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Prevention is better than cure, right?

Obesity

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What do we mean by prevention?

Tertiary prevention

Secondary prevention

Primary prevention

Primordial prevention

Levels of prevention - 1

- **Primordial**
  - Building healthy environments
    - Targets the whole population & selected groups
- **Primary**
  - Preventing the emergence of risk factors
    - Targets the whole population & selected groups

Levels of prevention - 2

- **Secondary**
  - Treating risk factors
    - Targets patients
- **Tertiary**
  - Minimising risk in those with established disease
    - Targets patients
- Secondary & tertiary prevention approaches are the traditional focus of health care providers

Primordial prevention?

- Aims at avoiding the emergence of the social, economic and cultural patterns of living that are known to contribute to an elevated risk of disease.

- Examples:
  - Preventing war and conflict
  - Reducing global warming, improving global air quality
  - Obesity, and related non-communicable diseases

The problem of obesity

Obesity

- One of today's most blatantly visible – yet most neglected – public health problems
- The public health equivalent of climate change
- The Millennium Disease

WHO; www.who.int/nut/obs.htm; Laing & Rayner, Obesity Reviews 2007; www.iotf.org

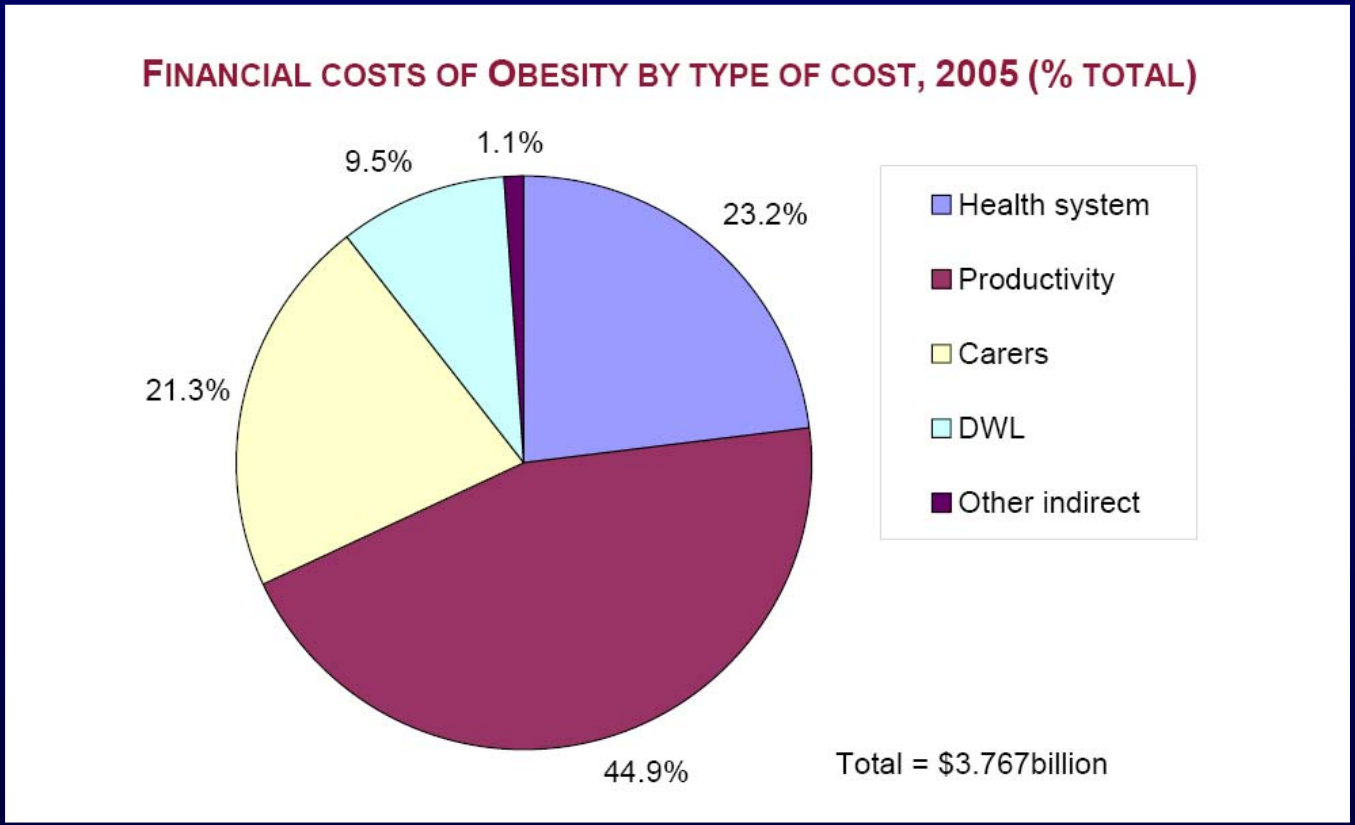
Some facts about obesity

- In Australia, overweight & obesity affects:
  - 2 in 3 men (1:5 obese)
  - 1 in 2 women (1:5 obese)
  - 1 in 4 children & adolescents

- Obesity increases the risk of other diseases:
  - >3 times increased risk of diabetes, sleep apnoea, gall bladder disease ...
  - 2-3 times increased risk of heart disease, cancer, osteoarthritis ...
  - 1-2 times increased risk of infertility, PCOS ...
  - !!!!!!!!!!!!

