

OBESITY

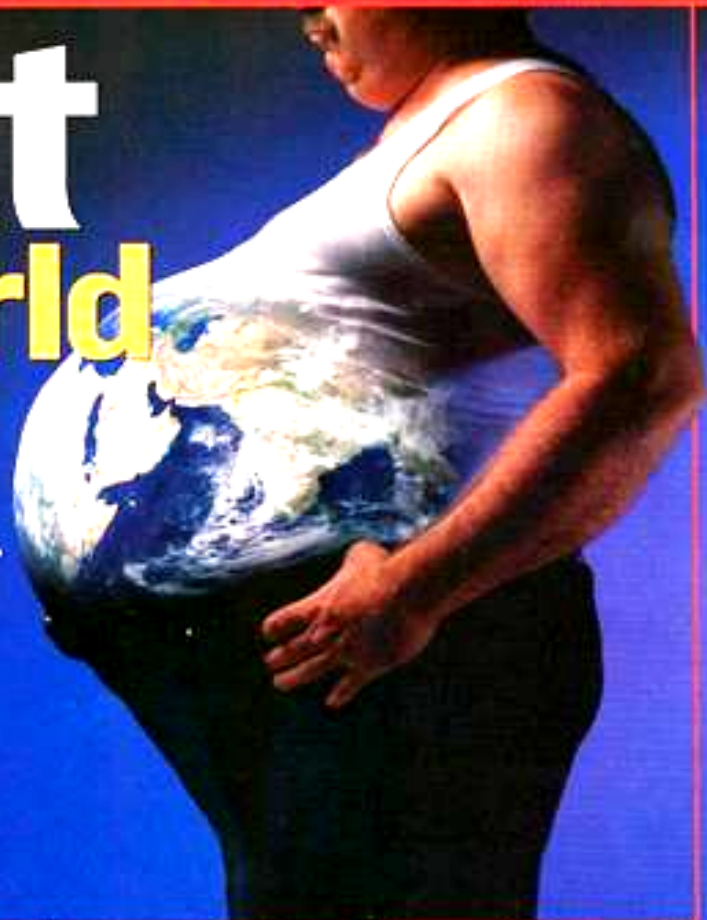
MY QAEDA CLASSMATE • GERMANY'S CLASS PROBLEM

