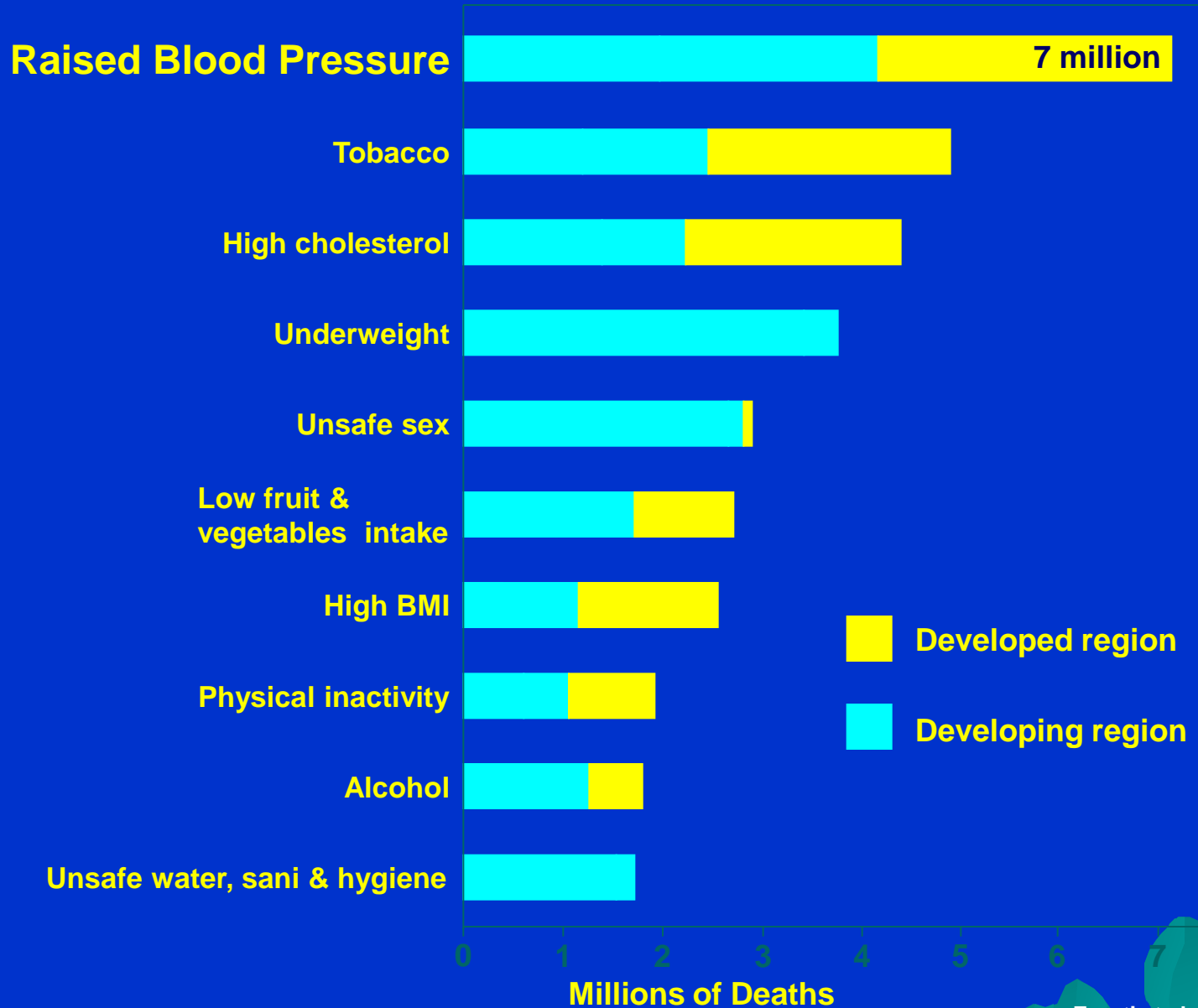


Salt and Health

Dr Siobhan Jennings
Consultant in Public Health
Medicine

Major Underlying Factors causing Death - Worldwide



SLAN 07

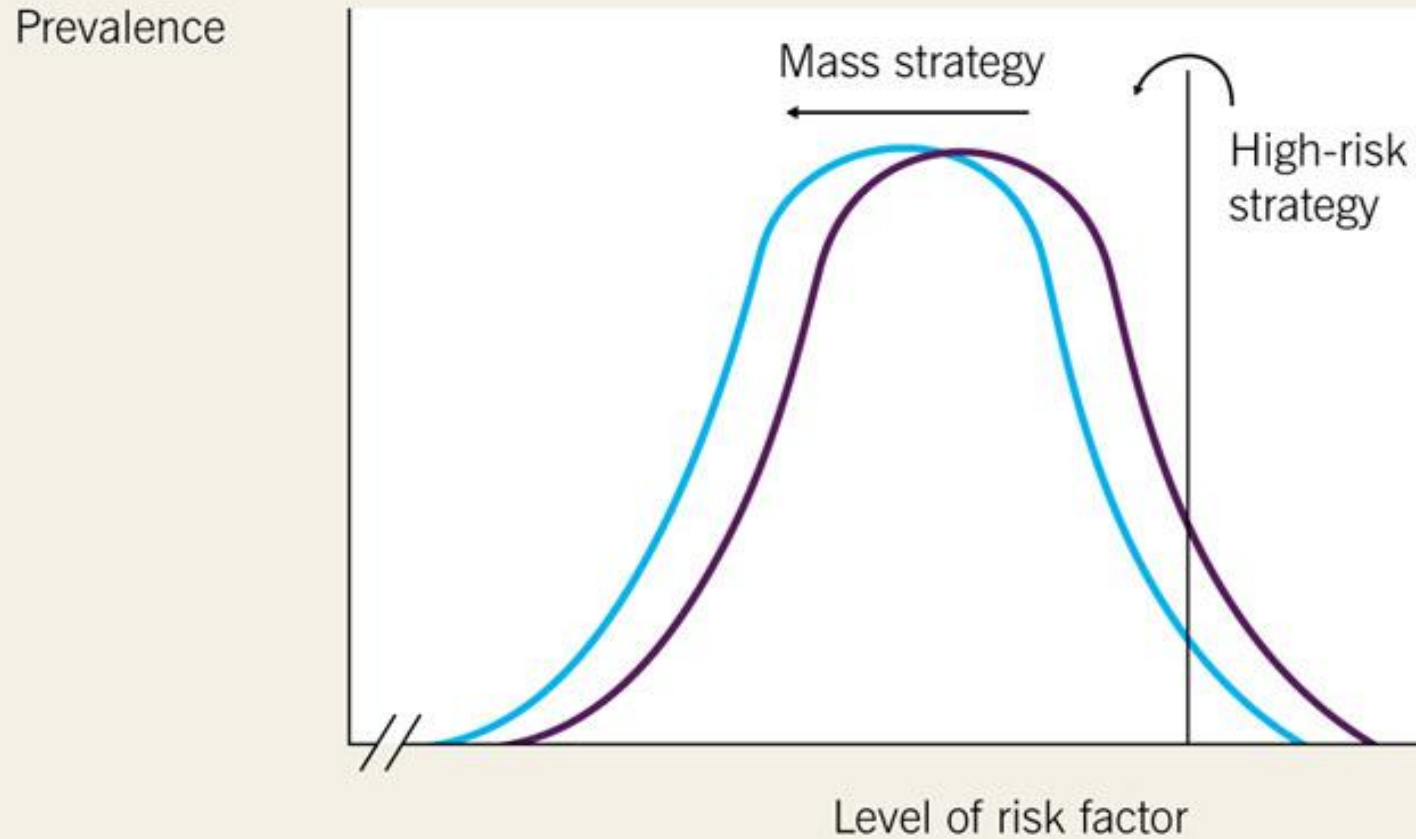
Hypertension

Summary: physical exam (n=1207, 45+ yrs)

- ◆ 60% hypertension (140/90mgHg)
- ◆ 57% not on medication
- ◆ 70% on medication not controlled

"rule of 60s"

MASS AND HIGH RISK STRATEGIES FOR PREVENTION



What puts up population BP?

