

COMPARING SALT AND POTASSIUM INTAKE BETWEEN VICTORIAN FARM FAMILIES AND CAPITAL CITY RESIDENTS

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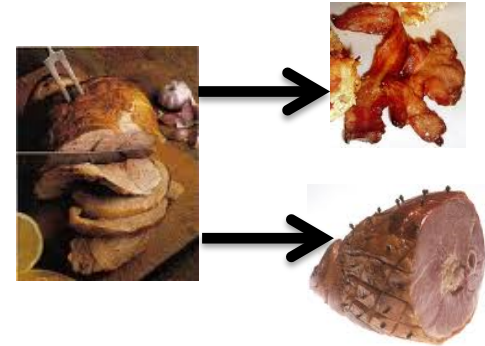


Excess salt consumption can cause or increase the risk of:

- ☐ Stroke
- ☐ Heart failure / enlargement
- ☐ High blood pressure
- ☐ Kidney disease
- ☐ Osteoporosis
- ☐ Stomach cancer

Food processing and sodium

bacon	25 times	2g sodium
lean ham	20 times	1.6g sodium
lean pork		0.08g sodium



Salt intake recommendations



- WHO, < 5 grams / day
- AWASH, < 6 grams / day
- NHF, < 6 grams / day

< 4 grams / day

(high BP or existing heart disease)

- NH&MRC, < 6 grams / day

< 4 grams / day

(chronic disease prevention)

- Healthy hunter-gatherers, 1 – 2 grams / day

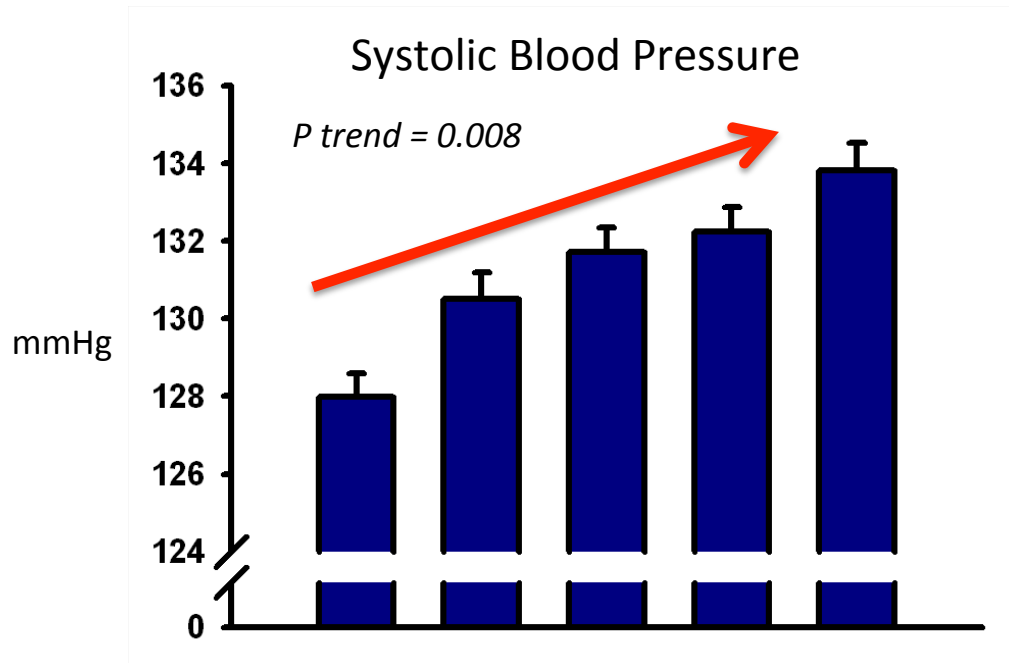
WHO – World Health Organisation; AWASH – Australian Division of World Action on Salt and Health; NHF – National Heart Foundation; NH&MRC – National Health and Medical Research Council

Potassium rich foods



- Important for heart health
- Mostly found in fruits, vegetables and beans/legumes
- Also nuts, seafood, lean meat, milk and yoghurt are good sources
- Processed foods ↓ potassium and ↑ salt

Sodium to Potassium ratio



Prevalence of hypertension was double in highest quintile of sodium to potassium ratio relative to lowest quintile

WHO:
Sodium/Potassium ratio close to 1



Huggins CE, O'Reilly S, Brinkman M, Hodge A, Giles GG, English DR, Nowson CA. Relationship of urinary sodium and sodium-to-potassium ratio to blood pressure in older adults in Australia. *Med J Aust.* 2011 Aug 1;195(3):128-32.