AusDiab Study, Cameron et al, MJA 2003; Booth et al, 2006; WHO 2004

Obesity is associated with high costs



Financial cost of obesity	$ 3.8 billion
Net cost of lost well-being	$17.2 billion
Total cost of obesity	$21.0 billion

The economic costs of obesity. Access Economics, 2006.

With so many people affected by obesity, and so many associated health, social and economic consequences……

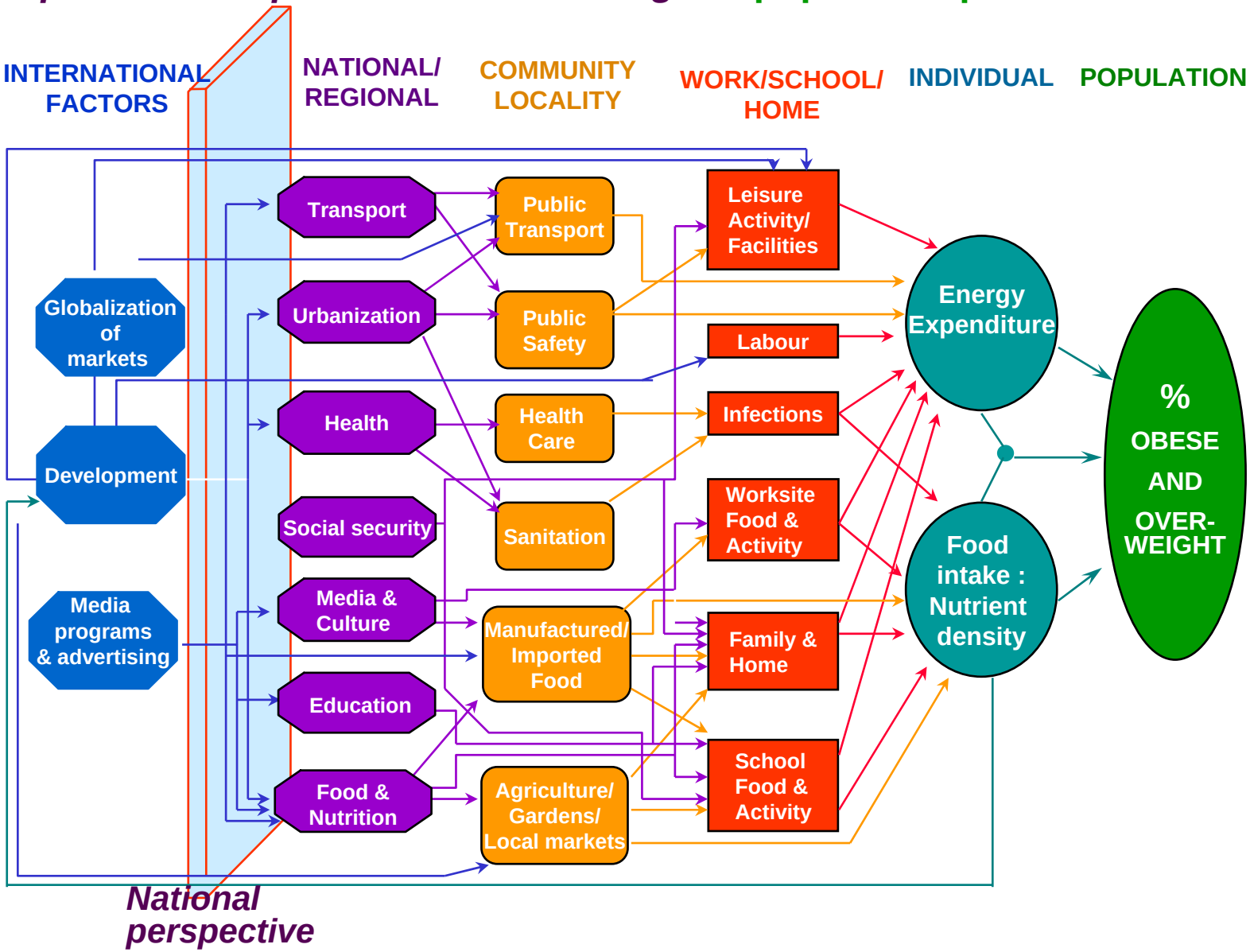
ALL

levels of prevention

are required!

