

# The State of Salt: The case for salt reduction in Victoria

## Supporting evidence document

This document presents the evidence used as the rationale for the key messages and statistics in the publication *The State of Salt: the case for salt reduction in Victoria*.<sup>1</sup>

### What is salt and why does it matter for health?

Salt is made up of sodium and chloride and people are eating too much sodium in the form of salt, which is bad for health.

Too much sodium increases the risk of high blood pressure, which is a leading cause of death and disability in Victoria (Lim, SS et al. 2012).

- According to the Global Burden of Disease study, 57.74 per cent of all stroke deaths, 45.73 per cent of all heart disease deaths, and 48.46 per cent of chronic kidney disease deaths in Australia in 2010 were attributable to high blood pressure (IHME 2013).
- High blood pressure accounts for 60 per cent of all strokes and 50 per cent of all heart disease (IHME 2013).
- High salt intake is also linked to heart failure, stomach cancer and osteoporosis (Better Health Channel 2014).

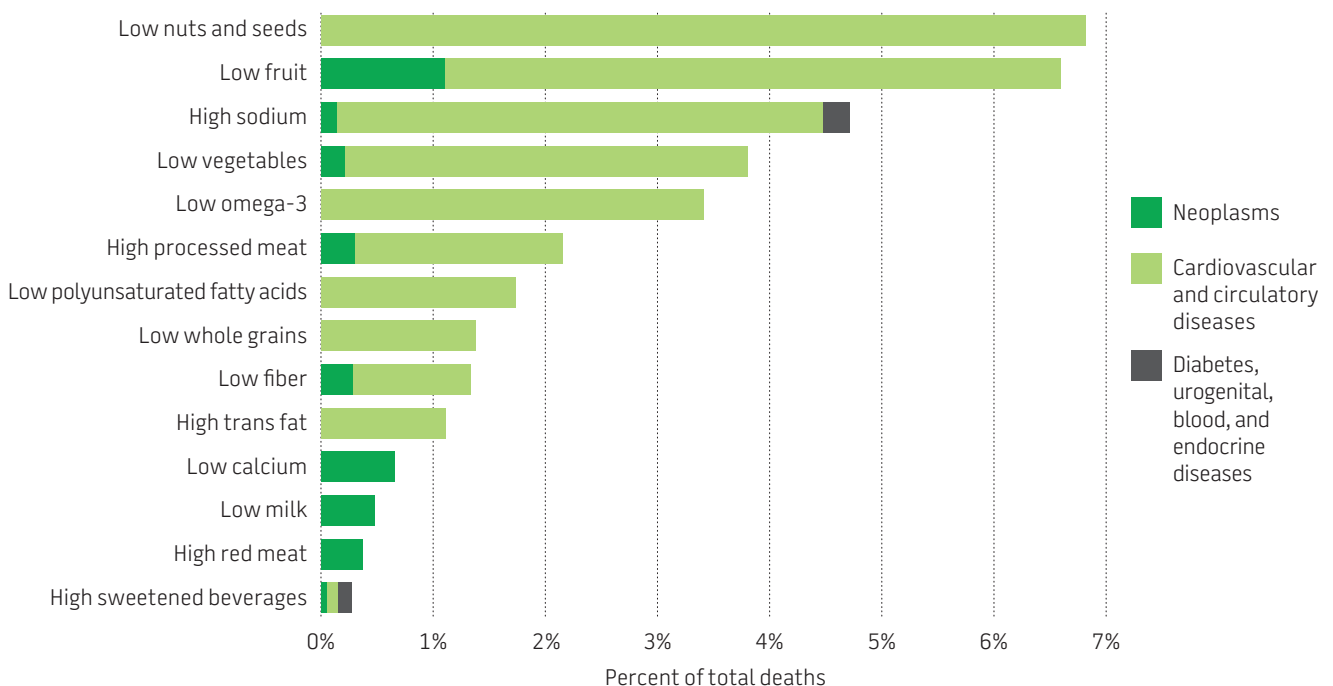
Almost one in 20 deaths in 2010 in Victoria were attributable to high salt intake, which is equivalent to six times the annual road toll in Victoria.

#### Contents:

- What is salt and why does it matter for health?
- Where does the salt we eat come from?
- The story in Victoria
- What can be achieved?

