

How can medical services care
for those who have missed a
loving, confident and nourishing
start?

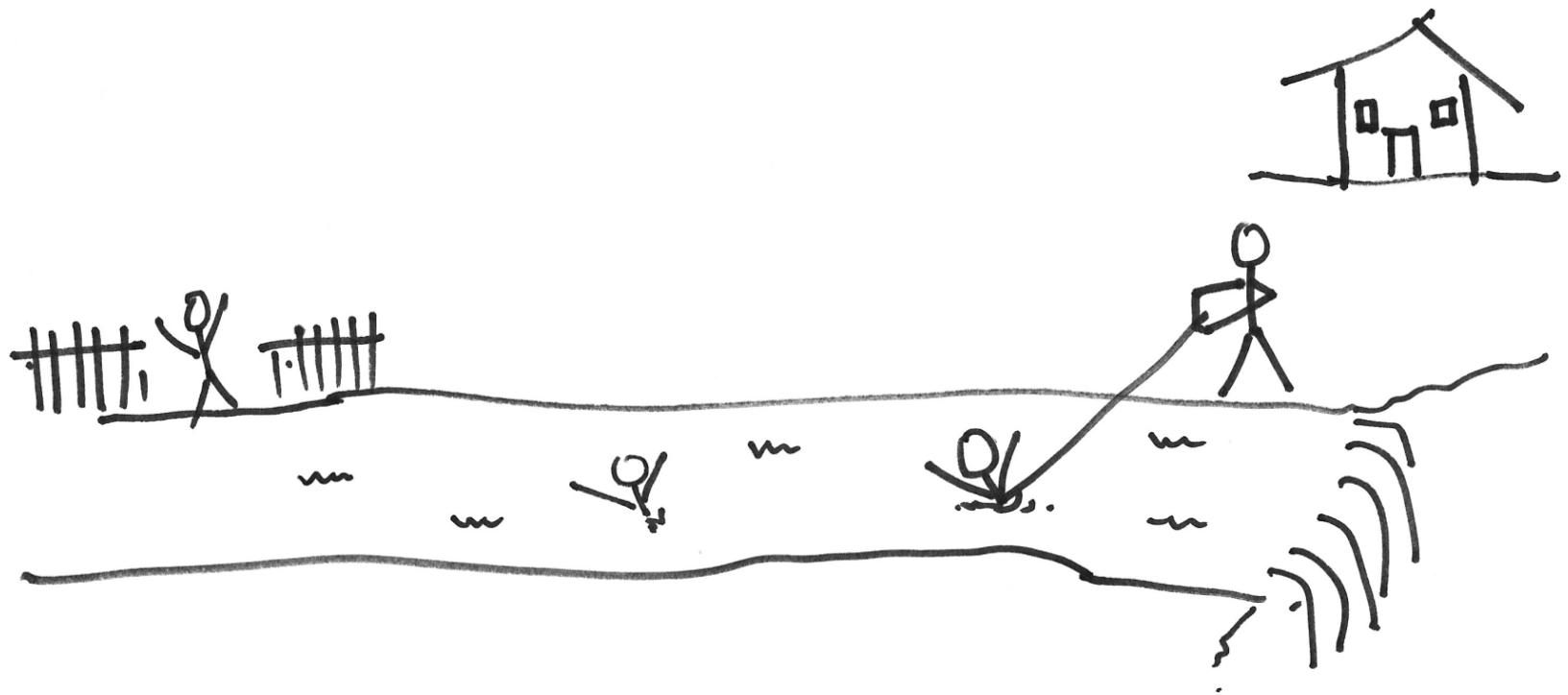
RCPE 11th September 2010

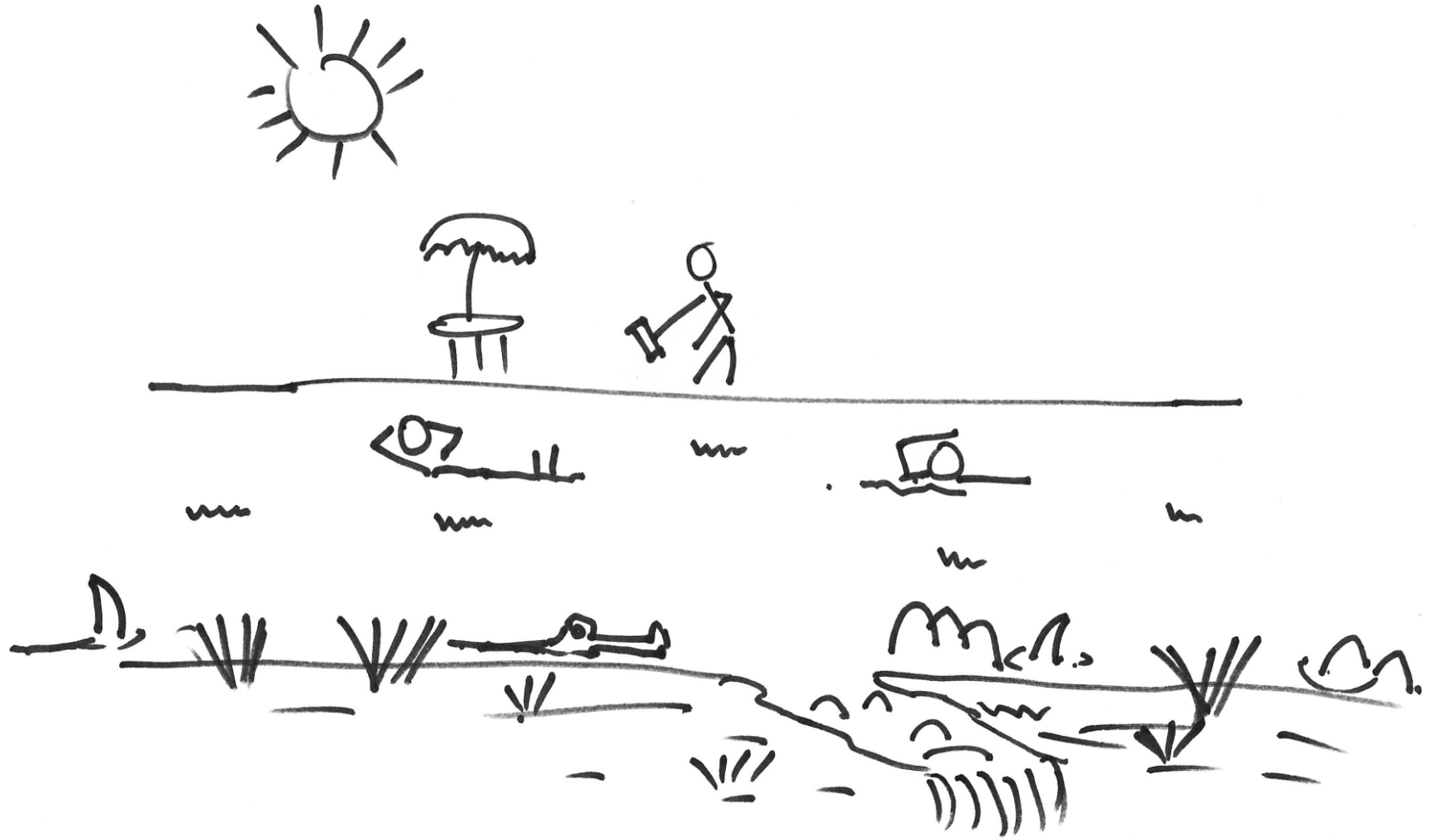
What can the NHS do?

- Draw attention to the problem
- Explain the biological consequences of social chaos
- Encourage society to explore different ways of working to prevent the problems in the first place