Tackling obesity: the big picture

Societal policies and processes influencing the population prevalence of obesity



Modified from Ritenbaugh C, Kumanyika S, Morabia A, Jeffery R, Antipatis V. IOTF website 1999: http://www.iotf.org

Societal policies and processes influencing the population prevalence *of obesity*

Most of these factors lie well beyond the capacity of the individual, the family or even the Health Sector to modify

Hence the need for a trans-sectoral and whole-of-government approach to obesity prevention

Modified from Ritenbaugh C, Kumanyika S, Morabia A, Jeffery R, Antipatis V. IOTF website 1999: http://www.iotf.org

Potential primordial prevention interventions relevant to obesity

- Regulation of food marketing to children
- Urban planning that encourages active transport (walking, cycling) and discourages car use
- Agricultural priorities that favour healthy diets
- Taxes on less healthy foods

Primordial prevention approaches are vital to tackling obesity

BUT

Primordial prevention approaches are vital to tackling obesity

BUT

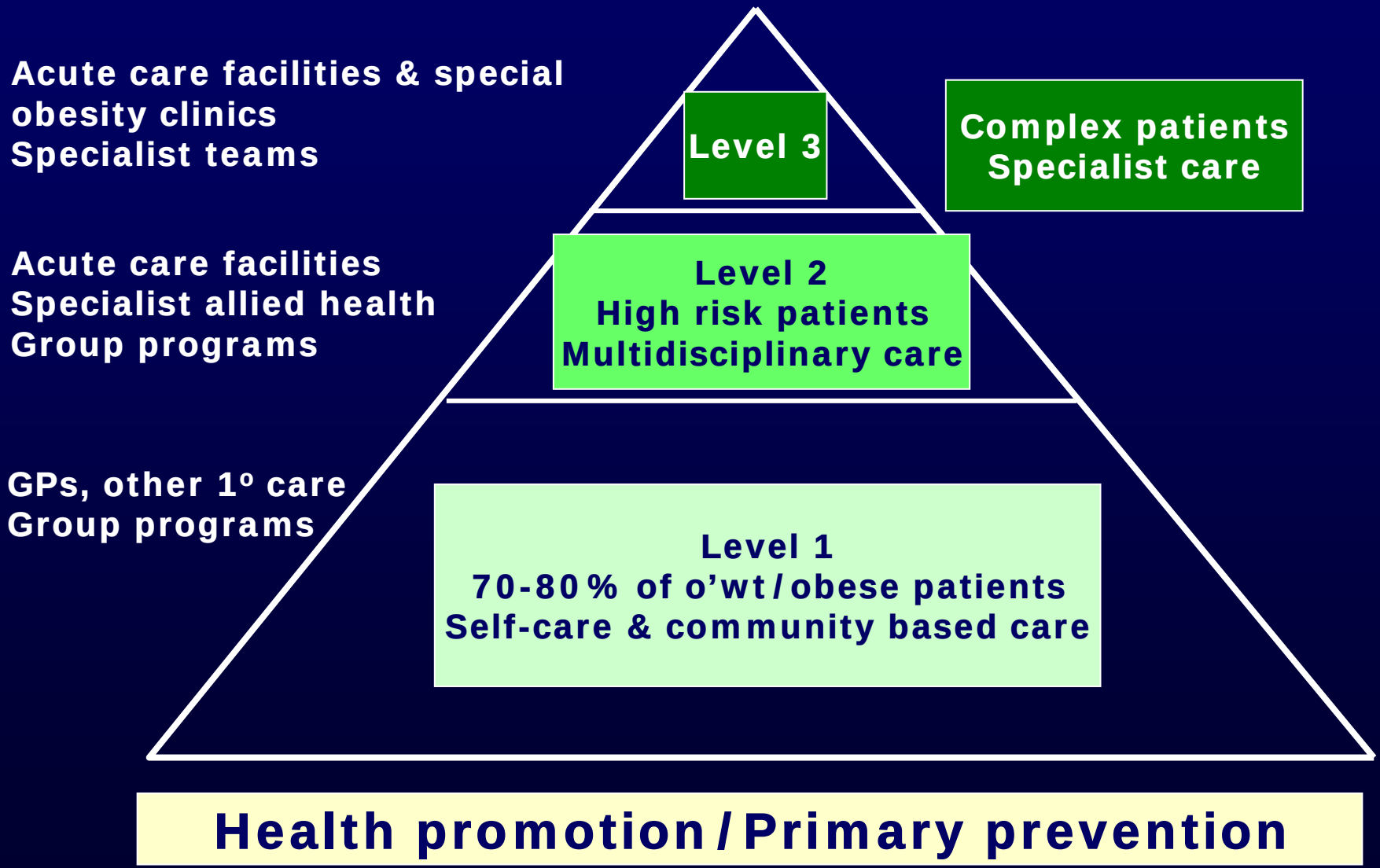
they are politically sensitive
they are initially expensive
they have a long lead-time to be effective

