Salt
Time for Action in Hong Kong

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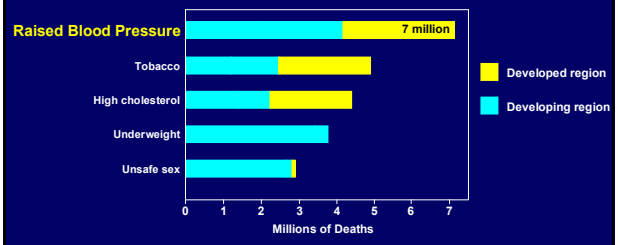
Major Underlying Factors causing Death - Worldwide

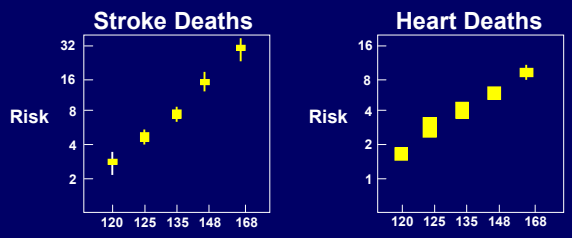


Raised BP is responsible for

- 62% of all Strokes
- 49% of all Heart Disease

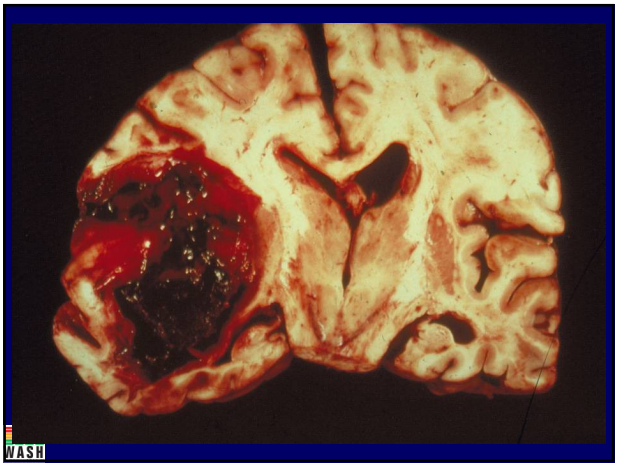
Ezzati et al. Lancet 2002;360:1347-60.

Systolic BP and Risk of Death

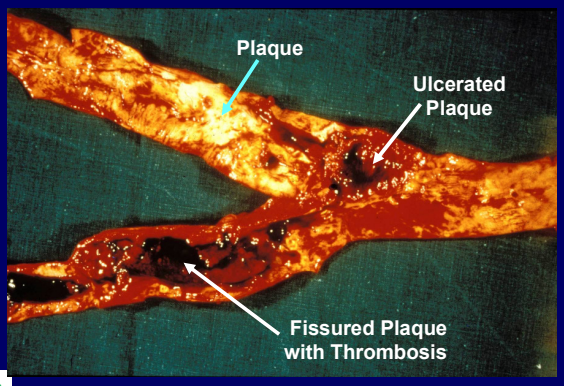


The risk starts at systolic 115 mmHg (83% adults)

MacMahon et al. Lancet 1990;335:765-74



Atheroma in carotid artery



What puts up population BP?

- Salt intake
- Lack of Fruit and vegetables
- Weight
- Lack of Exercise
- (Alcohol excess)

Salt

Up to 5000 yrs ago 0.1 g/d, now 9 to 12 g/d

Why?

(a) Preserves food
(b) Cleans up bad food

Now no need (a) Refrigeration
(b) Better chemicals

But eating 9 to 12 g/d - courtesy of the food industry

80% of salt hidden in food
- Processed
- Fast
- Restaurant
- Canteen

Salt, diet & health. 1998, Camb Uni Press

Totality of Evidence

• Epidemiology	Over 50 population studies and Intersalt
• Migration	e.g. Kenya
• Intervention	Portuguese villages. New born babies
• Genetic	All defects impair ability of the kidney to excrete Na
• Mechanisms	Plasma Na, corrected volume expansion
• Animal	BP caused or aggravated by salt (e.g. chimpanzees)
• Treatment	Meta-analysis. Dose response
• Mortality studies	Meta-analysis of cohort studies
• Outcome trials	Meta-analysis of outcome trials

Meta-analysis of ↓ Salt Intake by 5-6 g/day

↓ Stroke 24% ↓ CHD 18%

UK ≈35,000 deaths prevented per year

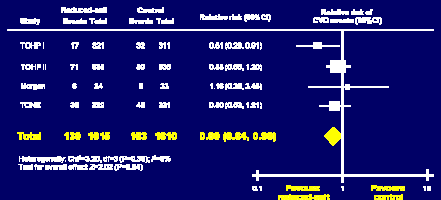
Worldwide ≈ 2.5 million deaths prevented per year

He & MacGregor. Hypertension 2003;42:1093-99

Meta-analysis of Outcome Trials (Lancet 2011)

↓ Salt 2 g/d

↓ CVD events 20% (P<0.05)



He & MacGregor. Lancet 2011;378:380-382

Summary

Salt intake (9–12 g/day)

- Population BP, rise in BP with age, hypertension
- Other effects e.g. stomach cancer, stroke, LVH, kidney disease, osteoporosis etc

∴ Reduce salt intake from 9–12 g/day to 5 g/day

How to ↓ Salt Intake

Measure amount and sources of salt

Added	Food industry
Cooking/Table Sauces	Processed food Eating out
↓	↓
Public health campaign	Gradual reduction in added salt

Campbell, et al. JHH. 2011

Reducing salt intake
Who is responsible?