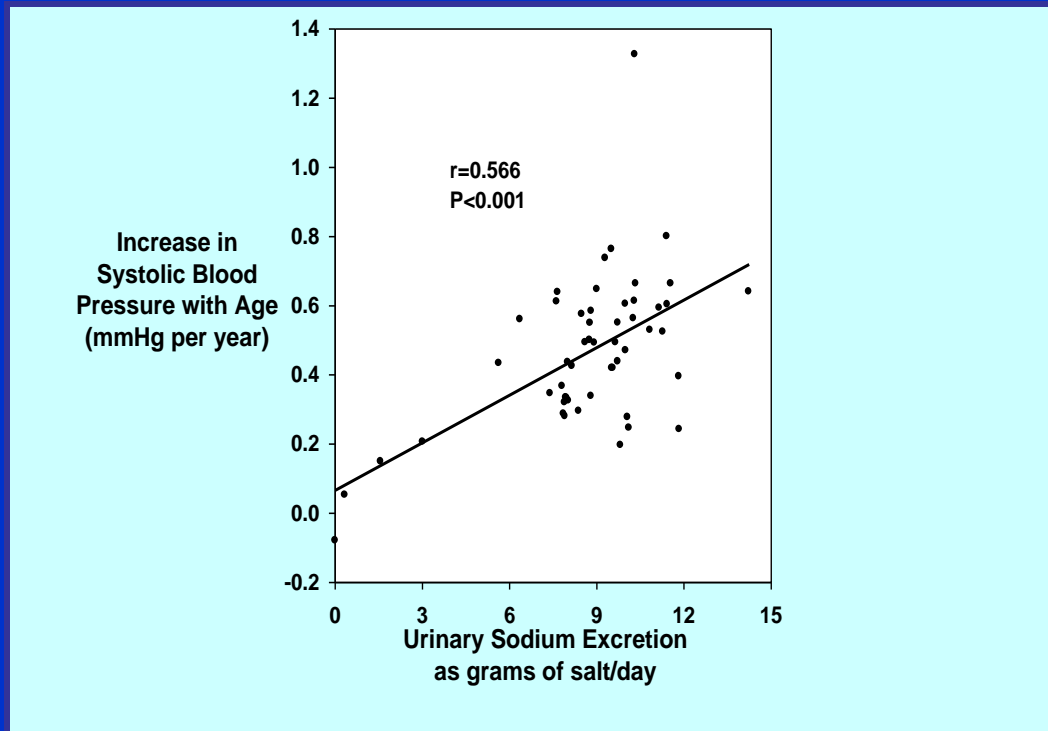
- ◆ Salt intake
- ◆ Lack of Fruit and vegetables
- ◆ Weight
- ◆ Lack of Exercise
- ◆ Alcohol excess

Evidence – Salt and BP

Evidence from diverse sources

– Observational epidemiological studies

Salt Excretion and rise in BP with age INTERSALT Study



Evidence – Salt and BP

Evidence from diverse sources

- Animal studies
- Trial in Infants with long term follow up



- Community intervention study in 2 Portuguese villages