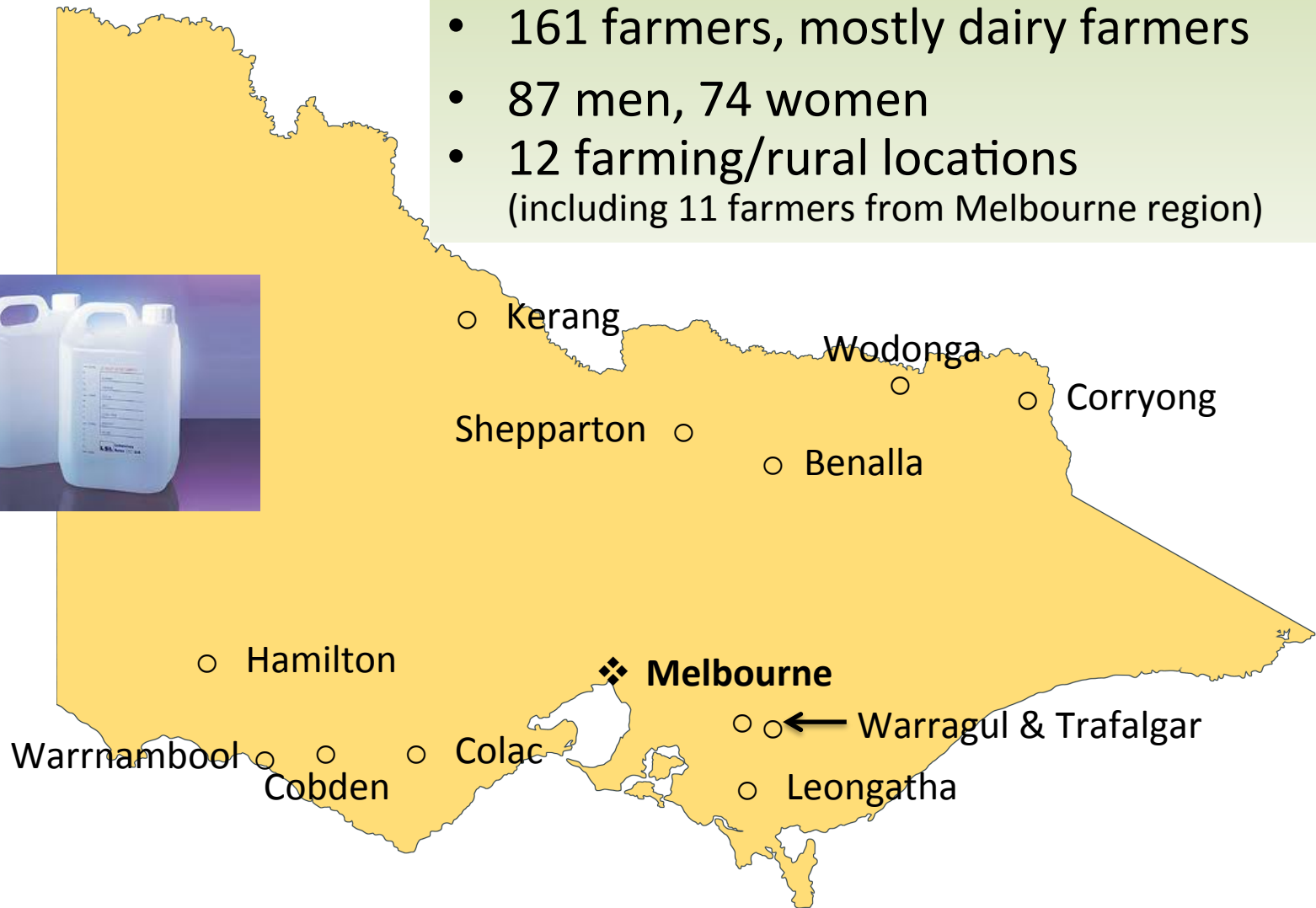
- We know how much salt people consume in cities
- How much consumed by farmers?