Newsweek

August 11, 2003

NewsweekInternational.com

Fat World

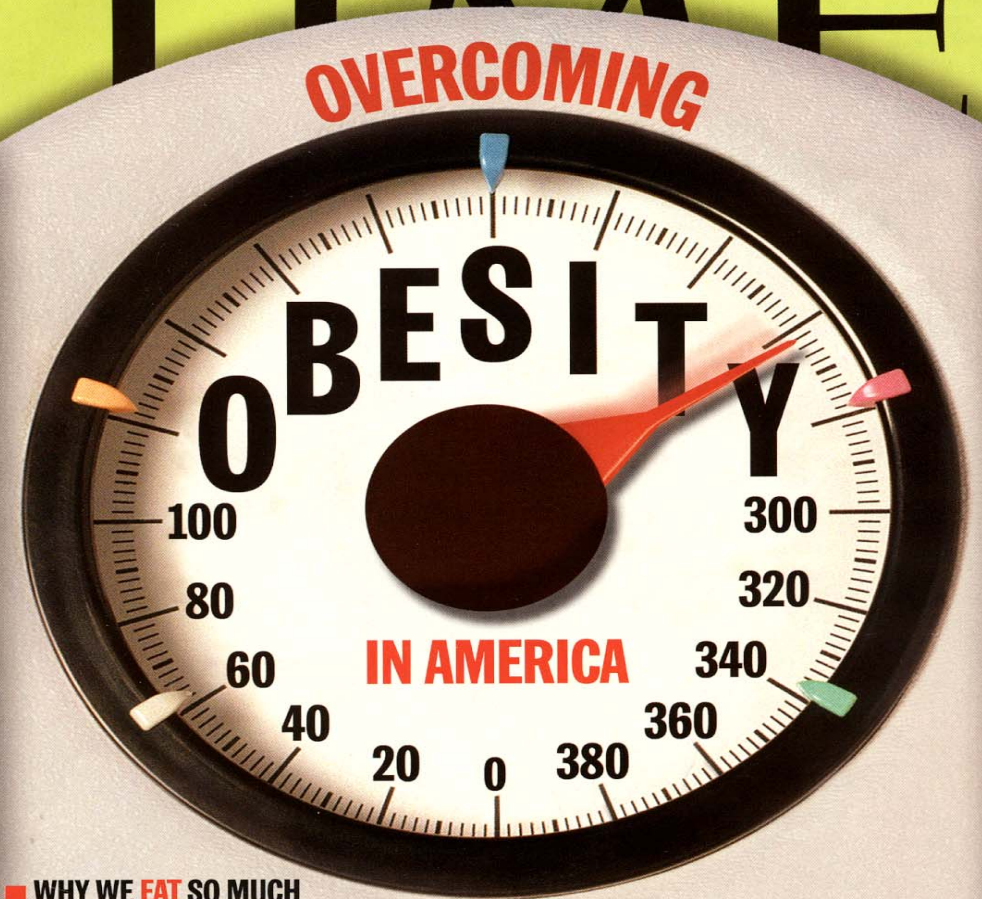


We're Eating More Junk And Getting Less Exercise.
Obesity Is The Globe's Newest Epidemic.