More downstream prevention approaches

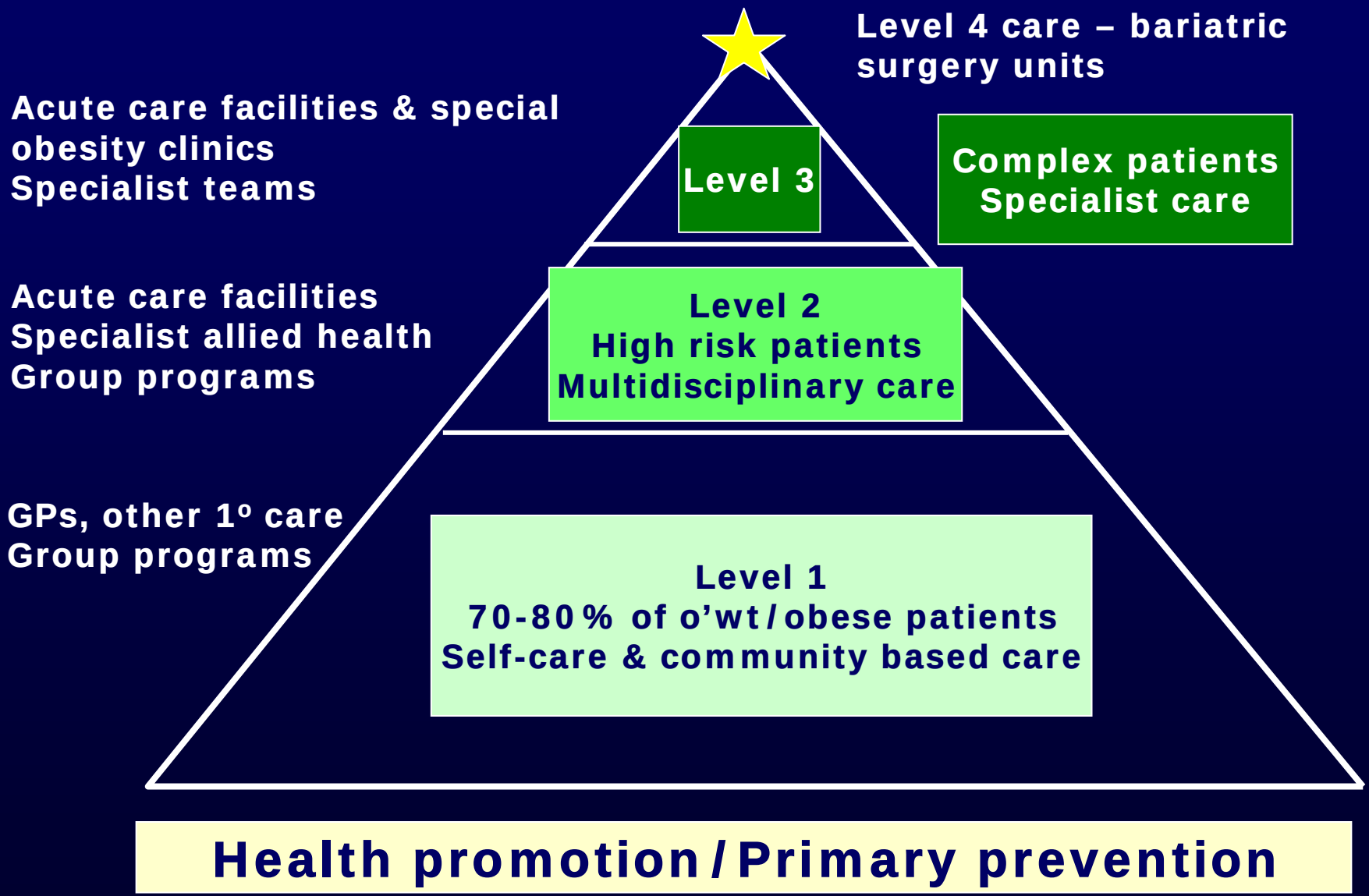
Challenges in dealing with obesity at the 2° and 3° prevention level

- Large numbers of affected people
- Chronic disease – no quick cure
- Different levels of severity require different types of therapy
- Very patchy availability of services
- Few health professionals are well trained in obesity management
- No coordinated model of care for treating obesity