Modest salt restriction of at least 4 weeks duration: Meta-analysis of 28 RCTs

Hypertensive

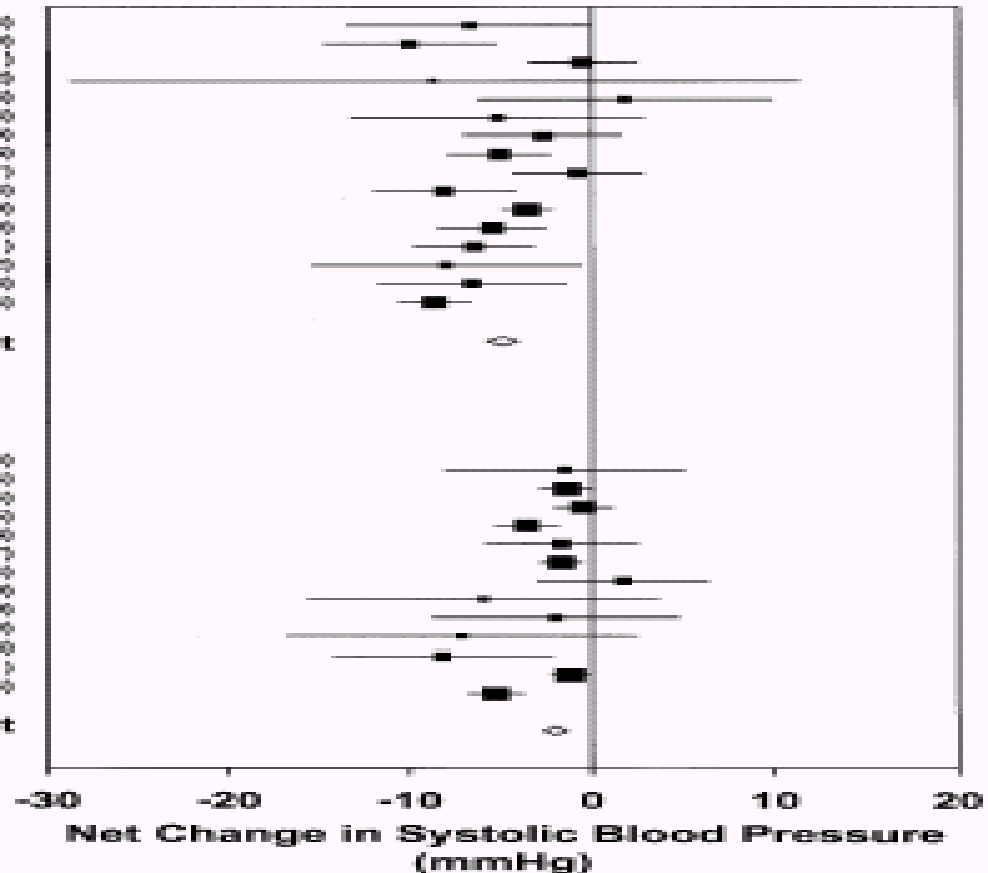
Parfjs et al 1973 (18)
 MacGregor et al 1982 (20)
 Watt et al 1983 (21)
 Silman et al 1983 (22)
 Puska et al 1983 (23)
 Richards et al 1984 (24)
 Christensen et al 1984 (25)
 Chalmers et al 1985 (26)
 Grobbee et al 1987 (27)
 MacGregor et al 1989 (28)
 ANHRC 1989 (29)
 ANHRC 1989 (30)
 Benetos et al 1992 (31)
 Fotherby and Potter 1993 (32)
 Cappucco et al 1997 (33)
 Sacks et al 2001 (14)