JUNE 7, 2004

SPECIAL ISSUE

TIME

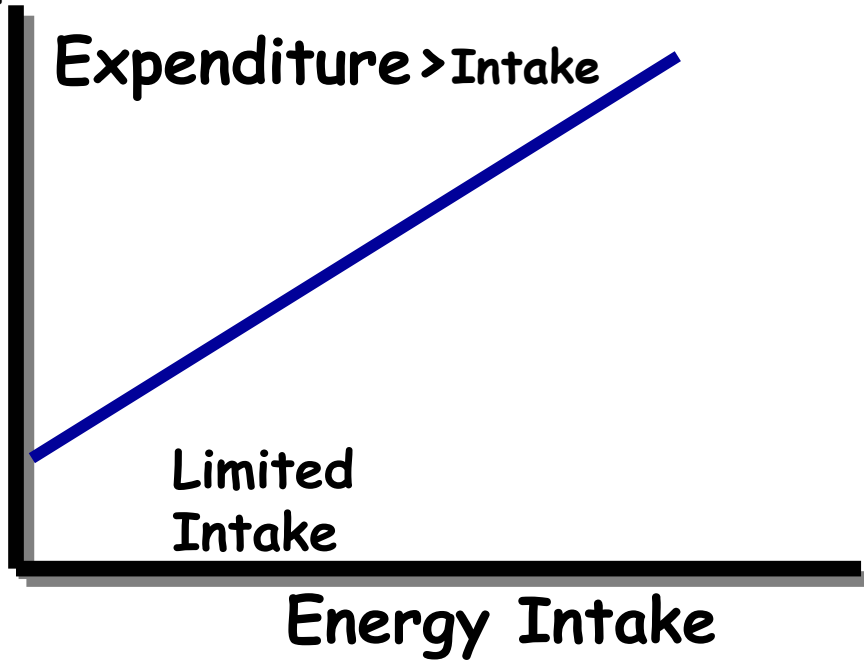


- WHY WE EAT SO MUCH
- THE ANTI-FAT CRUSADERS
- WEIGHT-LOSS HEROES
- WHAT TO TELL YOUR KIDS
- A GUIDE TO DIET BOOKS



Primitive Life

Energy Expenditure

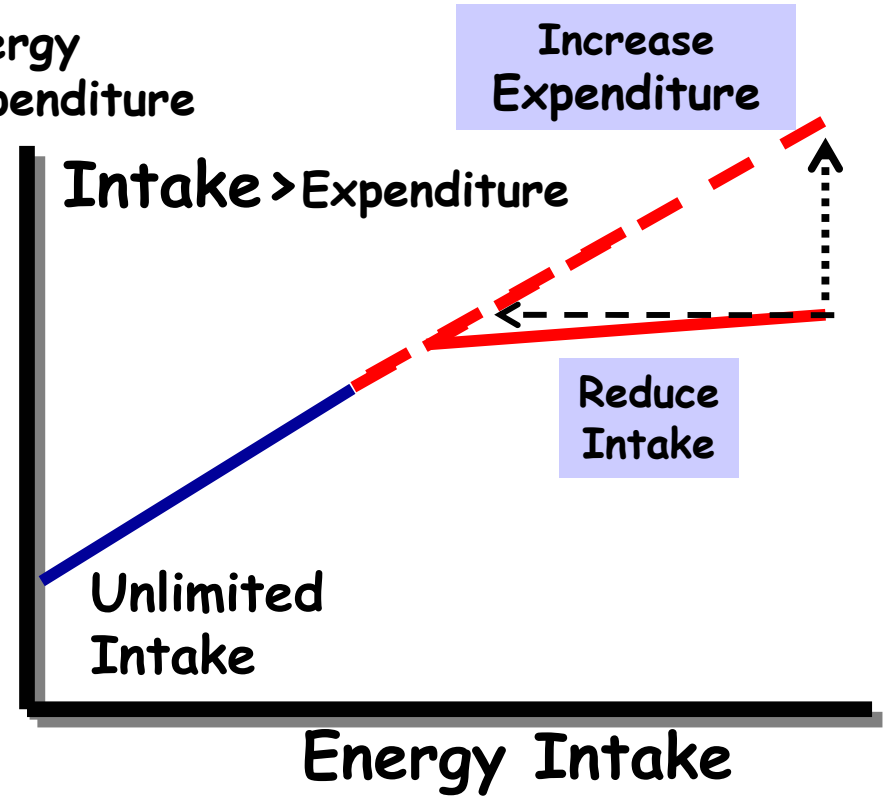


Low Energy Stores
(body fat)



Modern Life

Energy Expenditure



Increase in Energy Stores
Energy balance established
at unhealthy weight.