- According to the Global Burden of Disease Study, 4.72 per cent of deaths in Australia in 2010 were attributable to a diet high in sodium (IHME 2013). See Figure 1.
- Using the assumption that the Victorian population demographics and health behaviours/risks/outcomes is comparative to Australia, this statistic of 4.72% has been applied to the total number of deaths in Victoria in 2010, which was 35,764 (State Government of Victoria 2014). This equates to 1688 Victorian deaths in 2010 attributable to high sodium. The Victorian road toll in 2010 was 288 (BITRE 2014) so deaths attributable to high salt intake was comparative to 5.86 times the Victorian road toll.
- One in four Victorians (25.1 per cent) have high blood pressure, according to the Victorian Health Monitor 2013 (Department of Health 2013).

Figure 1: Dietary risk factor attribution to Australian deaths, 2010



<sup>1</sup> [www.vichealth.vic.gov.au/state-of-salt](http://www.vichealth.vic.gov.au/state-of-salt)

## Where does the salt we eat come from?

Around 75 per cent of salt in the Australian diet comes from processed foods (Better Health Channel 2014) such as pizza, processed meats, takeaway foods and salty snacks. A surprisingly large amount comes from everyday foods such as breads, cereal-based dishes and pasta sauces.

Salt is also added to food during cooking or meals through stock, sauces and table salt. See Table 1.

For the full list of dietary sources of sodium and associated proportions visit the [ABS website](#).<sup>2</sup>

**Table 1: Proportion of sodium (%) from food groups (ABS 2014)**

Food groups	Food sub-group	% contribution to overall dietary salt (sodium) intake for all persons		
		Age		All persons
		2–18 years	19 years and over	
Cereal and cereal products		20.3	17.6	18.2
	Regular breads and bread rolls	13.3	12.6	12.7
	Breakfast cereals (ready to eat)	2.7	2.0	2.1
Cereal-based products and dishes		29.3	23.5	24.8
	Mixed dishes with cereal as major ingredient, e.g. pizza, burger, savoury pasta/noodle dishes	17.1	14.0	14.6
	Pastries	3.7	4.0	4.0
Cheese		4.6	3.7	3.9
Meat, poultry and game products and dishes		17.1	18.7	18.3
	Processed meats	5.5	6.2	6.0
	Sausages, frankfurts and saveloys	3.8	3.1	3.3
Soup		2.5	5.0	4.5
Sauces, dips and condiments		4.0	6.4	5.9
	Gravies and savoury sauces	3.1	4.7	4.4
Snack foods		3.6	1.4	1.9
	Potato snacks	1.7	0.8	1.0
Vegetable products and dishes		3.2	4.7	4.5

<sup>2</sup> [www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007-2011-12-Main%20Features-Sodium-715](http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007-2011-12-Main%20Features-Sodium-715)

**Table 2: Calculations for Victorian annual intake of salt, and amount of annual salt reduced with a 3 gram reduction in average Victorian intakes**

Age group	Population in 2013	Average daily salt intake (g)	Victorian salt intake (g/day)	Victorian salt intake (g/year)	Victorian intake with 3g reduction in daily intake
> 15 years	4,688,136	8	37,505,088	13,689,357,120	5,133,508,920
5–14 years	682,274	6	4,093,644	1,494,180,060	747,090,030
Total			<b>41,598,732</b>	<b>15,183,537,180</b>	5,880,598,950
				<b>&gt; 15,000 tonnes per year</b>	5,880 tonnes per year

## The story in Victoria

Victorians eat almost twice the amount of salt that is recommended, with an intake of 8 grams on average per day; a combined total of more than 15,000 tonnes of salt every year.

- This is based on the World Health Organization’s recommendation for daily adult salt intake to not exceed 5 grams (WHO 2012), and average daily intakes for adults of 8 grams (Jeffery, P et al. 2012; Department of Health 2012); 9.5 grams for men; 6.9 grams for women (Jeffery, P et al. 2012). See Appendix A for more information on estimating salt intakes accurately.
- The total amount of salt consumed in Victoria is based on 2013 Victorian population figures (ABS 2014) and the average salt intakes referenced in this section. See Table 2.

Generally children need less salt than adults yet they are eating high amounts. Too much salt in childhood can lead to a lifetime of health risks.