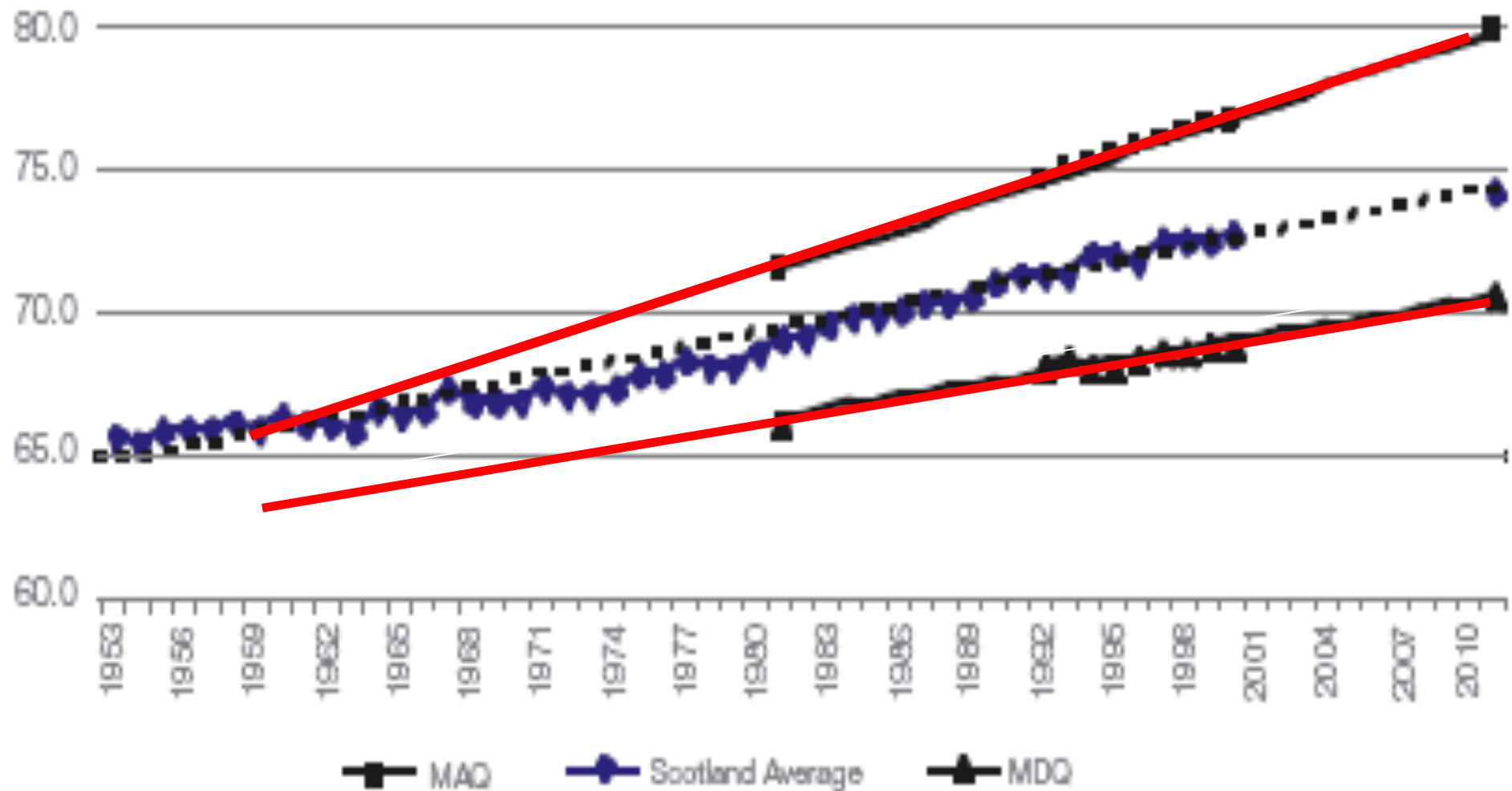
Social circumstances and health





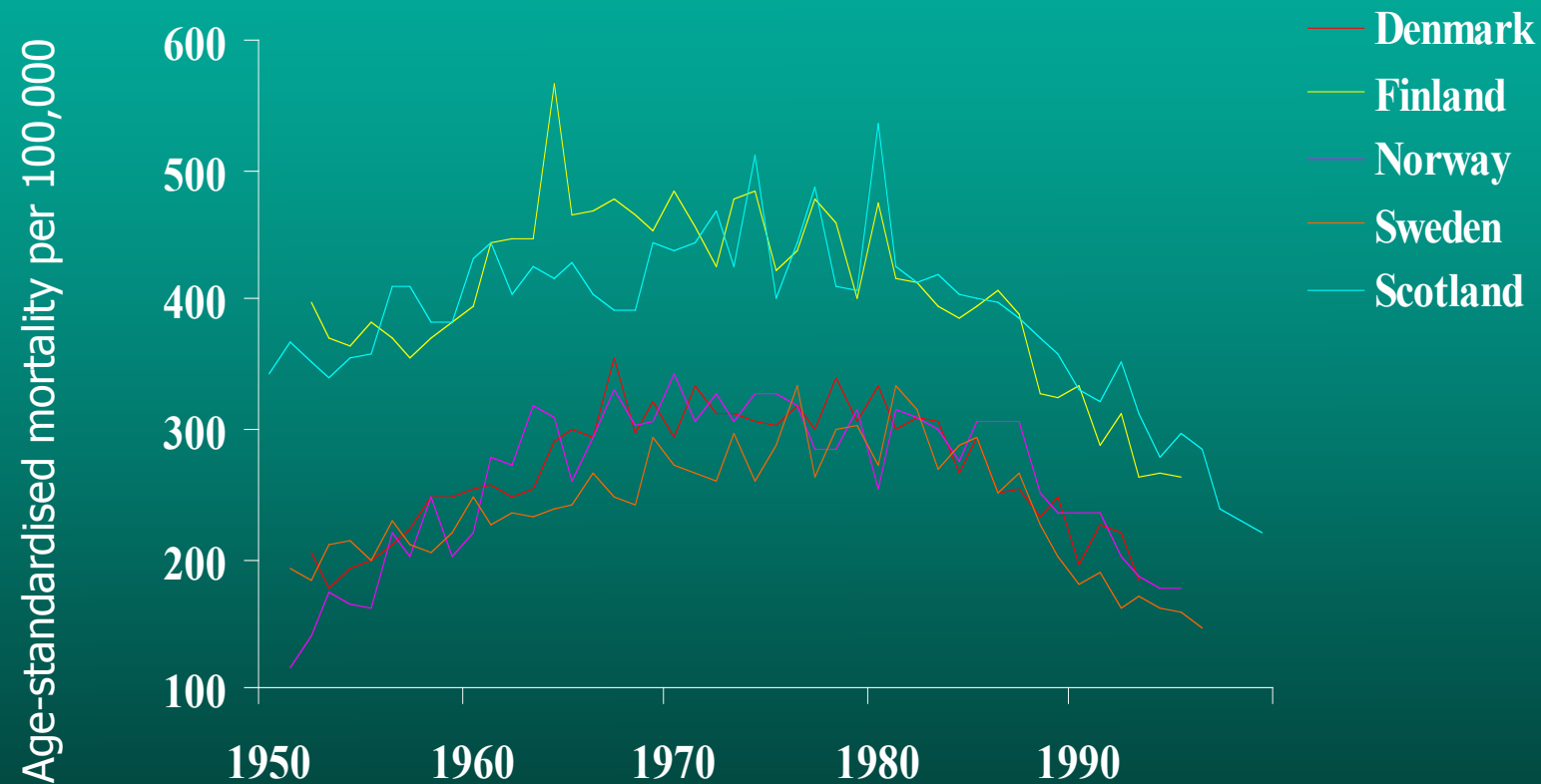


Trends in life expectancy - males

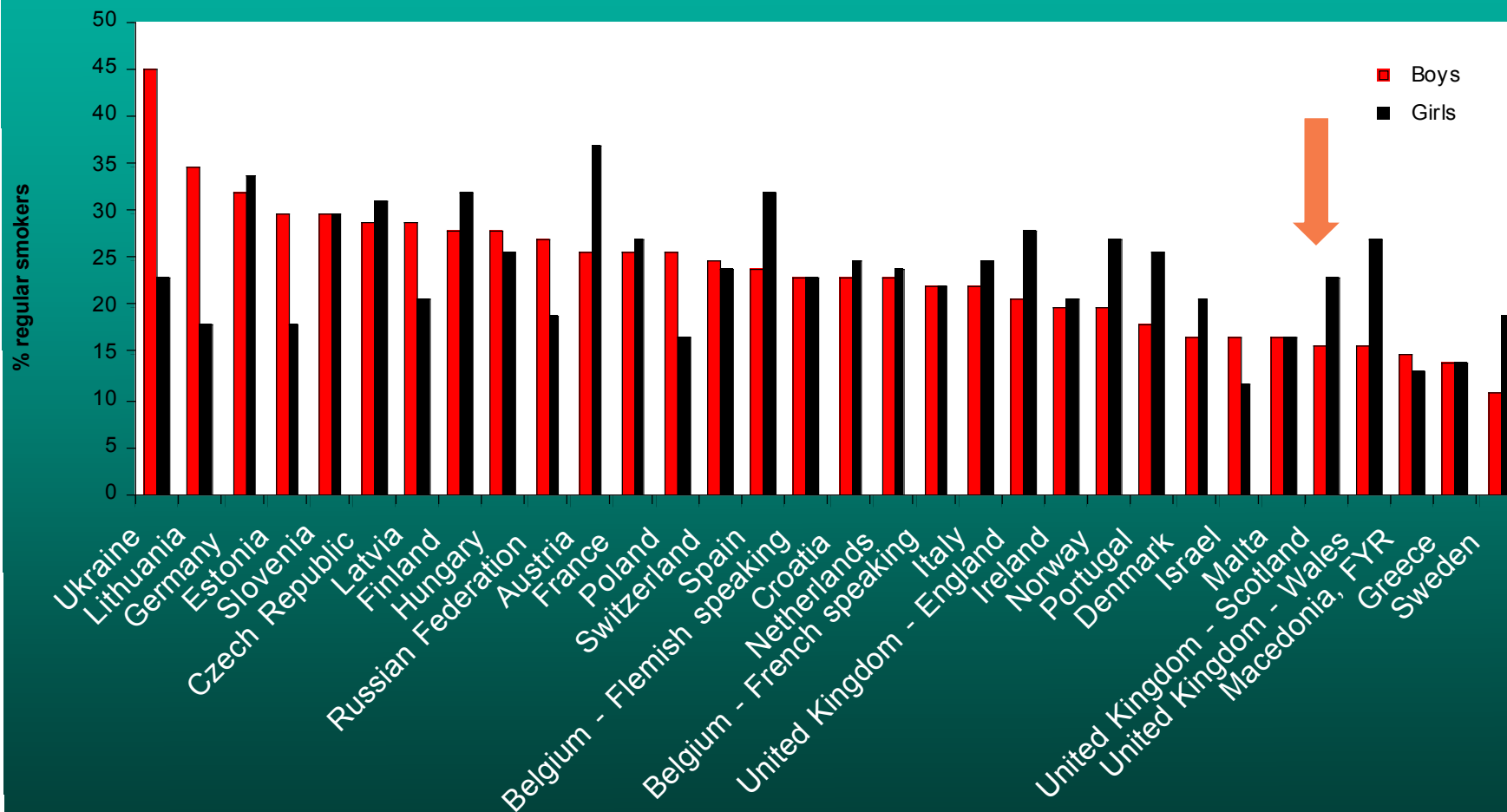


Coronary heart disease mortality

Men aged 15-74 years



Prevalence of smoking by country, in 15 year olds by sex, 2000/01, Europe

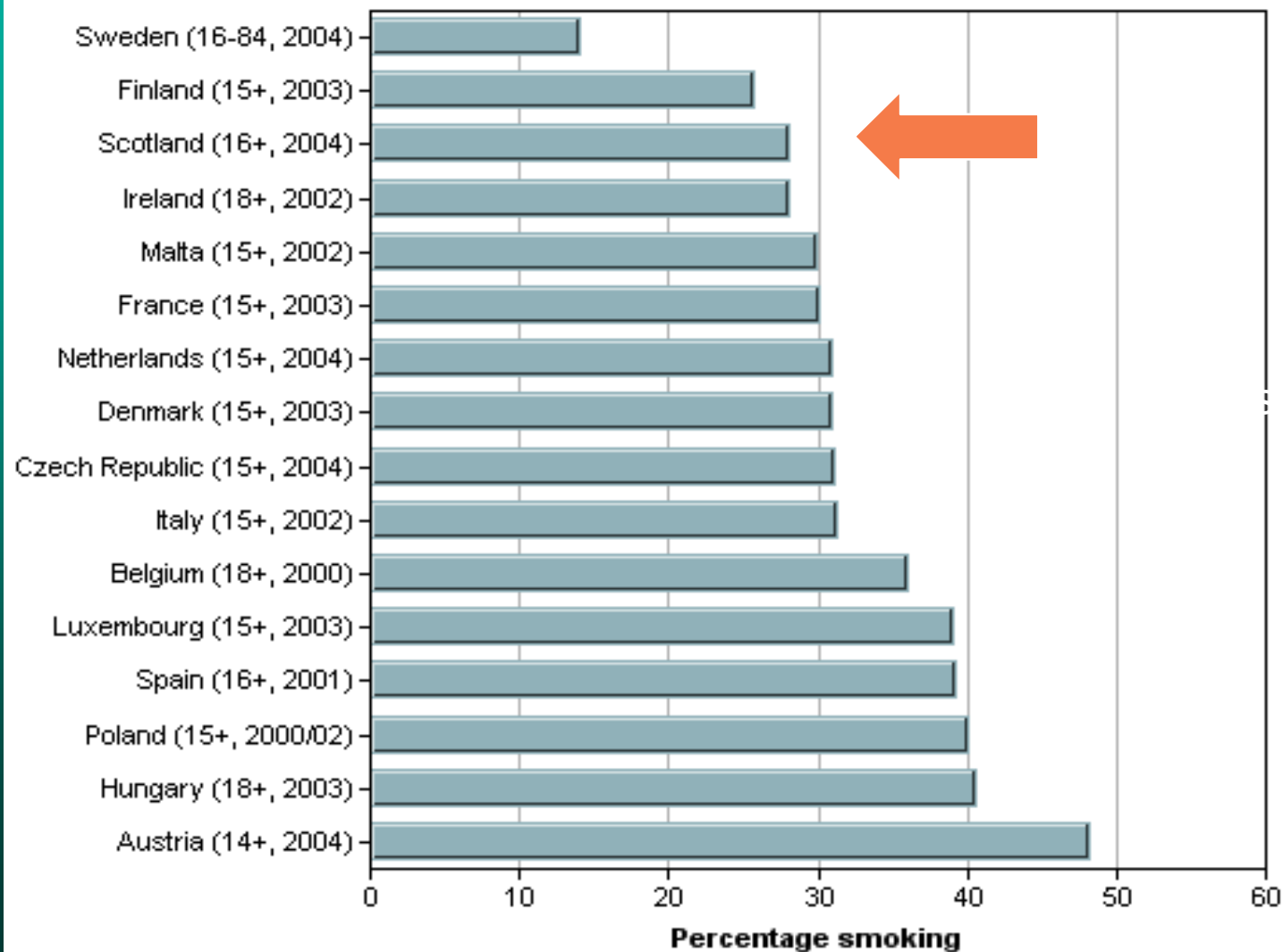


World Health Organization (1997 and 2003)