Consider the chronic disease care model



Consider the chronic disease care model



Examples of successful secondary prevention interventions

- **Adults**
  - US Diabetes Prevention Program
  - Finnish Diabetes Prevention Study
  - → Moderate weight reduction
    Reduction in co-morbidities
    Cost-savings
    } at 2+ years
- **Children**
  - 2 recent NHMRC-funded trials in obese children* (HIKCUPS, PEACH; 6 months duration, 10 sessions)
  - → weight reduction at 12 month

*Golley et al, Pediatrics, 2007; Okeley et al, Proc ASSO ASM, 2007)

Issues for the health (& health insurance) sector to consider - 1

- Advocacy for whole-of-government, trans-sectoral primordial prevention of obesity

- Effective service delivery:
  - Targeting interventions according to age, sex, severity, location
  - Integrating obesity management into the management of other chronic diseases (eg diabetes, heart disease, arthritis ...)
  - Funding cost-effective treatment strategies eg group programs, phone-coaching, e-communication ....

Issues for the health (& health insurance) sector to consider - 2

- Health professional development
  - Training a wide range of health professionals in effective weight management

- Research & Development
  - Into effective therapies, models of care, health professional training .....

Obesity

A major health problem

Primordial prevention is needed

Effective treatment (secondary & tertiary prevention) of affected individuals is needed

EXTRA SLIDES from here on

Obesity – the questions to consider:

- How do we make the environmental gradient less steep?
- How do we support individuals and families so they can make healthy lifestyle choices?
- What models of care are needed to treat the large numbers of affected people?

How would you respond to a disease with the following characteristics? Take 1

- Affecting increasing numbers of the population – mainly adults, but increasingly seen even in children
- Associated with decreased quality of life, increased disability and shortened life expectancy
- Strong genetic predisposition
- Globally prevalent
- High economic burden
- A significant contributor to death from other major diseases
- Most health professionals are untrained in its management

!!!!!!!!!!

Action stations!

How would you respond to a disease with the following characteristics? Take 2

- Highly stigmatised
- Not perceived as a disease by much of the community and the medical profession
- The subject of media voyeurism and victim-blaming
- Affected individuals are seen as:
  - Less attractive
  - Weak-willed, morally vulnerable, lacking will-power and strength
  - Bringing the disease on themselves
  - Probably of lower value than those who are unaffected

Welcome to the issue of obesity!

Australian adults 1999-2000:
2 out of 3 men and 1 in 2 women overweight or obese
… and 1 in 5 obese

	Overw't & obesity (BMI >25 kg/m^2)	Obesity (BMI >30 kg/m^2)
Adult males	67.5%	19.3%
Adult females	52.2%	22.2%

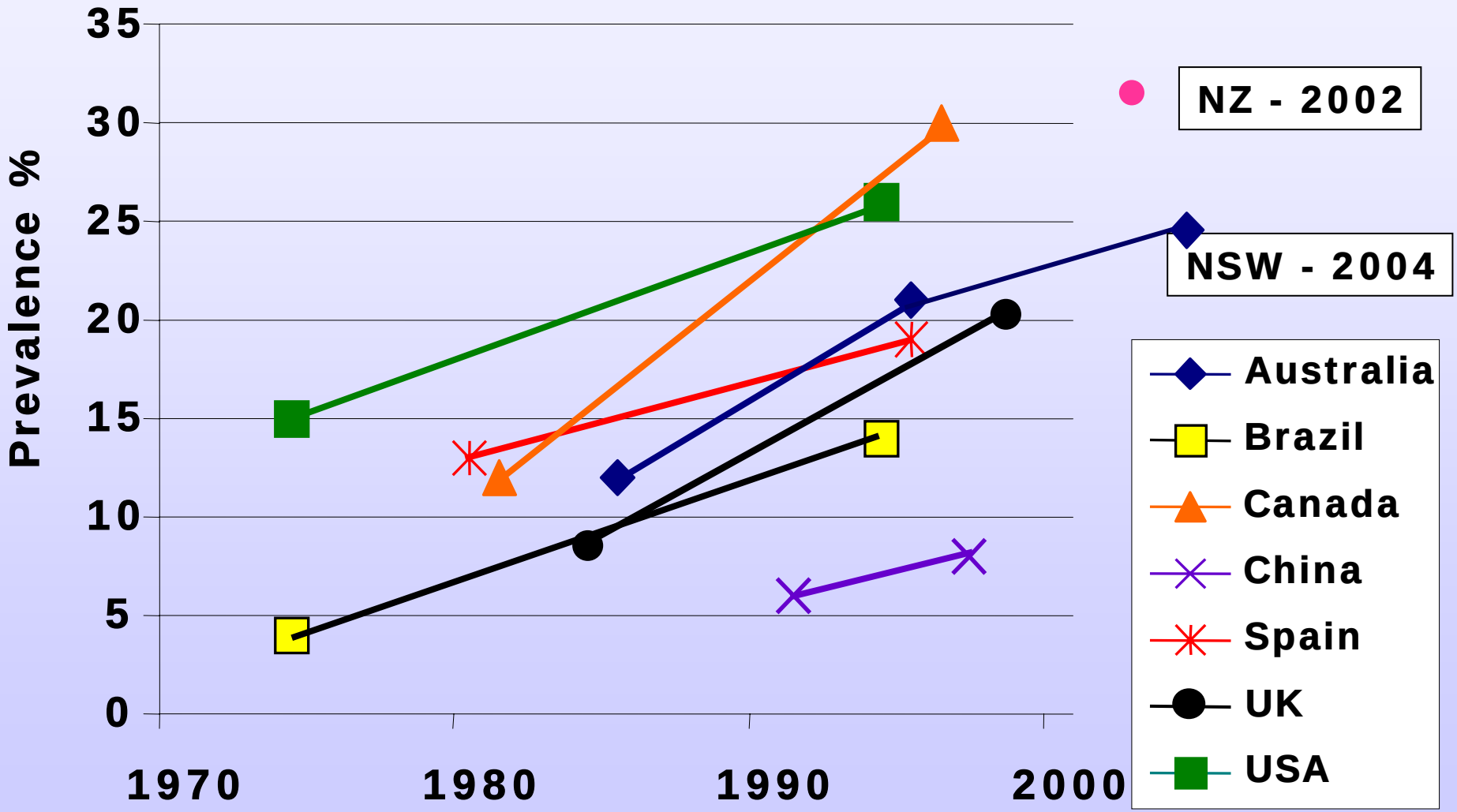
AusDiab Study: Cameron et al, MJA 2003
Measured heights & weights; adults >25 y