- 24 hour urine collections (“gold standard”)



- All members of the Sustainable Farm Families program
- 161 farmers, mostly dairy farmers
- 87 men, 74 women
- 12 farming/rural locations
(including 11 farmers from Melbourne region)





Farmers



Recruitment advertised
through Sustainable Farm
Families program

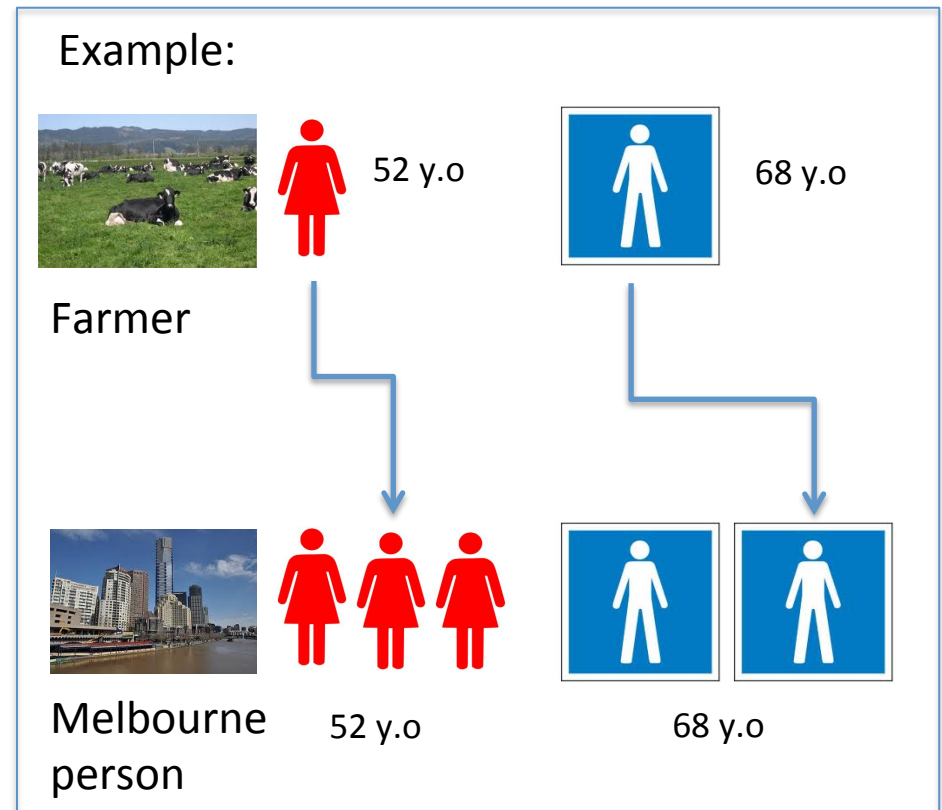


161 farmers provided 24 hour
urine samples



Urine samples collected between
2009 and 2011

- **Pair match** the farmers and Melbourne residents **by age and gender**
- Firstly, choose a farmer
- Then randomly match them with a Melbourne resident of the same gender and same age
- If we cannot match them with someone the same age then choose someone of the next closest age





Farmers

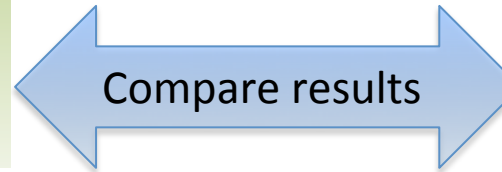
Age 56.6 (9.9)(S.D) yrs
Range 28 to 82 yrs