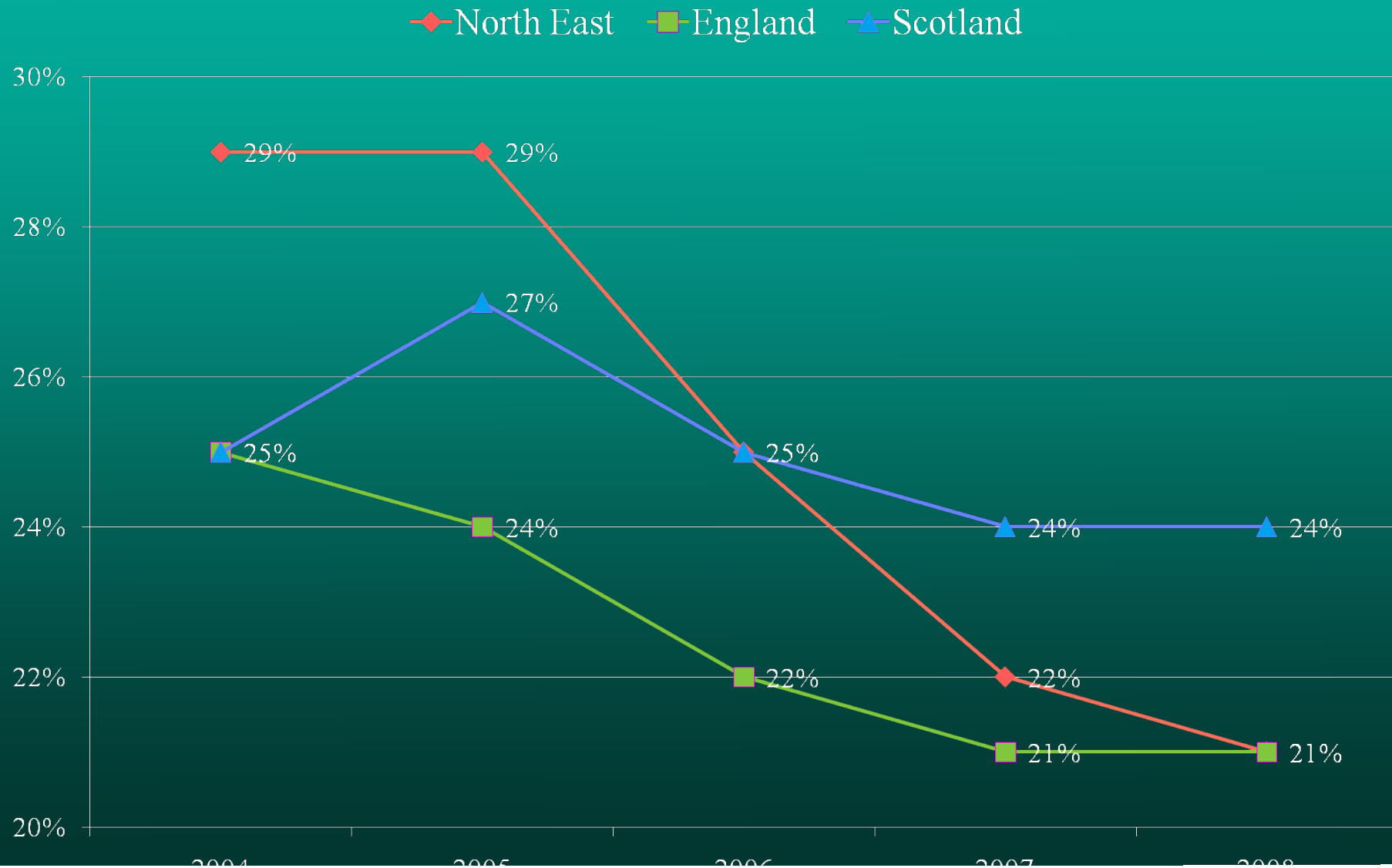
www.heartstats.org



Smoking prevalence - Europe



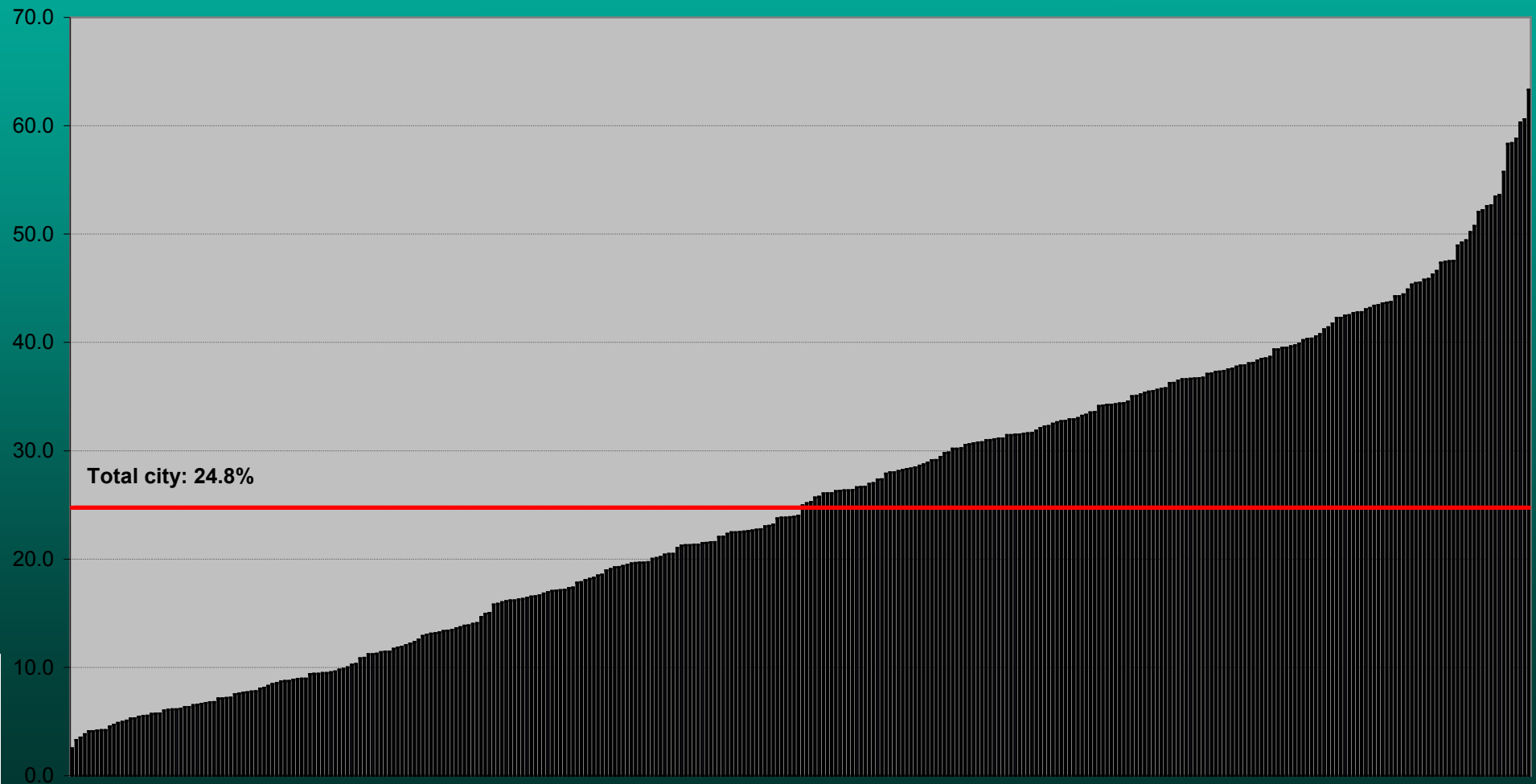
Smoking rates - A step change in NE England



Income deprivation - Glasgow

Glasgow merged DZs: income deprivation distribution

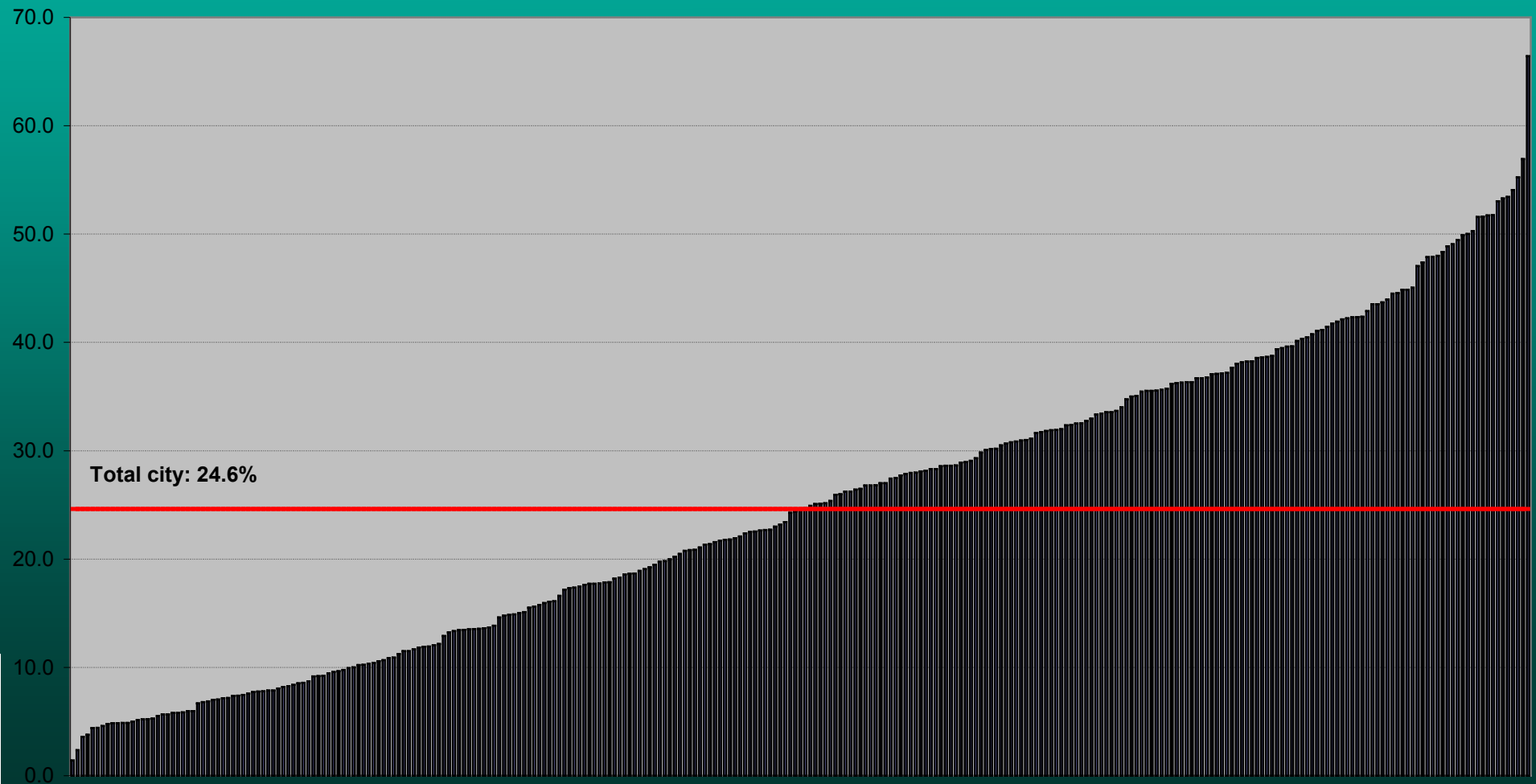
Source: GCPH, based on SIMD/DWP data