Risks of obesity in Caucasians

Relative risk	Disease	
Greatly increased (RR >>3)	Type 2 diabetes	Dyslipidaemia
	Insulin resistance	Sleep apnoea
	Gall bladder disease	
Moderately increased (RR 2–3)	Heart disease	Hypertension
	Cancer	Osteoarthritis
	Gout	
Slightly increased (RR 1-2)	Infertility	Anaesthetic risk
	Polycystic ovary syndrome	

RR = Relative risk
Updated from “Obesity: Preventing and managing the global epidemic”. WHO, 2004

Trends in combined overweight & obesity in school-aged children since 1970



Lobstein et al. Obesity Reviews 2004; NZ Children's Nutrition Survey 2002; NSW Schools Physical Activity & Nutrition Survey, Booth et al, 2006

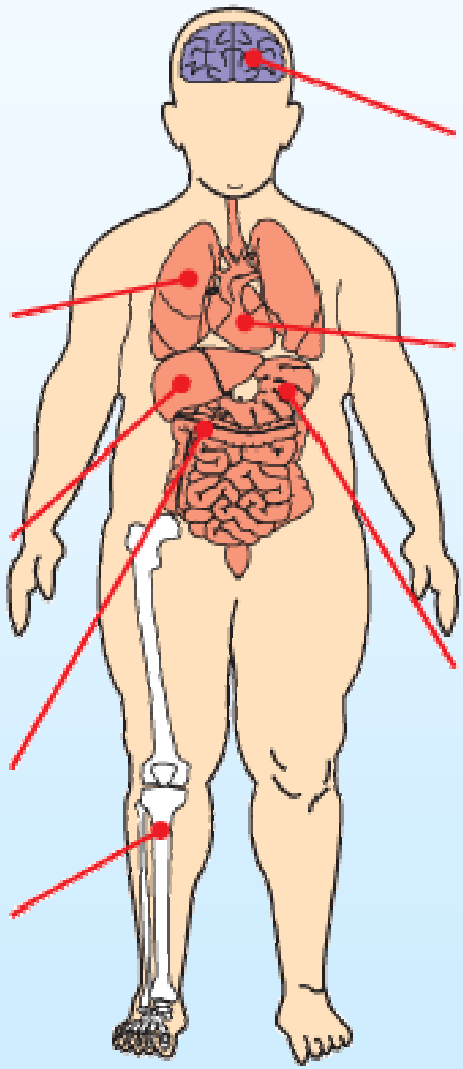
Trends in combined overweight & obesity in school-aged children since 1970

1 in 4 Australia children & adolescents are overweight or obese

Prevalence rates are increasing

Lobstein et al. Obesity Reviews 2004; NZ Children's Nutrition Survey 2002; NSW Schools Physical Activity & Nutrition Survey, Booth et al, 2006

Complications of obesity in children and adolescents



Psychosocial
Eating disorders
Poor self-esteem
Body image disorder
Social isolation and stigmatisation
Depression

Pulmonary
Exercise intolerance
Obstructive sleep apnoea
Asthma

Gastrointestinal
Gallstones
Gastro-oesophageal reflux
Non-alcoholic fatty liver disorder