Overall Effect

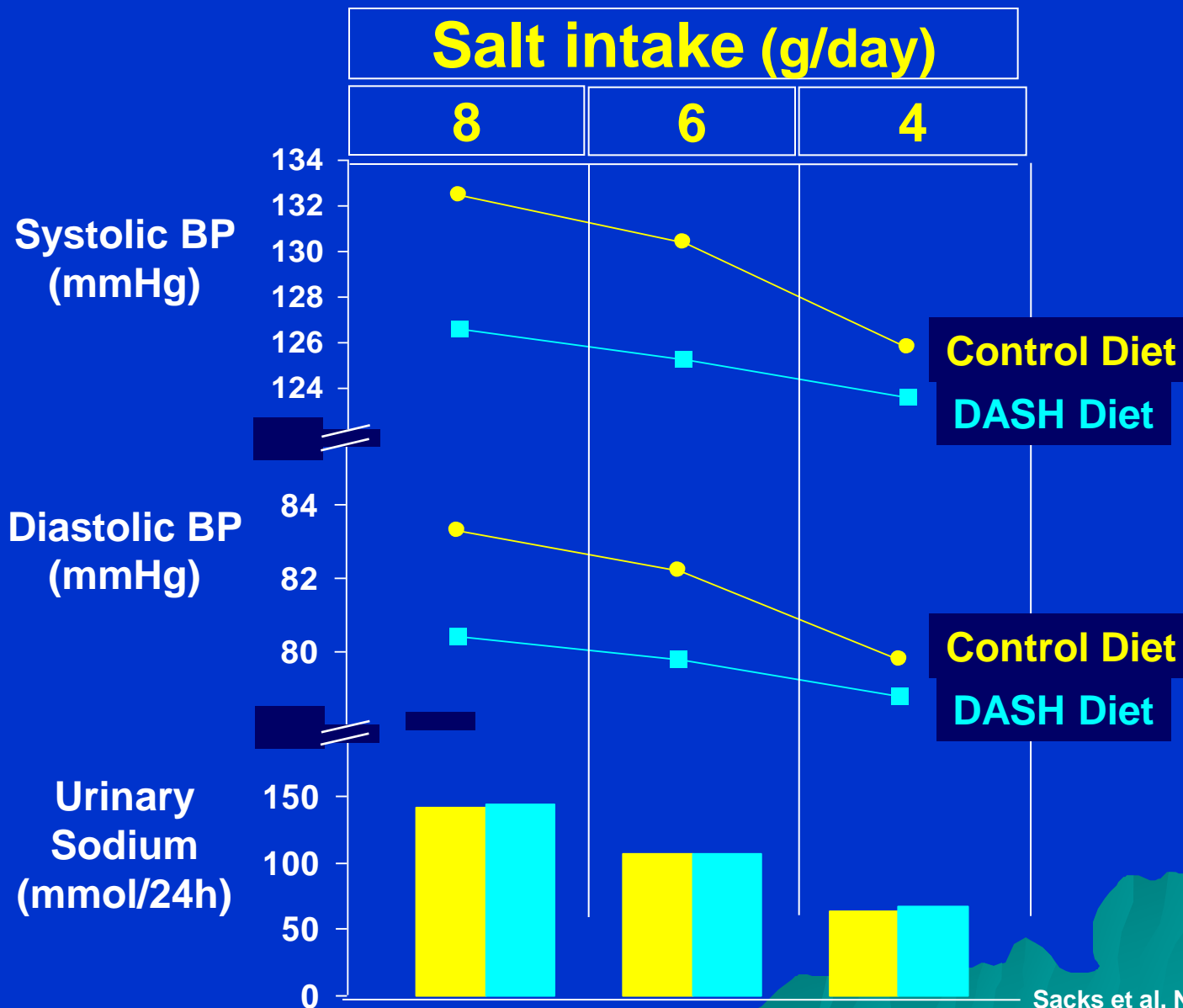
Normotensive

Puska et al 1983 (23)
 Watt et al 1985 (HH) (34)
 Watt et al 1985 (LL) (34)
 Mascoli et al 1991 (35)
 Cobiac et al 1992 (36)
 TOHPRO 1992 (37)
 Ruppert et al 1993 (38)