87



74



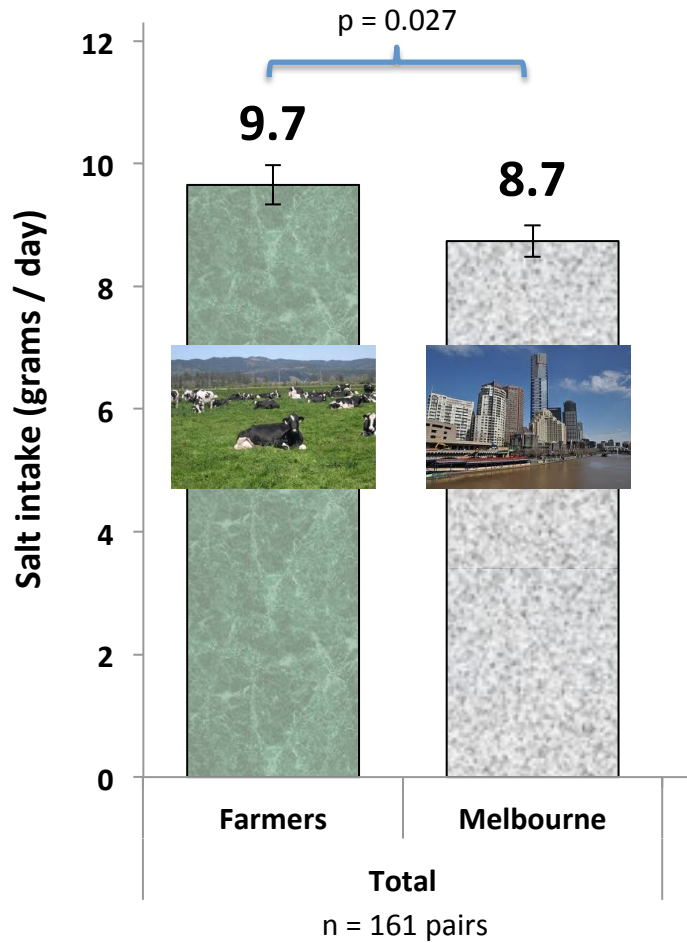
Melbourne residents

Age 56.5 (9.9)(S.D) yrs
Range 26 to 77 yrs

- 80% of participants the same age
- 1 matched pair of 6 years age difference, remainder 1-3 years age difference