- Public
- Government
- Food industry

Developed countries 80% salt passive

∴ Food industry is responsible & must take it out

How ?

- Slowly 10-30% per year
- No taste problems
- Almost no technical problems
- Voluntary but threat of legislation
- Clear labelling

Hidden Salt in food

e.g. processed, fast, takeaway, restaurant food

Food industry slowly reduce
- No rejection by public

↓

Fantastic for Public Health

Very little cost

↓ BP

No need to change diet

CASH Strategy for Reducing Salt in UK

Source	Salt intake g/day	Reduction needed	Target intake g/day
Table/Cooking (15%)	1.4 g	40% reduction	0.9 g
Natural (5%)	0.5 g	No reduction	0.5 g
Food industry (80%)	7.6 g	40% reduction	4.6 g
	Total 9.5 g		Target 6.0 g

∴ The food industry needs to slowly reduce salt content of all foods by 40% over the next 5 years by setting target for each food category

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Targets set in UK by FSA & CASH

- Set targets for industry to achieve from 2005 to 2010. New targets set for 2012 over 80 categories of food
- Gradual reduction, 10-20% a year. No rejection by public
- Continuous media publicity to ensure industry collaborate
- Praise companies achieving targets, name and shame those not

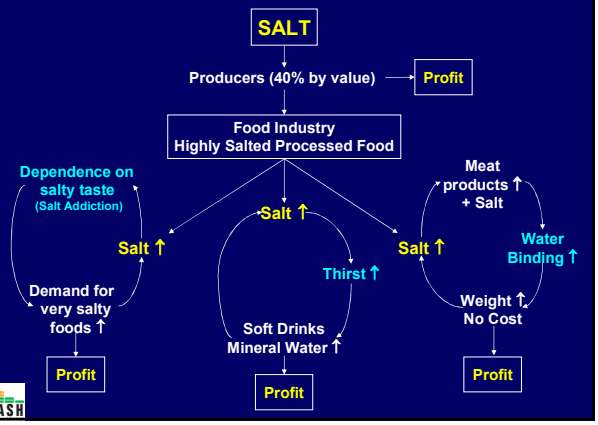
Monitor salt intake

- Measure 24h urinary sodium in a random sample of the population every 3 years
- Monitor reductions in the amount of salt added to foods by the food industry & ensure they will reach the target that has been set for each food group

Perceived Barriers

1. Taste
2. Food technology
3. Safety
4. Commercial

Hidden Salt – Its Commercial Value



Sea Water Comparison

(1.0 g of sodium / 2.5g of salt per 100g)

Pizza	60%	Medium Sliced White	50%
Chicken Curry	60%	Granary Loaf	60%
Processed Cheese	130%	Crumpets	80%
Bacon	200%	Digestive	60%
Sausages	100%	Cream Crackers	60%
Smoked Fish	190%	Cheddar Cheese	70%
Sweet Pickle	170%	Stilton Cheese	90%
Shepherds Pie	40%	Processed Cheese	130%
Frozen Prawns	80%	Branflakes	100%
Crisps	110%	Cornflakes	110%
Salad Cream	100%	Tomato Ketchup	110%
Savoury Biscuits	70%	Brown Sauce	100%

Above data collected 2001, n.b. most have been reduced by 10 – 30% (2008) UK only