Income deprivation - Liverpool

Liverpool LSOAs: income deprivation distribution

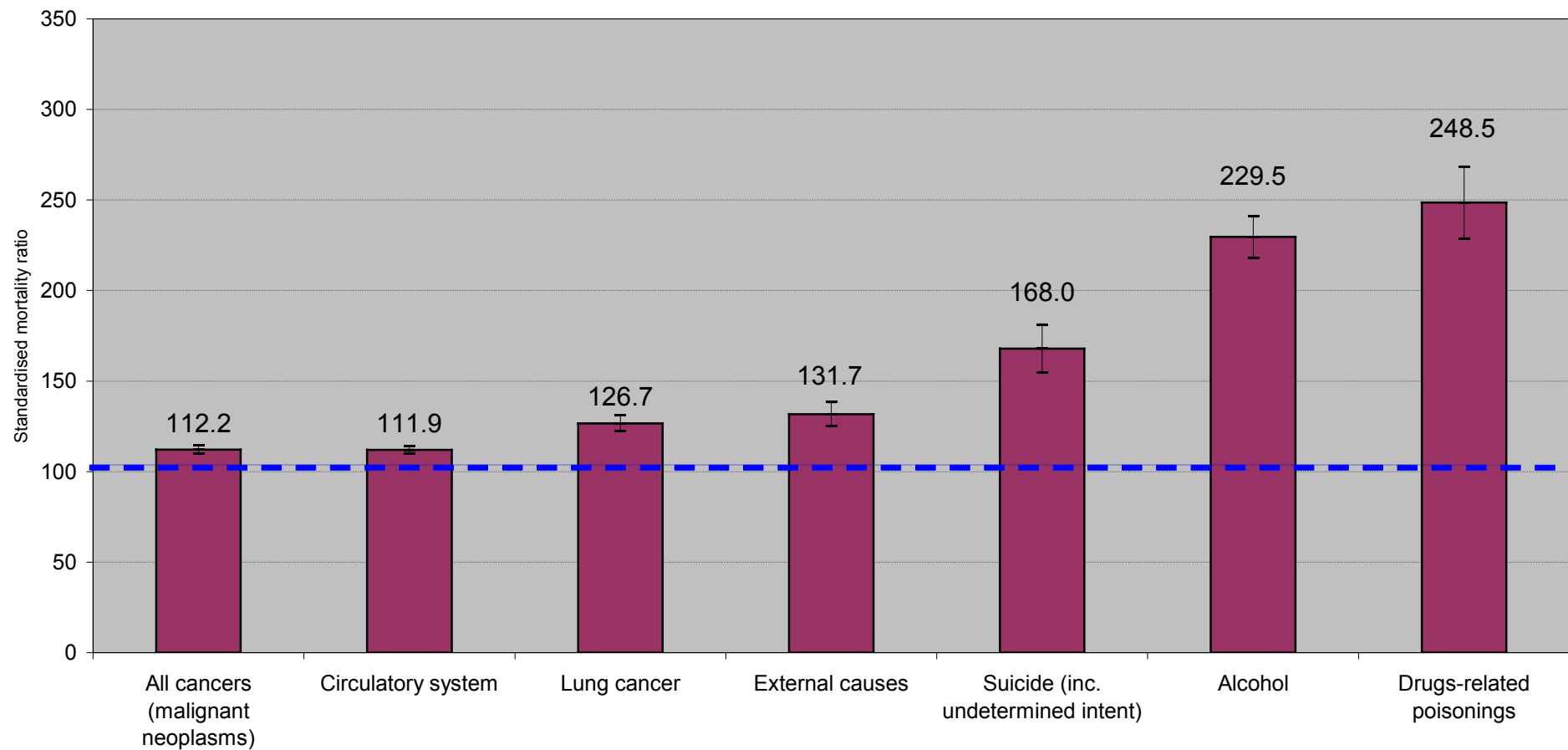
Source: DWP



SMRs by cause, all ages: Glasgow relative to Liverpool & Manchester

All ages, both sexes: cause-specific standardised mortality ratios 2003-07, Glasgow relative to Liverpool & Manchester, standardised by age, sex and deprivation decile