- This is based on average daily intakes for children aged 5–13 years of six grams (Grimes, CA et al. 2013). See Appendix A.
- High salt intakes in childhood establishes food habits which bring cumulative health risks over their lifetimes. See Appendix B for more information on high salt intakes in childhood.

## What can be achieved?

If Victorians reduce their salt intake by 3 grams per day through salt reduction strategies, the following can be achieved:

- Almost **6000 tonnes less salt eaten** by Victorians each year.
  - See Table 2.
- Approximately **800 lives saved each year** from stroke and heart disease, and at least as many serious events that cause disability prevented.
  - Reducing salt by 3 grams per day in Victoria would prevent approximately 787 deaths each year from stroke and heart disease (He, FJ, MacGregor, GA 2003; Nichols, M 2014). See Appendix C.\*

- **30 per cent reduction in salt intake** – Australia has committed to this reduction by 2025 as part of the World Health Organization’s global targets to prevent and control non-communicable diseases.
  - A 3-gram reduction in intakes would represent a 37.5 per cent reduction in average adult intakes and a 31 per cent reduction for average male intakes.
- **Cost savings** – research shows that salt reduction strategies are cost-effective interventions (Cobiac, LJ, Vos, T, Veerman, JL 2010).
- **\$50 million per year potential savings** in Victoria in health care costs alone.
  - Modelling conducted by the George Institute for Global Health predicts that if a 3 gram per day reduction in average daily salt intake was achieved in the state of Victoria, the potential saving would be \$47.4 million per year in health care costs alone. There are also indirect savings associated with economic productivity and reduced disability. See Appendix C.\*

### **Salt reduction strategies are up to 200 times more cost-effective than treatment with hypertension medication.**

- It is estimated that salt reduction strategies at a population level are about five times more cost-effective than clinical approaches, and up to 200 times more cost-effective than treatment with drug therapies (Neal, B 2007).

### **It can be done.**

- The success of the UK salt reduction program that commenced in 2013 is recognised worldwide and shows that significant population health gains can be achieved through reduced salt levels in foods, improved food labelling and consumer awareness campaigns (Webster, J, Trieu, K 2014).

### **To achieve our goal, more and faster action is needed.**

- Reformulation of foods to decrease salt levels has been occurring through the Food and Health Dialogue, but many foods continue to have high salt content (Trevena, H et al. 2014) and overall intakes are still too high.

\* [www.vichealth.vic.gov.au/state-of-salt](http://www.vichealth.vic.gov.au/state-of-salt)

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### Appendix A: Measuring salt intake

The most objective indicator of dietary salt intake is the measurement and analysis of 24 hour urinary sodium, as approximately 95 per cent of dietary salt consumed is excreted in the urine (Bates, CJ et al. 1997). This methodology is endorsed by the World Health Organization.

Salt intake estimates used in the State of Salt publication are based on a 24-hour urinary analysis on 605 Victorian adults in 2011-12 (Jeffery, P et al. 2012), and 260 Victorian school children aged 5-13 years old in 2010-11 (Grimes, CA et al. 2013).

Salt intake estimates derived from self-reported food intake surveys, such as the Australian Health Survey, tend to underestimate levels consumed. For example, average intake levels for Victorian adults based on the 24-hour urine analysis in 2011-12 are approximately 30 per cent higher than those calculated for Australian adults from the Australian Health Survey 2011-12 data.

For further information regarding self-reported sodium intakes by gender and age, please refer to the 'Australian Health Survey: Nutrition First Results – Foods and Nutrients, 2011-12', available at:

[www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007-2011-12-Main%20Features-Sodium-715](http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007-2011-12-Main%20Features-Sodium-715)

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#### Appendix B: Impact of high salt intakes

A high salt intake during childhood increases the risk of the early development of cardiovascular risk factors such as raised blood pressure (He, FJ, MacGregor, GA 2006; He, FJ, et al. 2008a) and potential obesity, as a high salt intake stimulates thirst (Karppanen, H, Mervaala, E 2006) and have been associated with the consumption of high energy sugar-sweetened beverages (He, FJ, et al. 2008b; Grimes, CA et al. 2011; Libuda, L et al. 2012).

Furthermore, as a preference for salted foods is likely to develop early in life (Coward, BJ, Beauchamp, GK 1986; Stein, LJ et al. 2012; Sullivan, SA, Birch, LL 1990), exposure to highly salted foods during childhood may program children to a lifelong appetite for saltier foods.

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