Total salt intake

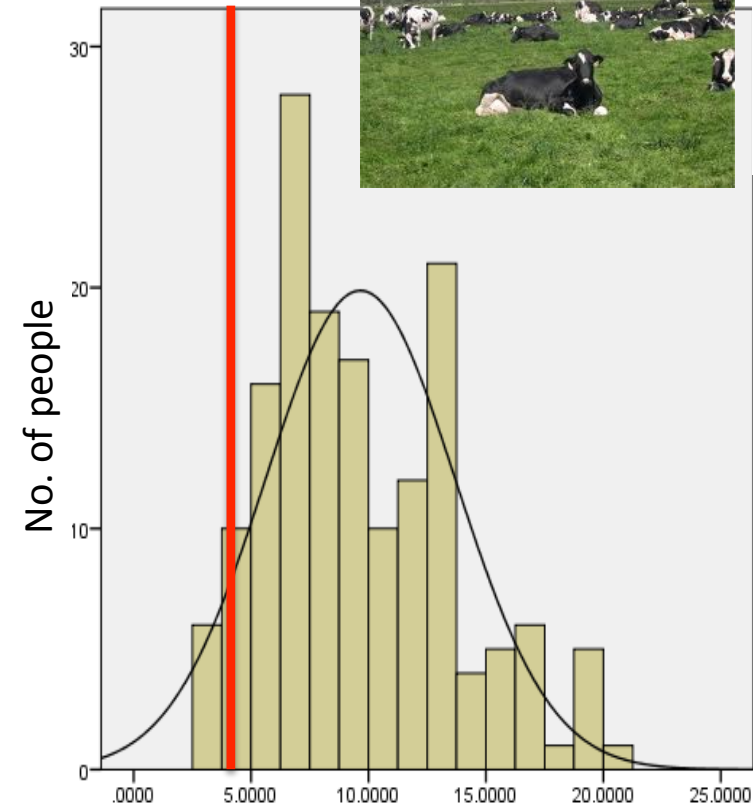


Note: Urinary Na excretion expressed as salt equivalents



Range of salt intake

Farmers

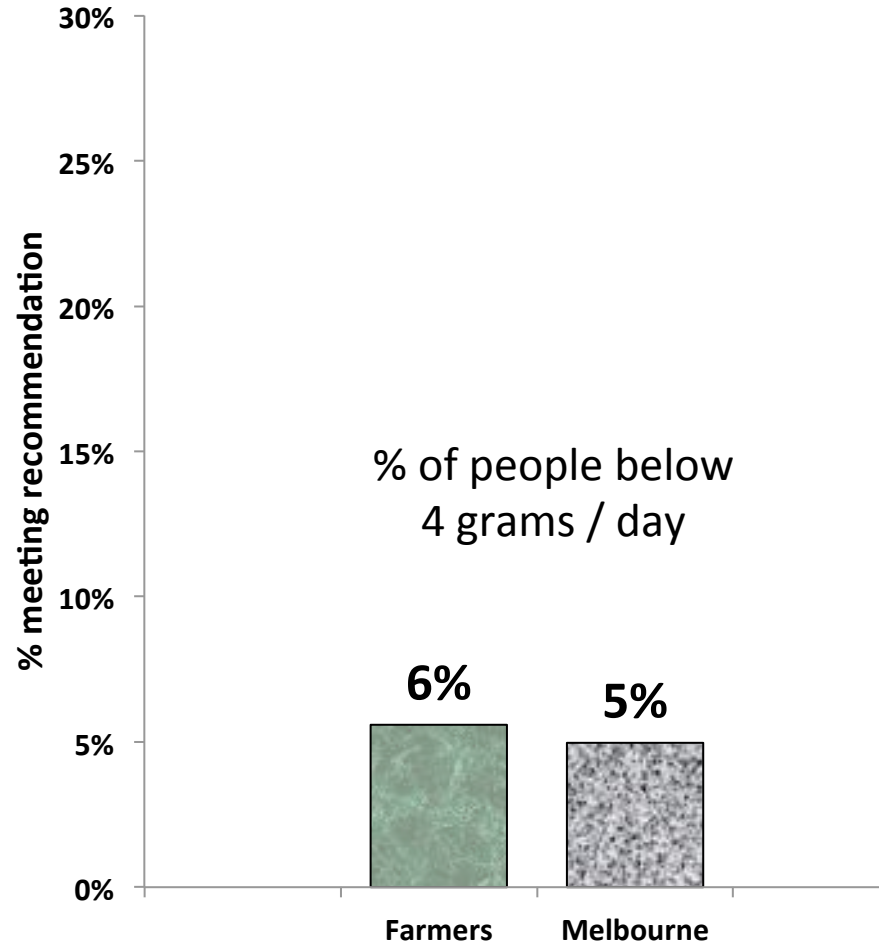


Min. 3 g/day

Max. 21 g/day

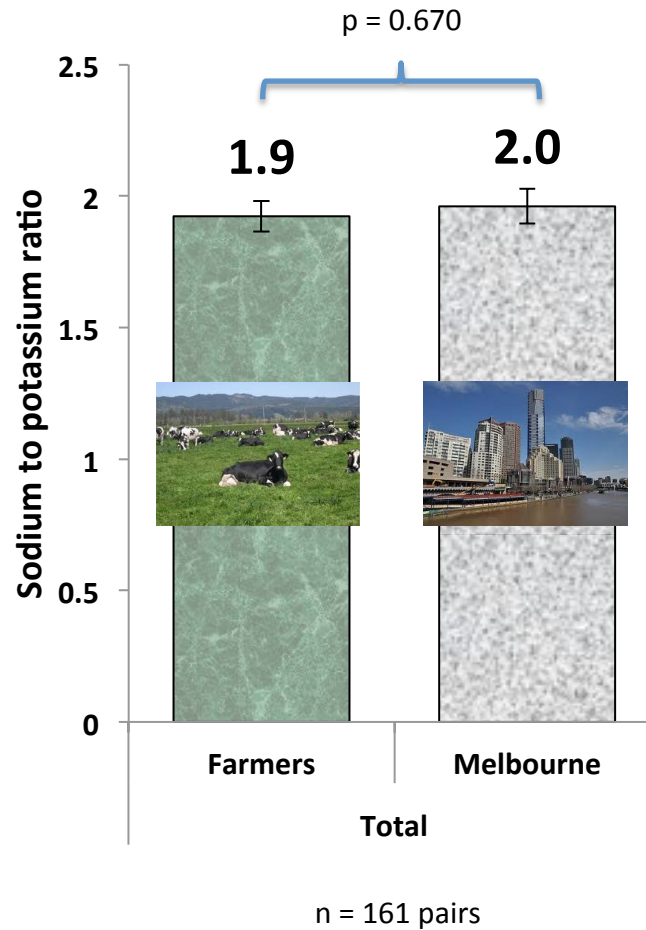


Number of people meeting salt recommendations





Sodium to potassium ratio



Note: Urinary Na excretion expressed as salt equivalents

Salt and potassium intake in Australia – 24 hour urine collections

Year/s of collection	No. of participants	% women	Age Mean (S.D)	Age range	Salt intake (g/day) Mean (S.D)	Sodium to pot ratio Mean (S.D)	Reference
1989	55	13%	Salt < 4 g / day		7.8 (2.6)	2.0 (0.7)	NH&MRC Salt Study Committee 1989
1989	53	21%	58 (11)	?	8.3 (2.6)	2.1 (0.7)	
1995	194	28%	?	18-70	8.3 (1.8)	1.8	Beard & Woodward et al. 1995
2000-2001	108	59%	47 (39)	33-74	8.1 (3.2)	1.8	Nowson & Morgan et al. 2003
2003-2004	29	31%	57 (7)	?	9.8 (2.1)	2.1	Hodgson & Burke et al. 2006
2002-2005	144	45%	55	?	8.6	1.9	Margerison & Nowson et al. 2006
2007-2008	783	52%	64 (6)	50-75	9.1 (3.7)	2.0 (0.8)	Huggins & O'Reilly et al. 2011
2009-2011	161	46%	57 (10)	28-82	9.7 (4.0)	1.9 (0.8)	Jeffery & Brumby et al. 2012
2011	297	54%	58 (15)	20-88	10.1 (3.7)	?	Land & Webster et al. 2011
2011-2012	546	55%	56 (12)	21-78	8.1 (3.4)	1.9 (0.8)	Jeffery & Nowson et al. 2012

Country	Salt intake of farmer / rural	Potassium intake of farmer / rural	Farmers or rural	24 hr urine or diet survey	Notes	Reference