 Nestel et al 1993 (F) (39)
 Nestel et al 1993 (M) (39)
 Schorr et al 1996 (40)
 Cappucco et al 1997 (33)
 TOHPRO 1997 (41)
 Sacks et al 2001 (14)

Overall Effect

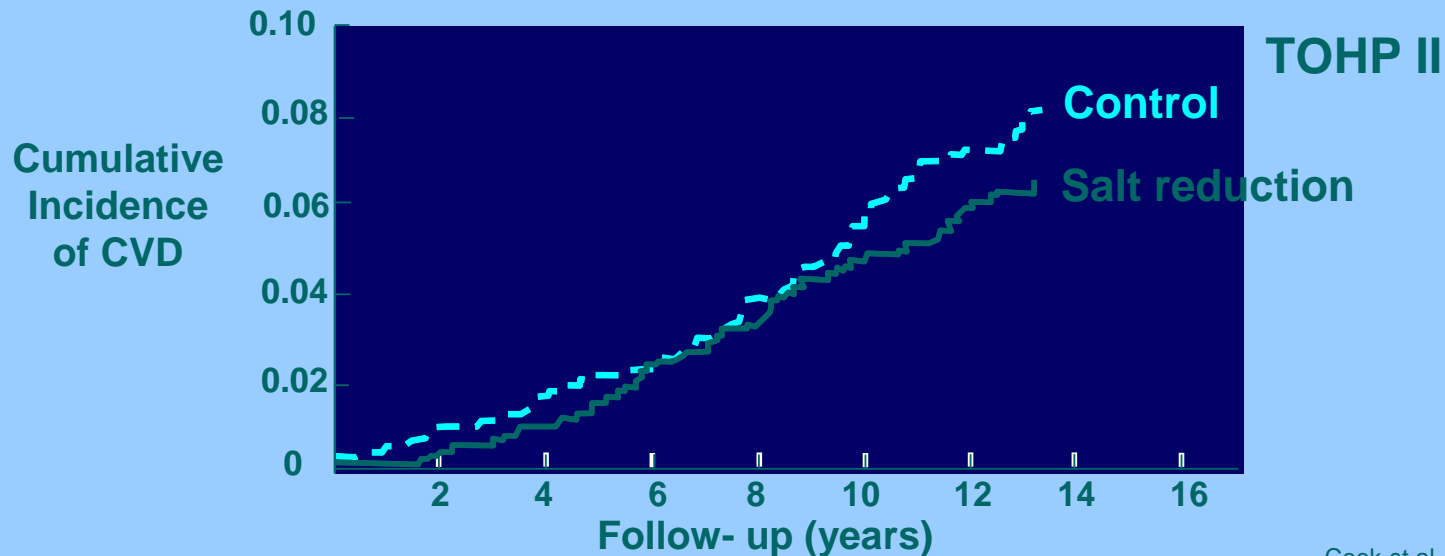
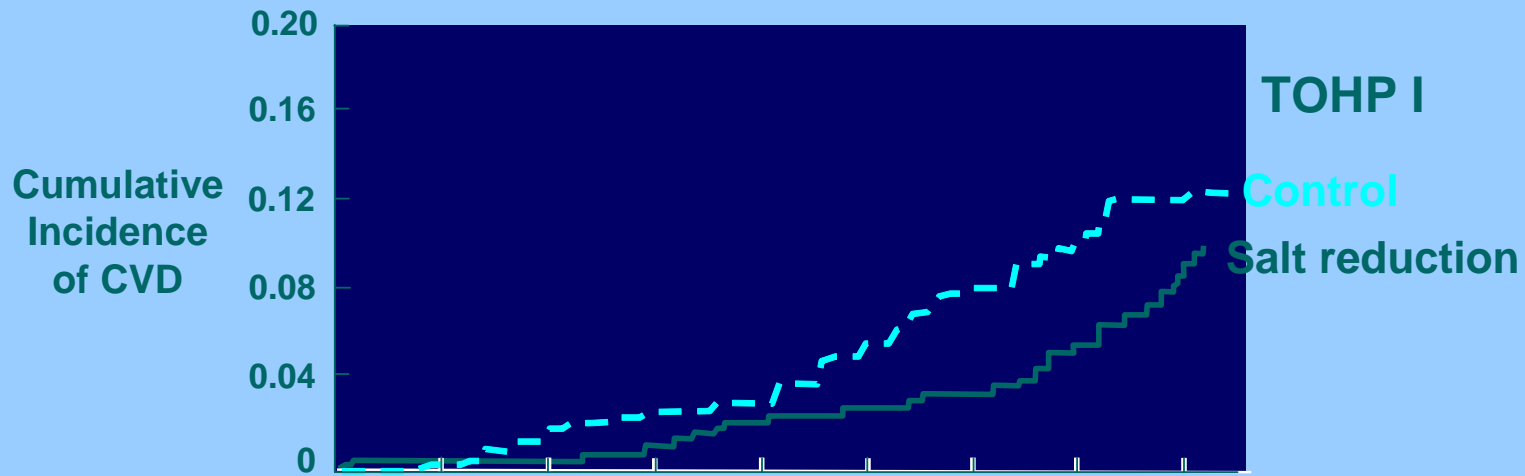