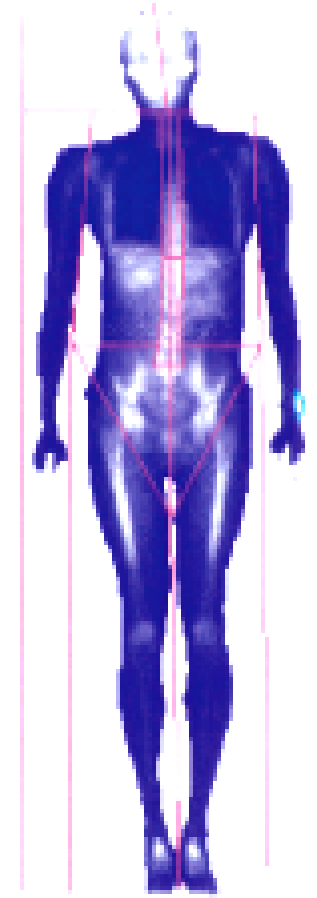




BMI and % body fat

22.3

22.3



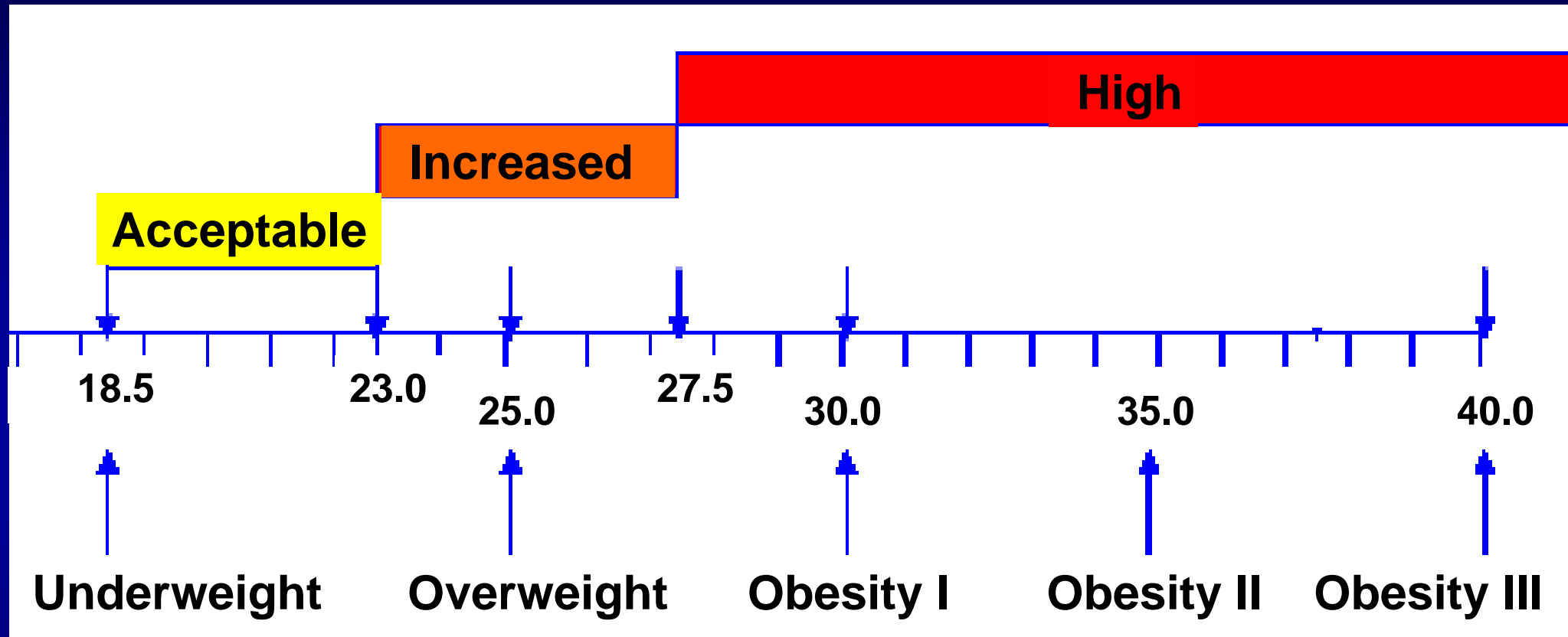
Body fat

9.1 %

21.2 %

Source: THE LANCET • Vol
363 • January 10, 2004 •
www.thelancet.com

WHO recommended BMI cut offs for Asians 2004



WHO international classification retained with new subcategories:

