importance of the recent paper.

### **What was found?**

It will come as no surprise that the processed food supply is complicated. The George Institute researchers categorised food into 10 groups, 33 food categories and 90 major subcategories.

The sodium content within most categories varied considerably – for most categories, the highest sodium product had a sodium concentration at least one half greater than that of the product with the lowest sodium. For example, sliced meats varied from 120 to 1720 mg sodium/ 100g food (a 14-fold difference) and frozen potato products varied from 5 to 500mg sodium/100g (a hundred-fold difference). The high variation within food categories suggests that setting a category specific sodium target is a sensible

strategy to lower salt in the processed food supply overall.

The food categories with the highest sodium concentration on average was sauces and spreads (1283mg/100g), followed by meat and meat products (846mg/100g). Subcategories with a mean sodium concentration of more than 1000mg/100g were sausages and hot dogs, sliced meat, salami, processed cheese, anchovies, salt and vinegar crisps, extruded snacks, and numerous sauces.

### **Reference:**

1. Webster JL, Dunford EK, Neal BC. A systematic survey of the sodium contents of processed foods. American Journal of Clinical Nutrition 2010;91:413-20.

# Traffic lights could STOP hypertension

By guest author Dr Trevor C Beard, Menzies Research Institute, Hobart

Before our ancestors invented agriculture and animal husbandry—about 10 thousand years ago—they could eat whatever they liked and get little if any rise of blood pressure with age.

Even today we have “stone age” tribal societies that live by hunting and gathering and reach old age with the blood pressure of a fit teenager (100/60). The Salt Institute (representing the US salt producers) would like you to think this is a complete mystery.

It is no mystery. There is a massive international scientific consensus that “stone age” tribal societies **simply eat healthier food and get more exercise**. It took us a century to reach that consensus, but it now puts the edible salt industry on the same road as the tobacco industry.

## ***The truth prevails in the end***

In 1896 we found a way to measure blood pressure and recognise hypertension.

In 1904 two French doctors found that the blood pressure went down in six patients with high blood pressure soon after they started eating food without any added salt.

You might have thought the cat was out of the bag, because their blood pressure went up again if the salty hospital soup was added to their diet [1].

But then—as now—you have to excuse doctors for being sceptical. Then—as now—the journals and the media report something this year and contradict it next year.

But in the 1920s a low salt diet became a recognised treatment in the United States. It was not a “cure”—you had to continue the “treatment”—and it didn’t work for every case of hypertension, no matter how strict the diet was, so salt was not yet regarded as a cause of hypertension [2].

In the 1940s a rice and apricot diet would even reverse many cases of *malignant* hypertension (a sky-rocketing form of hypertension that is usually fatal within two years if not treated) [3].

At first the apricots were thought to be beneficial, but the diet was useless if salt was added [4].

Giving humans hypertension would be unethical, so it is convenient that we can measure a rat’s blood pressure with a small cuff around its tail.

Rats develop hypertension if salt is added to their food, moreover it is just like human hypertension—fully reversible in some rats when they avoid salt again, partly reversible in others and completely irreversible in the unluckiest of the rats [5].

After getting a dose high enough to raise their blood pressure, the unluckiest rats are stuck with hypertension no matter how long they stay off salt later, meanwhile every rat in the control group that receives no salt keeps a normal blood pressure [5].

The rise of BP is an adaptation to salt that may be permanent—there is no law that promises recovery if the cause is removed (quitting smoking doesn’t cure lung cancer).

## ***Contributory causes of hypertension***

Most diseases have one necessary cause and several contributory causes. For example the contributory causes of tuberculosis include poverty, overcrowding and malnutrition. But none of those can cause TB in the absence of the tubercle bacillus—the tubercle bacillus is the one *necessary* cause.

Salt looks like the necessary cause of hypertension. For instance:

- overweight and obesity can raise your blood pressure, but thin people also get hypertension;
- over-indulgence in alcohol can raise your blood pressure, but many teetotalers have hypertension;
- lack of exercise can raise your blood pressure, but athletes get hypertension;
- plenty of fruit and vegetables in the diet will lower your blood pressure for various reasons, including the potassium content;
- but chimpanzees living on *nothing else but fruit and vegetables* get hypertension if salt is added [6]—and only if salt is added.

If salt turns out to be **the one necessary cause**—as seems likely—this will explain why the modern epidemic of high blood pressure is confined exclusively to those cultures that see fit to add salt to their food.

### **The two landmark DASH studies**

DASH stands for *Dietary Approaches to Stop Hypertension*. They broke new ground by supplying the food—virtually abolishing the bugbear of unreliable dietary compliance.

The first DASH study found a diet low in fat and sugar and high in fruit and vegetables had a striking effect on blood pressure. The second tested the DASH diet at three levels of salt intake, and found the lowest (sodium 65 mmol/day, or 4 g of salt) would **PREVENT** hypertension (by reversing prehypertension).

### **A visit to the Stone Age**

The picture below was first published in Salt Skip News No 140 (April 2006).

It was taken during a medical expedition from the Australian National University to verify the absence of cardiovascular disease in the Tukisenta tribe in the Highlands of Papua-New Guinea. The study confirmed that hypertension and heart disease were both virtually absent [7].

Before leaving Papua-New Guinea they met three Tukisenta tribesmen (pictured below) who had got jobs in Port Moresby about two years earlier:



Tribal cultures with healthier food are a window on our past—yet alive today—and we can visit them and measure their BP and 24-hour urinary sodium excretion.