Calculated from various sources



Aaron Antonovsky 1923-1994





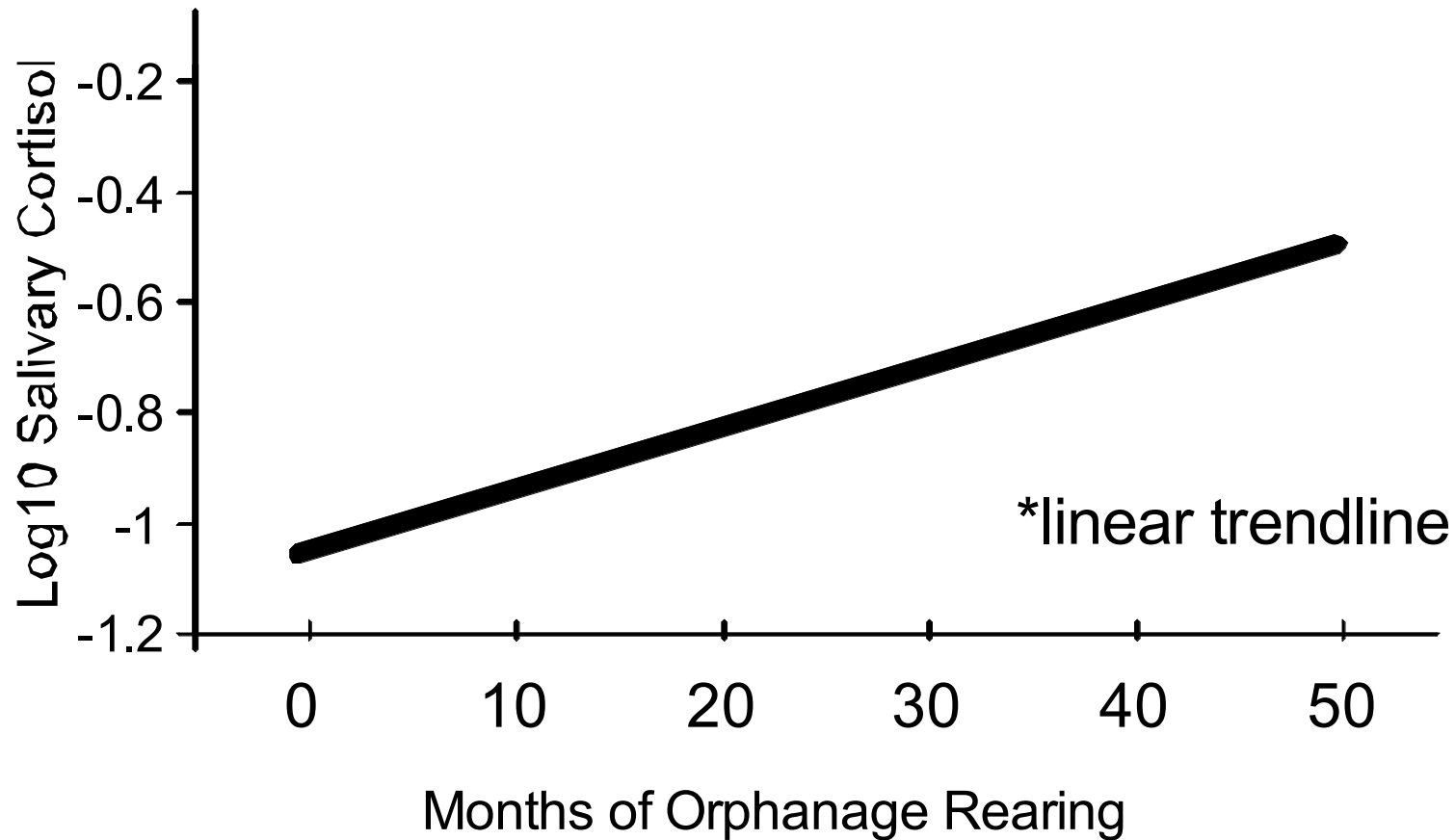
Sense of coherence....

“.....expresses the extent to which one has a feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are **structured, predictable and explicable**, that one has the **internal resources** to meet the demands posed by these stimuli and, finally, that these demands are seen as **challenges, worthy of investment and engagement.**”

Salutogenesis....

- ◆ Highlights factors which create and support human health rather than those which cause disease
- ◆ It focuses on resources and capacities which impact positively on health and aims to explain why, in adverse circumstances, some stay healthy and others don't.

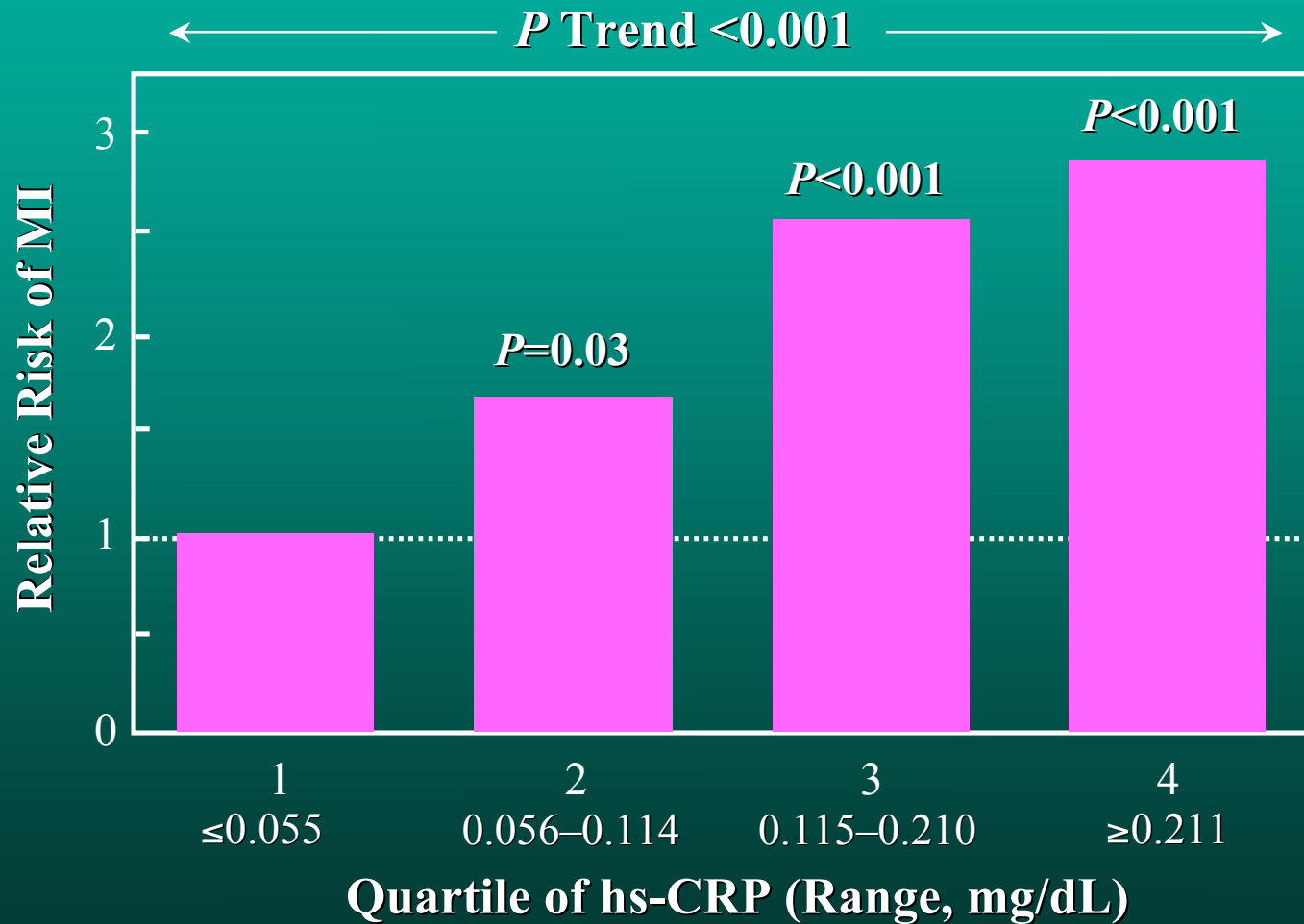
Evening Cortisol Levels Increase with Months of Orphanage Rearing *