Renal
Glomerulosclerosis

Musculoskeletal
Ankle sprains
Flat feet
Tibia vara
Slipped capital femoral epiphysis
Forearm fracture

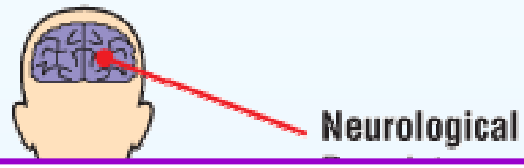
Neurological
Pseudotumour cerebri
(idiopathic intracranial hypertension)

Cardiovascular
Hypertension
Dyslipidaemia
Coagulopathy
Chronic inflammation
Endothelial dysfunction

Endocrine
Insulin resistance
Impaired fasting glucose or glucose intolerance
Type 2 diabetes
Precocious puberty
Menstrual irregularities
Polycystic ovary syndrome (females)

Source: Ebbeling et al, Lancet 2002

Complications of obesity in children and adolescents



What are the health & economic consequences of increased numbers of adolescents entering adulthood with:

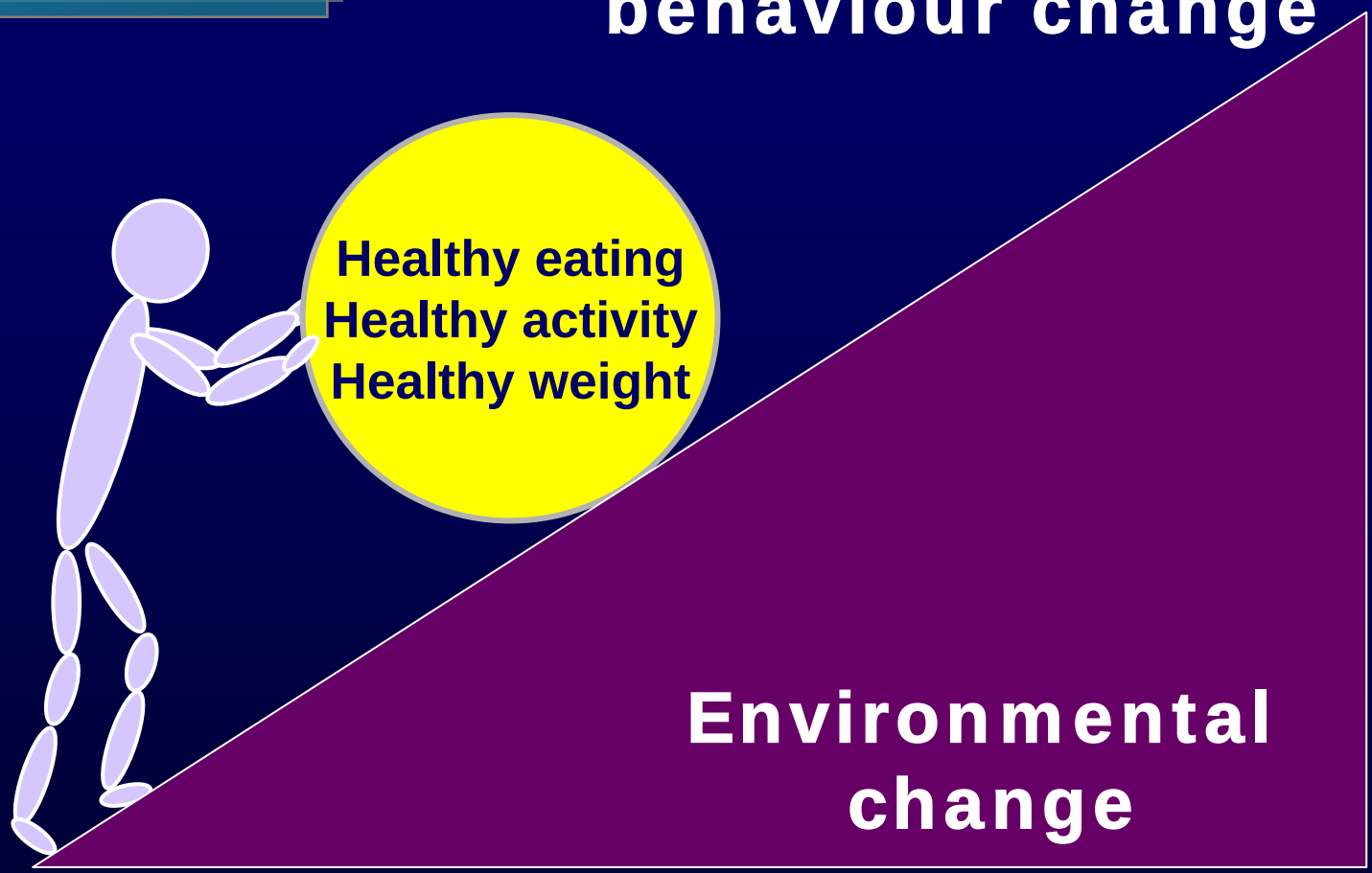
Established obesity
Established type 2 diabetes
Risk factors for heart disease & diabetes
Other co-morbidities?