BMI < 18.5 – underweight

BMI 18.5-23 – increasing but acceptable risk

BMI 23–27.5 kg/m² – increased

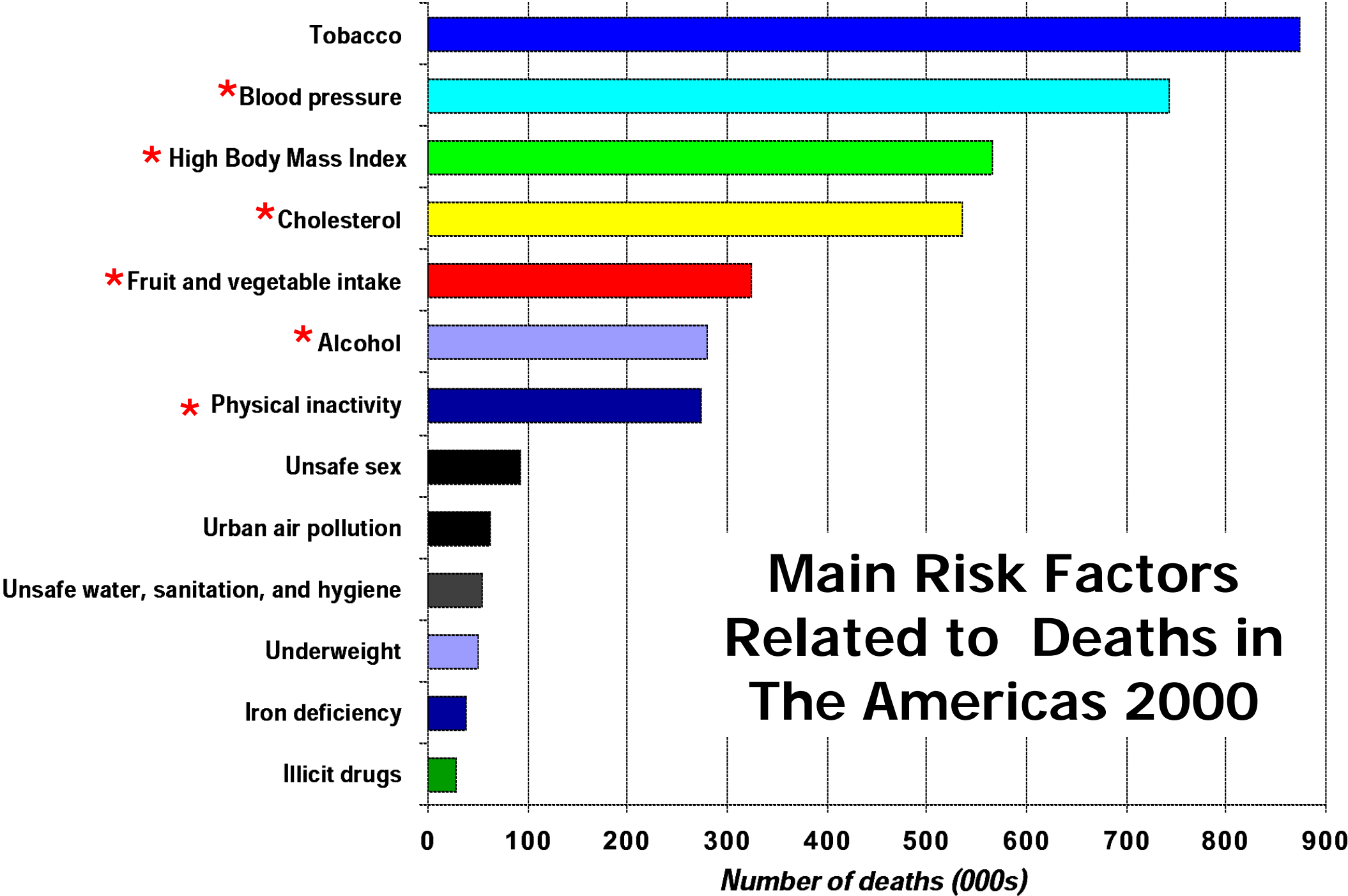
BMI > 27.5 kg/m² - high risk.

Relative risks associated with obesity

Greatly increased (>3)	Moderately increased (2-3)	Slightly increased (1-2)
NIDDM	CHD	Cancer breast cancer (in post menopausal women), endometrial, colon
Gallbladder disease	Hypertension	Reproductive hormone abnormalities
Dislipidemias	Osteoarthritis	Polycystic ovary syndrome
Insulin Resistance	Hyperuricemia and gout	Impaired fertility
Breathlessness		Low back pain Anaesthesia complications
Sleep apnoea	WHO TRS 894 Obesity: Preventing and Managing the Global Epidemic	Fetal defects in maternal obesity