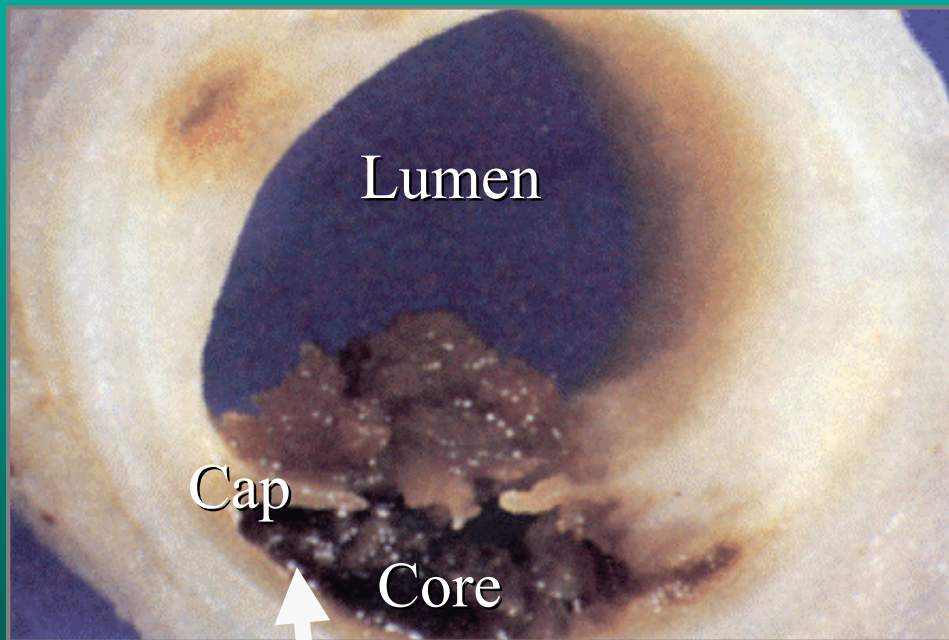
Inflammation and socioeconomic status

	Depcat	% smokers	CRP (median) mg/dl	
			Never-smokers	Smokers
affluent	1	36.8	0.71	1.42
	2	35.9	1.00	2.34
	3	39.1	1.11	2.25
	4	44.1	1.21	2.44
	5	46.6	1.13	2.53
	6	49.3	1.25	3.07
deprived	7	55.5	1.48	3.29

hs-CRP and Risk of Future MI in Apparently Healthy Men



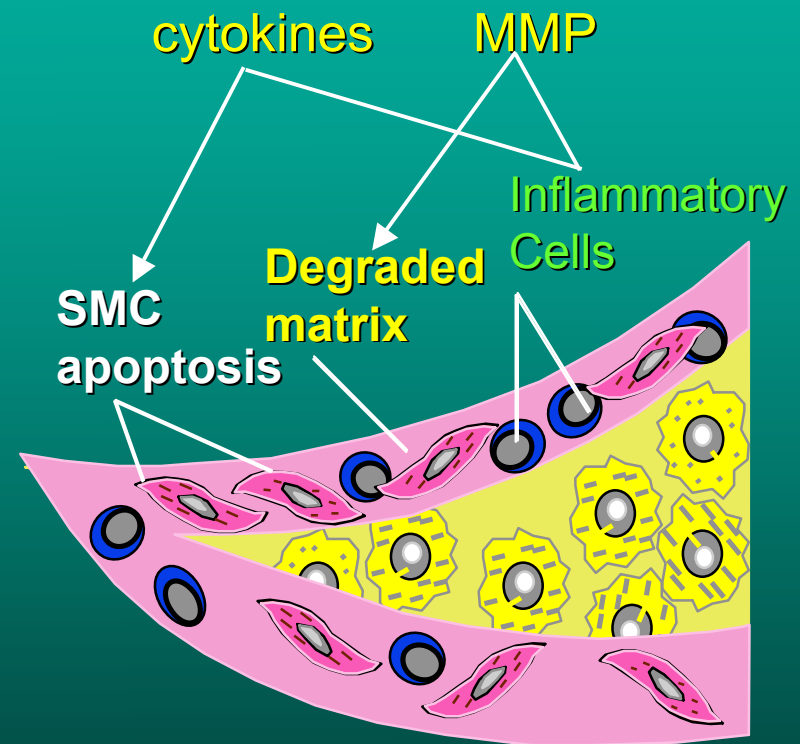
Inflammation in plaques



Inflammatory cells



MMPs, IL-6,
IL-15, IL-18, CRP



Unstable

Thin
Fibrous Cap

Warning!!!

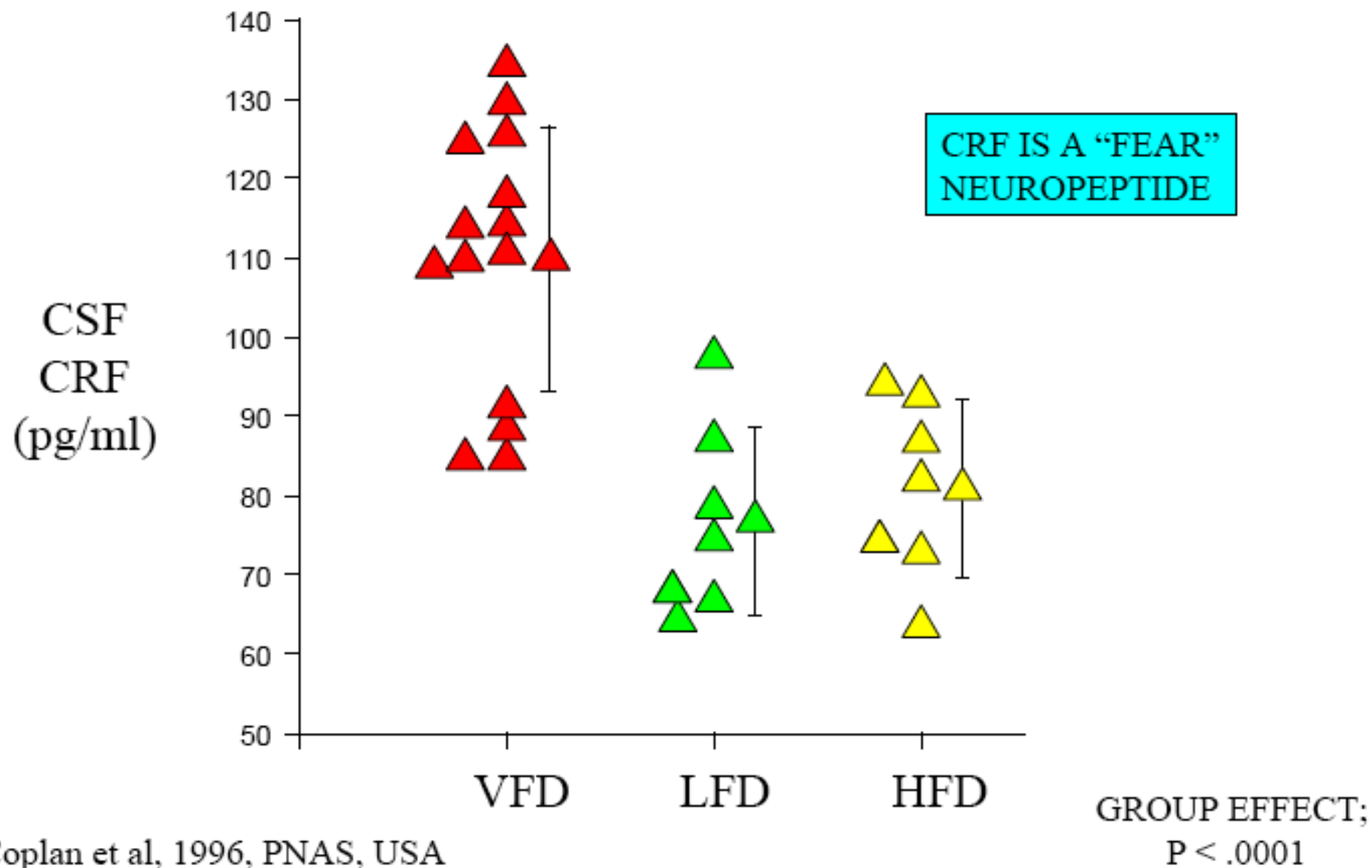
Incomprehensible scientific jargon
will follow...







CSF CRF CONCENTRATIONS IN DIFFERENTIALLY-REARED JUVENILE PRIMATES:



Coplan et al, 1996, PNAS, USA

Genetic code is defined by the sequence of four nucleotides that produce proteins and other molecules that serve cell function.

CTACGTA CT CGGAATCTCG



Protein

Epigenetic effects refer to modifications of the chemistry of the DNA, but not to a change of sequence. Epigenetics alters the activity of the gene, but not its function.