Slipped capital femoral epiphysis
Forearm fracture

Source: Ebbeling et al, Lancet 2002

Obesity prevention

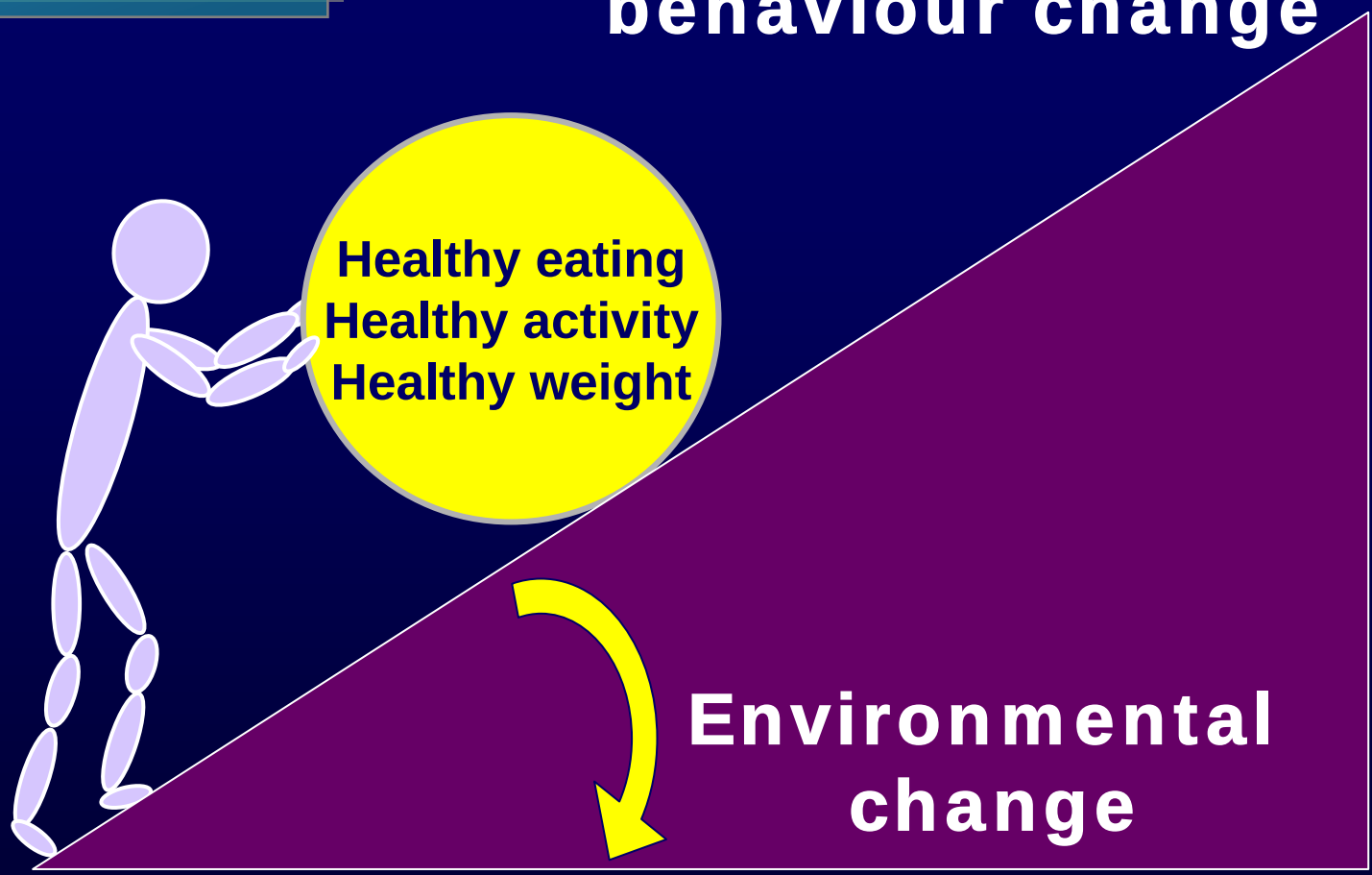
Complementary approaches to prevention



The environmental gradient is steep

Adapted from Puska P, 2004

Complementary approaches to prevention



So, changing the gradient ...

Adapted from Puska P, 2004

Complementary approaches to prevention

Individual behaviour change

... will make it easier to change behaviour

Adapted from Puska P, 2004