Australia	↑ 11%	↑ 12%	Farmers	24 hr	Victorian farmers compared to Melbourne residents.	Jeffery 2012
China	↑ 6%	↓ 6%	Farmers	Diet survey	<i>Farmers had a higher salt intake than other professions.</i>	Tian 1996



KEY FINDINGS FOR VICTORIAN FARMERS

- Salt intake ↑



- Potassium intake ↑



- Sodium / potassium ratio, same



RESEARCH GAPS FOR FARMERS

- Primary dietary sources of sodium?
- Discretionary salt intake (salt added at the table and in cooking)?
- Energy intake?
- Knowledge (salt and health, food sources)?
- Health motivation?
- Tailored intervention strategies



PRACTICAL TIPS FOR FARMERS



- Awareness of higher risk for excessive salt intake

- Try to avoid added salt:



- Reduced salt options



270% more salt!

- Try to increase potassium:



PUBLIC HEALTH IMPLICATIONS



- At least 75% of our salt from processed food
- UK – sodium targets, 80 categories of food
- AWASH, www.awash.org.au

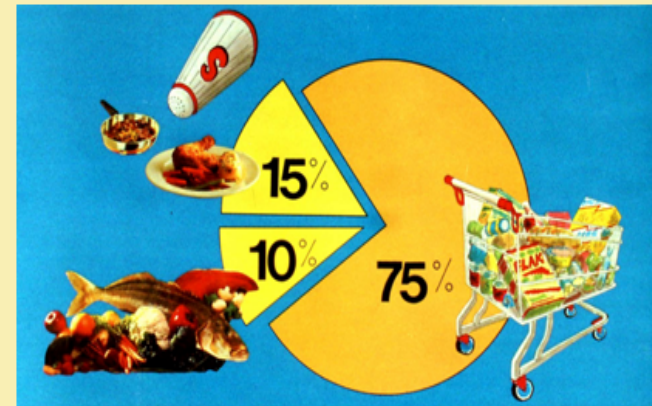


AWASH
Australian Waters Association
26th March – 1st April 2012
To learn more visit
www.awash.org.au

THE GEORGE INSTITUTE
for Global Health

School of Exercise and Nutrition Sciences

75% of your salt intake



is in the groceries you buy

Thank you:

- Professor Caryl Nowson
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- Hannah Simkin

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