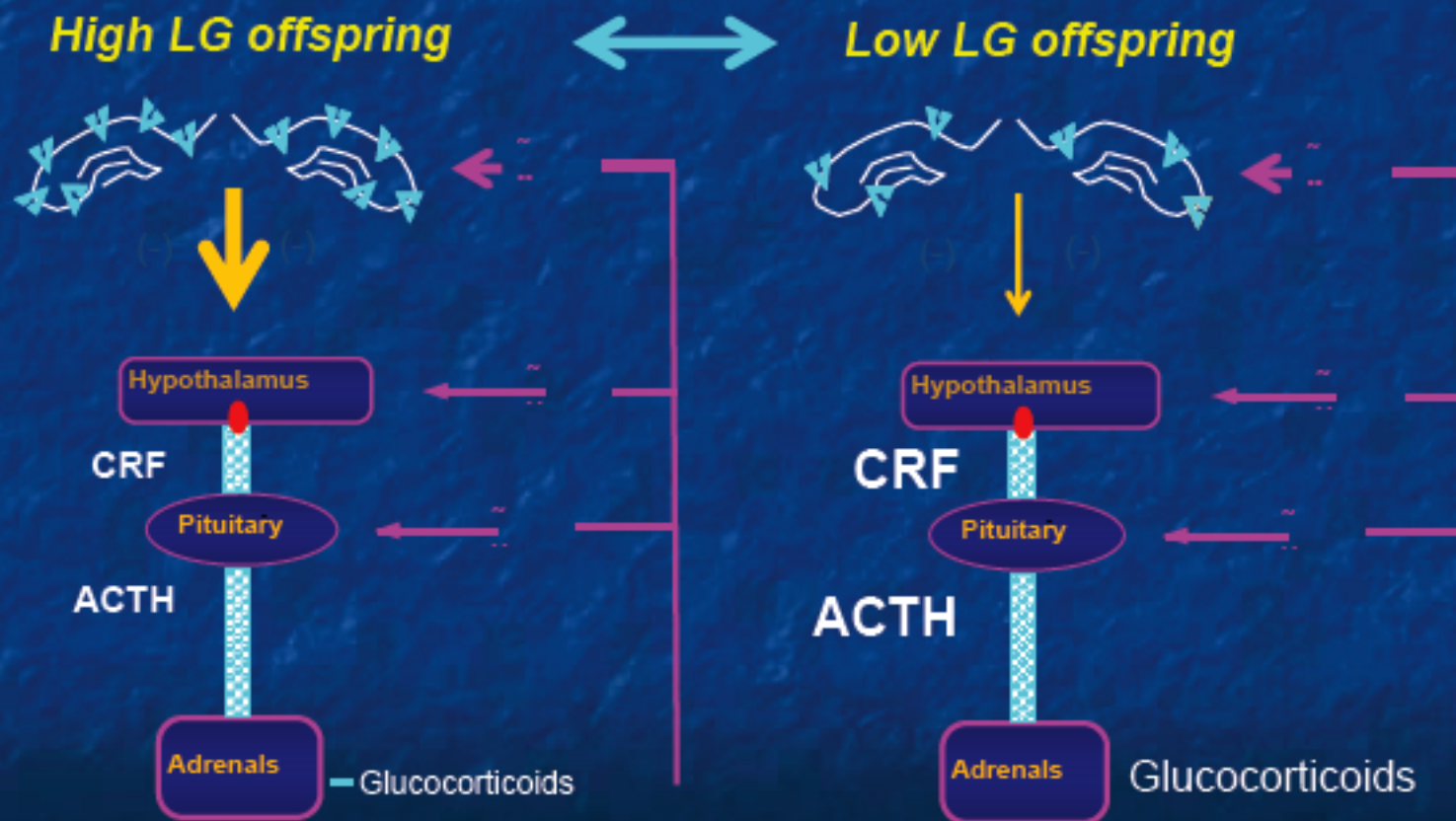
CH₃ CH₃ CH₃
CTACGTA CT CGGAATCTCG

Maternal licking/grooming



Source of tactile stimulation/nurturance: Enhances activity of endocrine systems (e.g., GH/IGF) that promote somatic growth, suppresses those (glucocorticoids) that inhibit growth