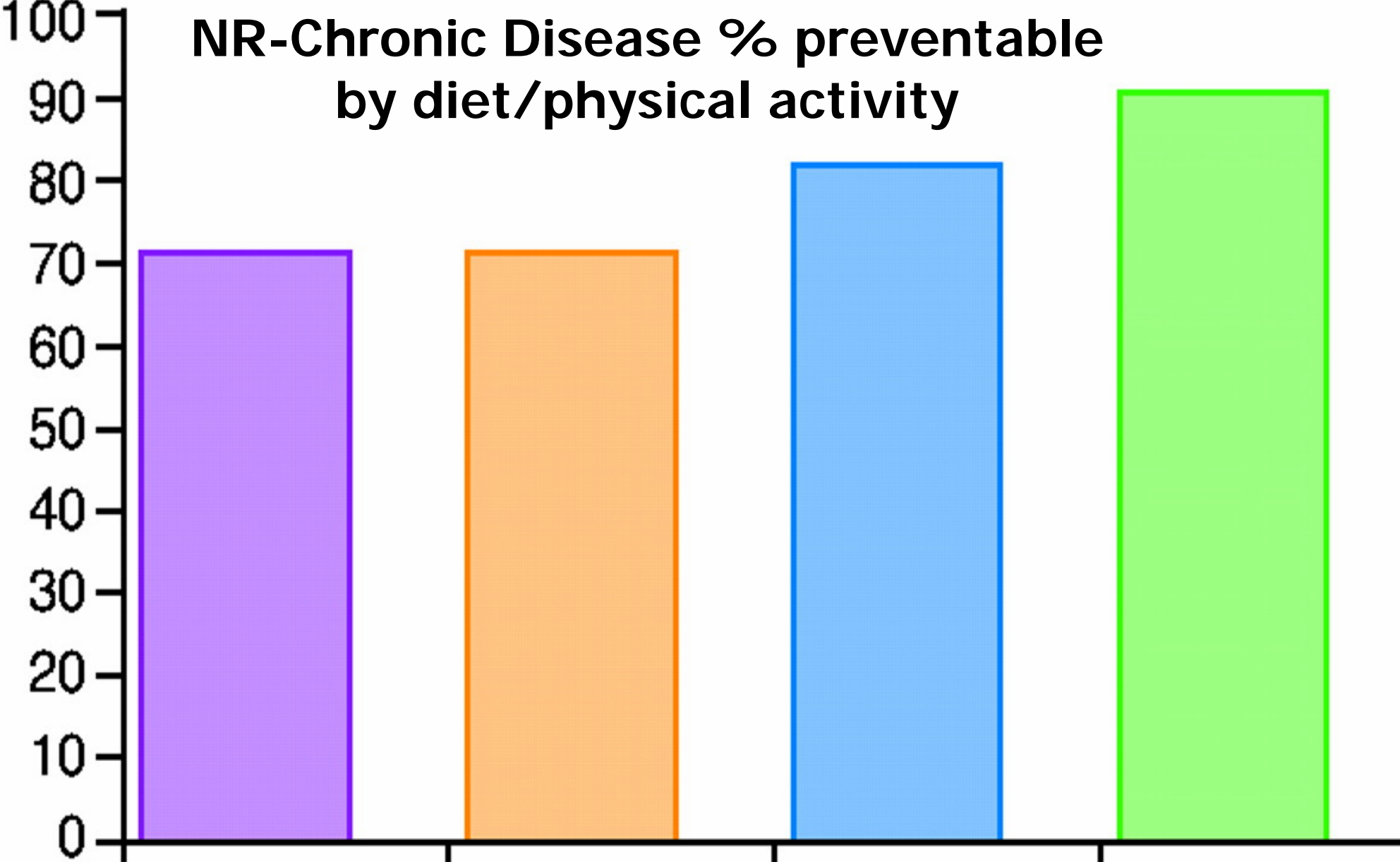
Definitions used

- Blood pressure (SBP \geq 115 mmHg)
- Cholesterol (3.8 mmol/l; 147 mg/dl)
- High body Mass Index (\geq 21 kg/ht²)
- Low fruit and vegetable intake (600 gms per day)
- Physical Inactivity (\leq 2.5 hours per week; 400 kJ/week)
- Tobacco Use (none)
- Alcohol Use (none)