These three men had prehypertension—BP above the upper limit of normal (120/80) [8]. Fatty, sugary and salty foods on sale in Port Moresby were putting them at high risk of developing hypertension. We don't know the statistical risk in Port Moresby, but those who survive to middle age on the usual food in Massachusetts have a 90%—nine out of 10—risk of hypertension before they die [9].

These three men could virtually abolish the risk of hypertension in one of two ways:

- return to the Highlands and the Tukisenta diet (fresh food with no added fat, sugar or salt);
- stay in Port Moresby and control their blood pressure again by selecting only fresh foods and processed foods and restaurant meals *low in fat, saturated fat, sugar and salt*.

The first option would be easy. So would the

second if the traffic light food labels now on voluntary trial in the UK reached supermarkets and restaurants in Papua-New Guinea.

### **Will Australia have that luck?**

If the Australian government adopts traffic light food labels in 2011, the processed foods in supermarkets and menus in collaborating restaurants can supply a very close approximation to the DASH Eating Plan.

In **supermarkets** and groceries we can just choose foods with *four green traffic lights*—for fat, saturated fat, sugar and salt.

We need **restaurants** supplying foods that will neither raise anybody's blood pressure nor counteract the drugs that 30% of their customers take for hypertension. 3.7 million Australians (30% of the adult population) have hypertension [10].

### **The Drysdale House Cuisine**

The Drysdale House School of Hospitality in Hobart reconciles gastronomy with health at monthly lunches that would get four green traffic lights in the UK (for fat, saturated fat, sugar and salt), as explained in our last issue.

The lunches on 22 April and 20 May were a spectacular success. Book for 15 July (email [trevor.beard@utas.edu.au](mailto:trevor.beard@utas.edu.au)) and judge for yourself, or read more in our next issue.

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# Around the World

## SALT SKIP NEWS No 165

June 2010

Page 4 of 4

Salt Skip Program  
editorial address:  
Malcolm Riley  
17 One Tree Hill Rd

PHONE:  
61-3-9694-3856

FAX:  
61-3-9694-3701

email Salt Skip Program  
mriley@dairyaustralia.com.au

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[www.saltmatters.org](http://www.saltmatters.org)

Salt Skip News will  
continue to be distributed  
in hard copy in The BP  
Monitor (QHA newsletter)

### Sweden

Young men in Sweden have an average salt intake of about 11.5g a day according to a recent survey [1]. The study measured urinary sodium excretion over 24 hours of 86 young men aged 18 to 20 years living in Gothenburg. The average salt intake among those in the lowest quartile (i.e. the bottom 25%) of sodium excretion was estimated to be 5.8g/day. The recommended Upper Limit for salt intake for the general adult population is 6g/day, with a little over 4g/day set as a suggested dietary target [2].

### United States of America

One way to raise the profile of any cause is to have a well-known person promote the cause. And in the US they don't come any better known than the wife of the President, First Lady Michelle Obama. The First Lady takes a keen interest in healthy food – upon moving into the White House, she planted a kitchen garden on the White House Lawn – the first domestic food production here since the Roosevelt era 'Victory Garden' planted as part of the war effort. She is also part of a national program to combat childhood obesity. Part of the 'Let's Move!' campaign uses the expertise of local chefs to promote healthy eating, and the First Lady states: "We are going to need everyone's time and talent to solve the childhood obesity epidemic and our Nation's chefs have tremendous power as leaders on this issue ...".

In other news, a dietary study was undertaken to lower dietary sodium among hypertensive adults over 65 years of age in Pittsburgh [3]. The only intervention was dietary counselling and only an 11% reduction was seen after 12 months – participants still had a mean salt intake of about 7.5g/day. The authors comment that reaching dietary targets in free-living older adults is not feasible because of the large amount of salt added during the manufacturing process of food. In the US between 1994 and 2004 the average sodium content in foods increased by 6% (despite efforts to reduce sodium in the food supply).

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### It does not need to be one or the other.

People who are aware of the health benefit of low dietary salt intake and who seek to achieve it, deserve to benefit from their prudent action – they should be easily able to find suitable food wherever they are that meets their needs, and at a reasonable price. Food companies partially address the needs of this group by providing 'low salt alternatives', and could go further by providing prominent traffic light labelling.

But the overall salt concentration of the processed food supply also needs to be substantially lowered – because processed food provides such a high proportion of dietary intake and because its general high salt content constitutes such a pervasive health risk. As a society, we generally expect that people deserve a level of protection from harm whether they are aware of the danger or not.

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**Salt Skip Editorial Committee:** Prof Michael Stowasser (Director, Hypertension Unit, University of Qld School of Medicine, Princess Alexandra Hospital, Brisbane), Sister Dianne Robson (Hypertension Nurse, Hypertension Unit, Greenslopes Private Hospital, Brisbane), Prof Caryl Nowson (Nutrition & Ageing, Deakin University, Melbourne), Clare Rawcliffe (Cardiology Dietitian, St Vincent's Hospital, Sydney), Jane Brown (Home Economist, Salt Skip Program, Hobart), Dr Jennifer Keogh (Dietitian, Australian Institute of Weight Control, Adelaide) and Dr Trevor Beard (Honorary Research Fellow, Menzies Research Institute, Hobart). Text drafted (edited where other authors are named) by Dr Malcolm Riley, Regulatory and Policy Manager, Dairy Australia. Printed by Snap Printing, Edward Street, Brisbane.