Salt reduction targets

Main Product Category	Sub Categories (where relevant)	Current 2010 Targets (g salt or mg sodium per 100g)*	Targets for 2012 (g salt or mg sodium per 100g)*	Comments
7. Baked Beans	7.1 Baked beans in tomato sauce without accompaniments	0.8g salt or 300mg sodium (maximum)	0.63g salt or 250mg sodium (maximum)	The Agency recognises the significant reductions that have already been achieved in these products and the difficulties with achieving the 2012 target within the timeframe set. We will therefore review progress in both 2010 and 2012.
8. Ready meals and meal centres	8.1 Chinese-Thai Indian – ready meals Includes all Chinese, Thai and Indian ready meals with accompaniment (potato, rice, noodles etc) made from meat, poultry, fish or vegetables e.g. sweet and sour chicken with rice, thai green curry with noodles, chicken tikka	0.8g salt or 300mg sodium (average)	0.63g Salt or 250mg Sodium (average) 1.13 Salt or 450mg Sodium (maximum)	The revised category also now includes all coated poultry products, as well as coated fish products, and all non-meat pies (e.g. cheese and onion pasties). Some vegetarian products based on meat analogue products e.g. Quorn, tofu etc are included in category 25, although meal centres and ready meals remain in category 8. We recognise that some manufacturers will make a small range of products that are naturally high in sodium for example those based on cheese and pastry. In these circumstances the Agency would expect companies to achieve the
9. Soups	9.1 Dried soups (as consumed) Includes all soups in a cup and other dried soups as consumed, i.e. once rehydrated.	0.6g salt or 250mg sodium (average)	0.55g salt or 230mg sodium (average r) 0.73g salt or 290mg sodium (maximum)	It is proposed that just one target is set for soups. This would continue to apply to dried soups as consumed (made up according to manufacturers instructions). The Agency is aware that a number of manufacturers are looking at the feasibility of this target for dried soup and we will review progress in 2010.
10. Pizzas	10.1 Pizzas with higher salt toppings e.g. cured meat (ham, bacon, pastrami, chorizo, salt beef), olives, anchovies and smoked fish, hard cheese, prawns, crayfish, crab, tuna and "Cheese Feast" or similar toppings	1.2g salt or 470mg sodium (average)	1.0g salt or 400mg sodium (average r) 1.25g salt or 500mg sodium (maximum)	
11.Crisps and snacks	11.1 Standard potato crisps All standard potato crisps, all flavours except salt and vinegar. Includes	1.5g salt or	1.38g salt or 550mg sodium	The Agency recognises that the snack sector has removed a considerable amount of salt from their products and has been removing artificial additives, monosodium glutamate and working on reducing [illegible] reduction is difficult over [illegible] have been set at levels that [illegible] Agency will review
13. Bought Sandwiches				[illegible] seems it applies across the [illegible] used to allow for variety in [illegible]. Individual products do
14. Table Sauces	14.1 Tomato ketchup	2.4g salt or 1000mg sodium	1.83g salt or 730mg sodium	

A level playing field - all companies work to the same salt target

Voluntary

Quicker

Continuous media pressure

Acceptable to government

Big reduction - difficult

Regulation/legislation

Slower

No need for media pressure

Party in power may change

Big reduction - possible

Food industry needs "level playing field"

The voluntary 'carrot and stick' approach

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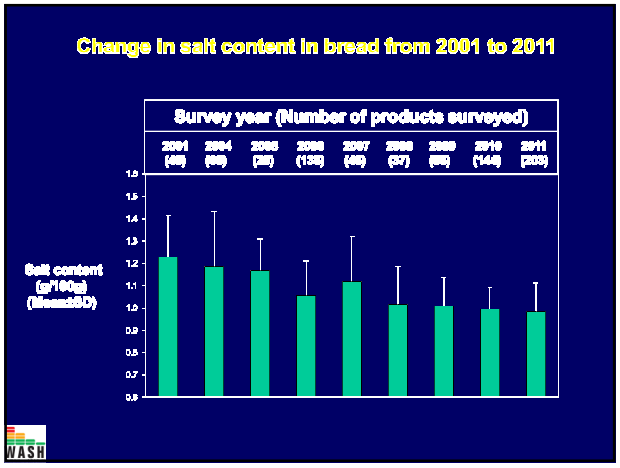

UK Success by 2011

Salt intake has been reduced

from 9.5 to 8.1 g/d salt (15% ↓)

(24-hour urinary sodium)

but target of 6 g/d still to be achieved

i.e. 49,000 tons/yr salt removed

So far ≈18000 strokes & heart attacks prevented per year (9,000 fatal)

www.actiononsalt.org.uk

Cost-effective Analysis UK (NICE)

Cost of salt campaign ≈£5 million per year

Healthcare savings ≈ £1.5 billion per year

http://guidance.nice.org.uk/PH25

WASH Action Groups

www.worldactiononsalt.com

Worldwide Action

1. USA, Canada, Australia following UK model
2. Europe (ESAN) 16% reduction over 4 yrs
3. PAHO: Brazil sets targets, Chile, Argentina, Mexico following
4. Asian-Pacific: Salt intake is very high, e.g. China, Japan, Korea. Urgent need to reduce salt

Global Food Industry could play a much more prominent role

- Unilever & Pepsico worldwide salt reduction across their products
- Kellogg's, Nestle about to reduce salt globally to UK levels

www.worldactiononsalt.com

South Africa

- Has set target of 5 g/d salt by 2025
- Minister of Health can regulate food supply
- 29 out of 30 major global food companies opted for a regulatory approach as it gave them a guarantee of a level playing field
- Salt targets set for 10 biggest contributors

Sources of salt in Hong Kong

Hong Kong

- Salt intake: ≈12 g/d (high) measured by 24h urinary sodium
- Major sources of salt → Processed food? / Eating out
- Set target for biggest contributors
- Monitor progress
- For voluntary policy – strong government support & forceful NGOs essential

Conclusion

Every country in the world must now

1. Set up salt reduction plan
2. Implement the plan

This is the single most cost-effective public health measure

It would be negligent for any government not to take action now

www.worldactiononsalt.com