DASH-Sodium Trial (All participants N=412)



Outcome Trial

Overall: Salt 25-30% ↓ → CVD 25% ↓



What does it mean?

Reduction of 6g/day salt

- 7.1/3.9 ↓ in BP Hypertensives
- 3.6/1.6 ↓ in BP Normotensives

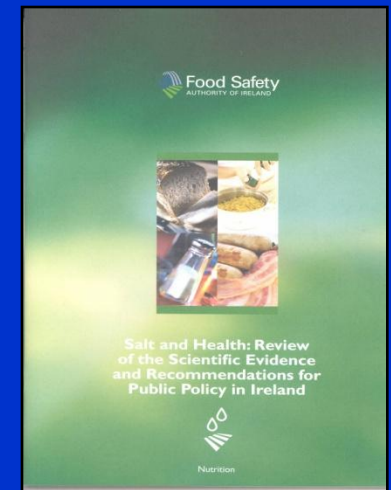
- ↓ incidence in stroke 24%
- ↓ incidence in IHD 18%

For Ireland

- ↓ Stroke deaths of 600/yr
- ↓ IHD deaths 1,100/yr

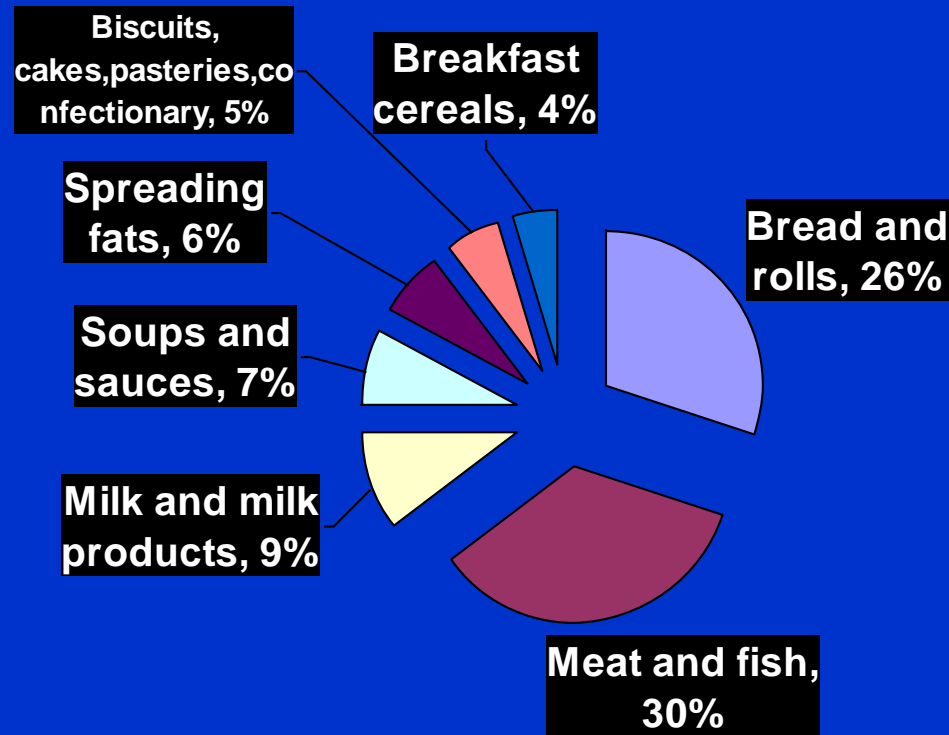
Dietary Salt

- ◆ On average adults eat 10 g Salt per day
- ◆ We need 4 g salt
- ◆ **Irish strategy**
 - Reduce to 6 g Salt per day
 - Lower intake for children
- ◆ **EU Framework**
 - 4% reduction/ yr for 4 years



Sources of Salt in diet of Irish adult population

(18 – 64 y) Calculated from IUNA database



** Discretionary 15 – 20% (at table and in cooking)

Main areas for action

- ◆ **Reformulation** of the food we eat
(FSAI collaborating with industry, research)
- ◆ **Increase public awareness** (*Safefood*, IHF)
 - Reduce use of salt at table and in cooking
 - Buy lower salted foods
(this influences food industry)
 - Eat less salted foods
- ◆ **Monitor**
 - Salt in processed food, 24 hr urinary Na excretion, consumer behaviour

Comparison of sodium levels in bread

BREAD	FSAI surveys 2005/6 Average sodium (g/100g)	UNDER TAKINGS by IBBA, 2009-10	HSE Procurement contracts 2005. (Public Analyst Lab, 2009. Average sodium (g/100g)	UK Target for 2012
White	479	450	410 – 420 g/100g	400
Brown	442	450	400 g/100g	400
Wholemeal	456	450	390 g/100g	400

Salt = sodium × 2.5

Modelling Estimates of Adult Population Sodium Intake in Ireland ^a

Selected Food Groups	Absolute Sodium Intake from Foods (g/day)	Absolute Sodium Intake from Foods (g/day)	Percentage Reduction 2005 to 2007 ^b
	2005	2007	
Bread Products	0.93	0.83	10.7%
Cured Processed Meats & Meat Products	0.63	0.57	9.5%
Meat & Meat Dishes	0.32	0.32	No New Data
Milk & Dairy Products	0.27	0.27	No New Data
Spreading Fats	0.19	0.13	31.6%
Fish & Fish Dishes	0.08	0.08	No New Data
Egg & Egg Dishes	0.05	0.05	No New Data
Pizza	0.04	0.04	No New Data
Total Sodium (All Foods)	3.38	3.14	7.1%
Total Salt (All Foods) [i.e. Sodium x 2.54]	8.58	7.97	(-7000 QUAYS)*

^a Data from **crème** study, ^{*} Based on UK study

Possible Economic Value of the 7% Reduction in Salt Intake?

- ◆ UK FSA estimates the economic value of a QALY at £30,000 (€34,300)
- ◆ Ireland's estimated Quality Adjusted Life Years (QALYs) = 6,942
- ◆ Economic benefit estimated at **€238 Million** between 2005-2007

Summary and Message

- ◆ **Evidence is overwhelming** that salt intake plays a critical role in BP regulation (and so in CVD)
- ◆ Not widely appreciated – **be champions!**
- ◆ **Be aware**
 - personal use of salt
 - personal purchasing power to influence food industry