Cross-fostering reveals evidence for direct, postnatal effects of maternal care

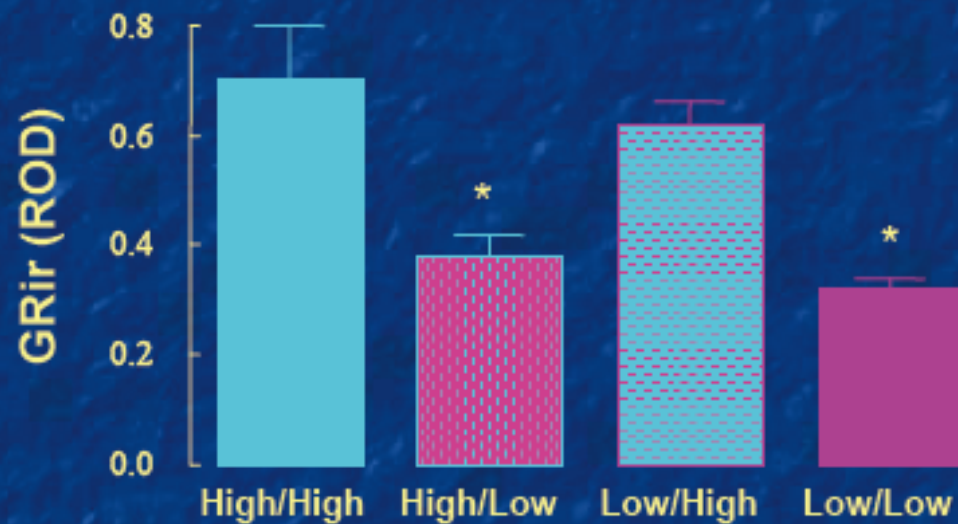


High LG

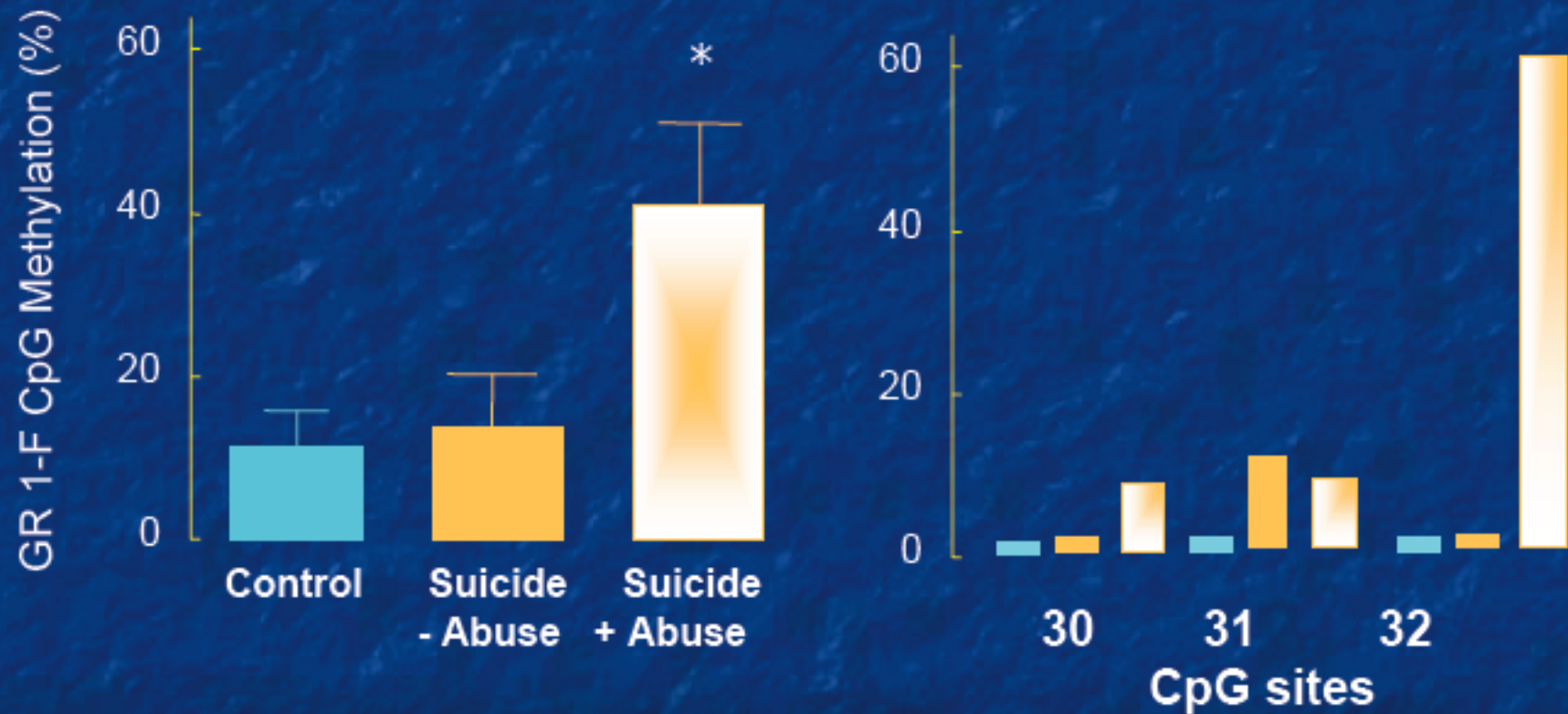
Low LG



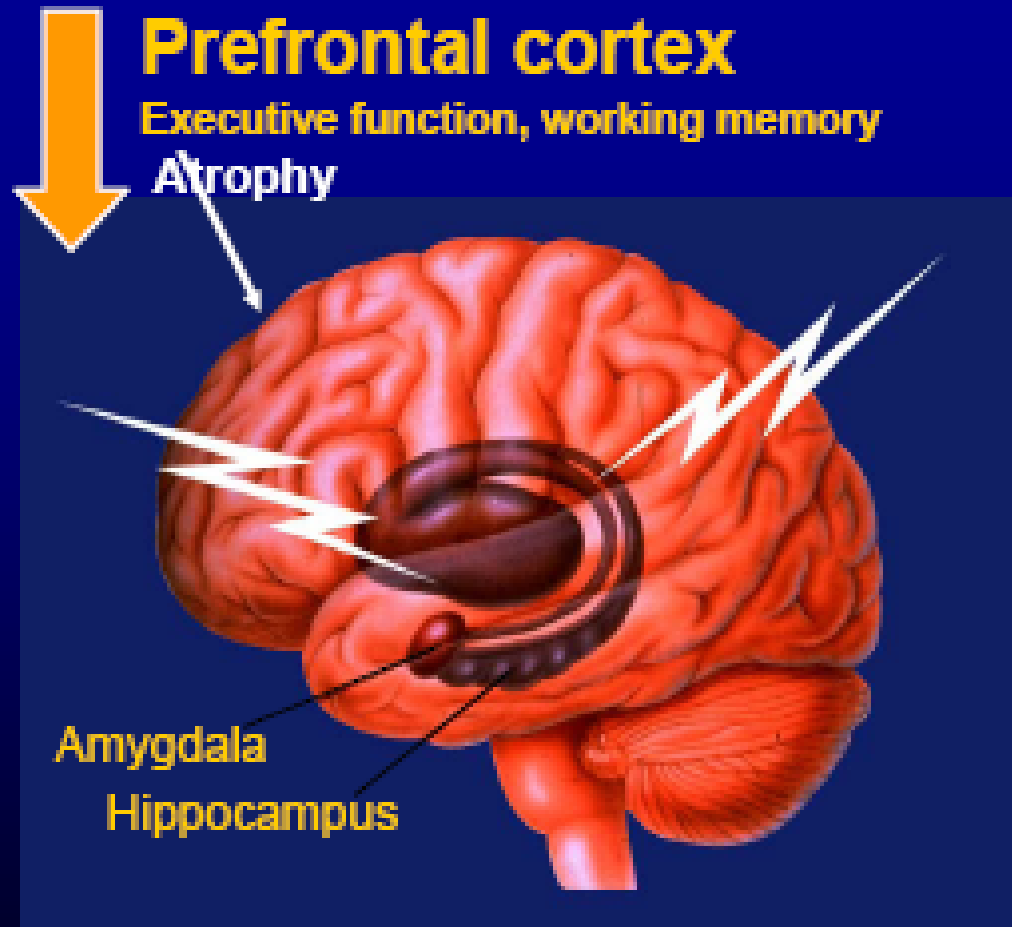
Cross-fostering reveals evidence for direct, postnatal effects of maternal care on hippocampal GR expression



Suicide vs abuse - CpG methylation



The Human Brain Under Stress: key brain regions



Prefrontal cortex

Executive function, working memory

Atrophy

Hippocampus

Contextual, episodic, spatial
memory

Atrophy

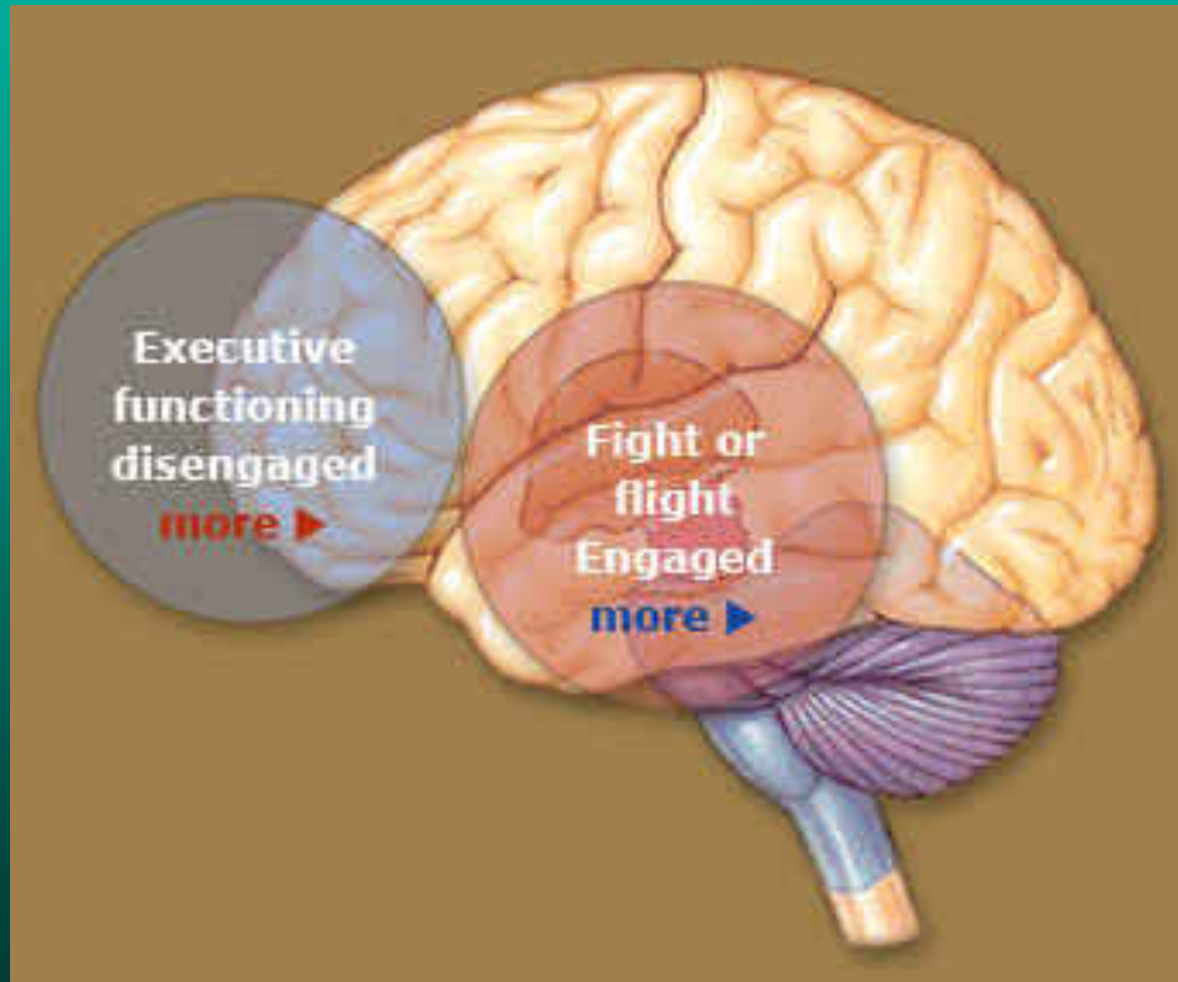
Amygdala

Emotion, fear, anxiety

Hypertrophy.

later atrophy

The stressed brain



The Dunedin cohort

- 1000 children recruited in late 1972/3
- At age 3, “at risk” children identified on the basis of chaotic circumstances, emotional behaviour, negativity and poor attentiveness
- As adults, those “at risk” were more likely to :
 - be unemployed
 - have criminal convictions (especially for violence)
 - been pregnant as a teenager
 - have a substance abuse problem
 - have high cortisol, CRP
 - exhibit signs of insulin resistance and metabolic syndrome

Doing something different?

- Early attendance at antenatal clinics
- Stop smoking while pregnant
- Teach young women – and, especially, men - nurturing behaviour
- Breastfeeding for at least 3 months
- Support for families during the early years
- Encourage reading, play, socialisation
- Measure milestones and do something when they are off track
- Act sensibly on all of the above!

Our current approach

- ◆ Focuses on problems, needs and deficiencies in a community such as deprivation, illness and health damaging behaviours. It designs services to fill the gaps and fix the problems. As a result, communities can feel disempowered. People become passive recipients of services rather than active agents in their own lives

Health Assets

- A health asset is any factor or resource which enhances the ability of individuals, communities and populations to maintain their health and sustain wellbeing. The assets can operate...as protective and promoting factors to buffer against life's stresses

Morgan and Ziglio 2009

Health Assets

- ◆ The most important asset any individual can have is a nurturing, supportive, stimulating childhood
- ◆ Achieving this for all children in Scotland will require us all to change attitudes and act with common sense and humanity if we are to deliver a shared vision of the future

The Asset Approach

- ◆ Identifies and makes viable the health assets in a community
- ◆ Sees citizens as co-producers of their own health rather than passive recipients of services
- ◆ Supports individuals health and wellbeing through enhancing skills for resilience, relationships, knowledge and self esteem
- ◆ Promotes community networks that can provide caring and empowerment

Health related
behaviours

Opportunity to escape
poverty, decent housing,
social networks, self esteem
and sense of control

Consistent parenting, safe,
nurturing early years,
supportive education

Health related behaviours

Worthwhile

Opportunity, decent housing, social networks, self esteem and sense of control

Manageable

Consistent parenting, safe, nurturing early years, supportive education

Comprehensible

Multiple phenotypes from a common genotype



Creating diversity in phenotype from a common genome

Attachment theory

- ◆ Ainsworth
 - Deep emotional connection that infant develops with primary caregiver
 - Reflects an “internal working model” expressing the infant’s expectations of parental behaviour in meaningful situations
 - Basis for development of later relationships
- ◆ Increasingly recognised as determinant of later emotional, cognitive and social outcomes

Doing something different

- ◆ Early attendance at antenatal clinics
- ◆ Stop smoking while pregnant
- ◆ Teach young women - and men - nurturing behaviour
- ◆ Breastfeeding for at least 3 months
- ◆ Support during the first year
- ◆ Measure milestones
- ◆ Act sensibly on all of the above!