NR-Chronic Disease % preventable by diet/physical activity

Percent avoidable



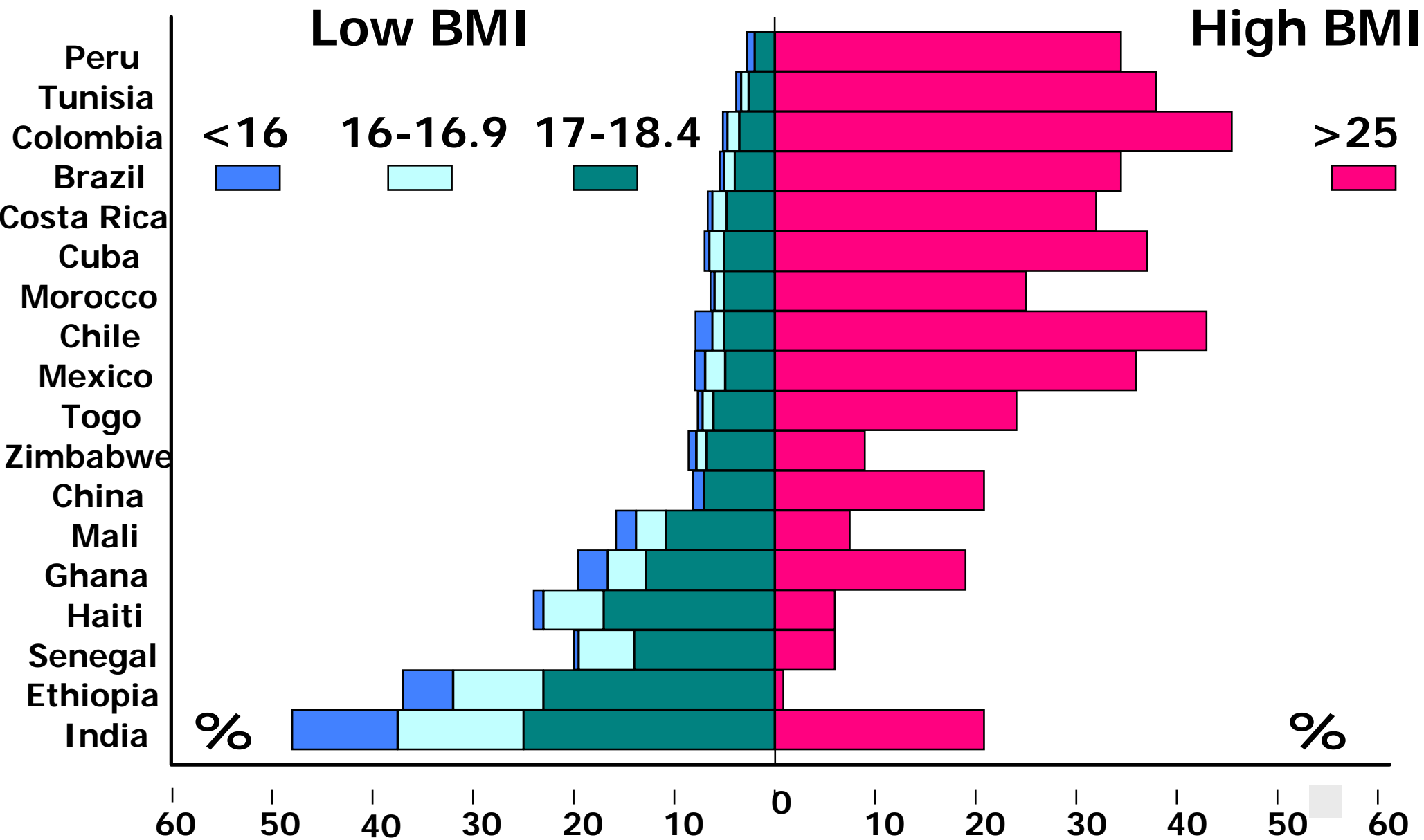
Colon cancer

Stroke

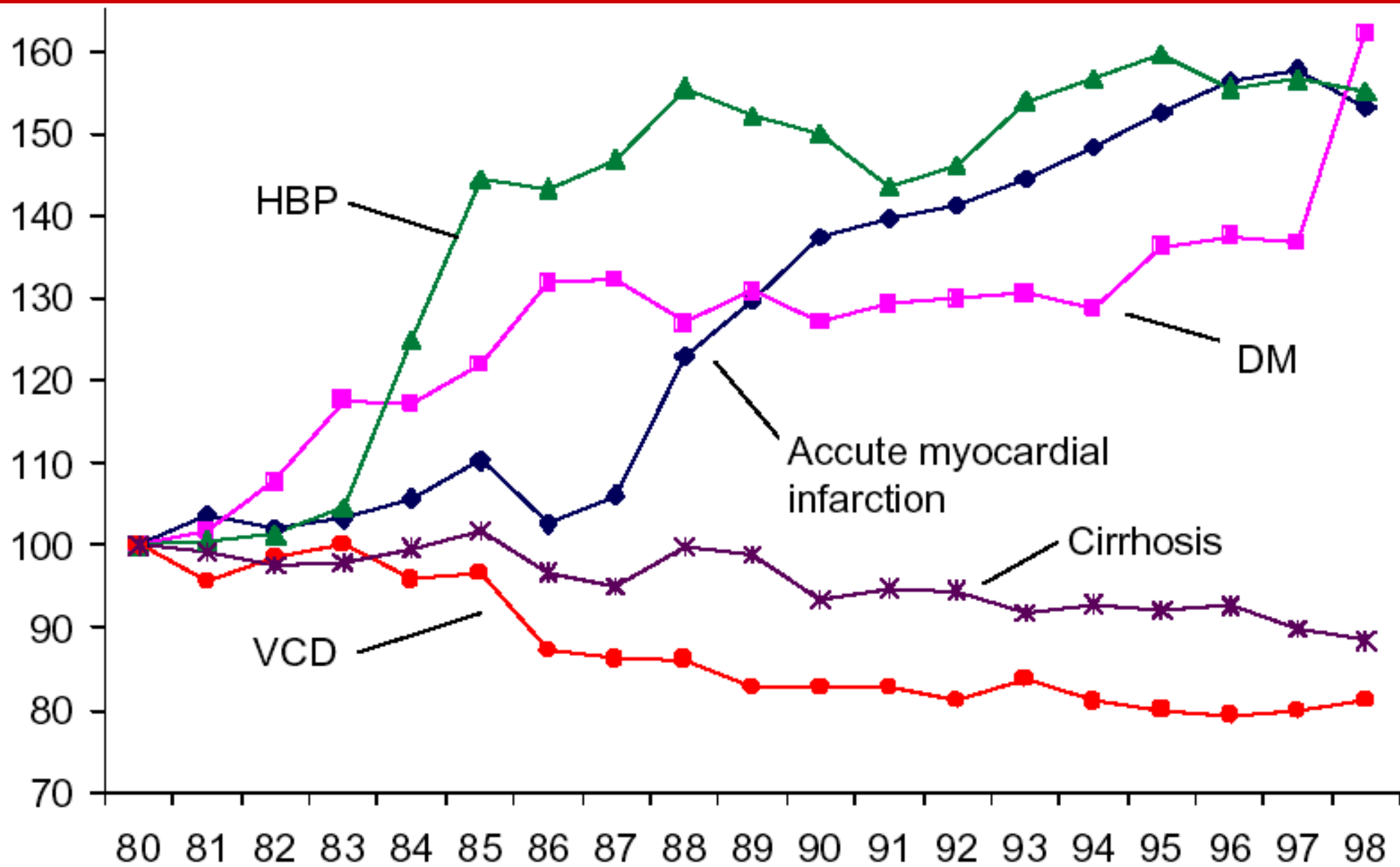
Coronary heart disease

Type 2 diabetes

Body Mass Index of Adult Population



NCD Adjusted Deaths in Mexico (45-64 years of age)



LABORATORY

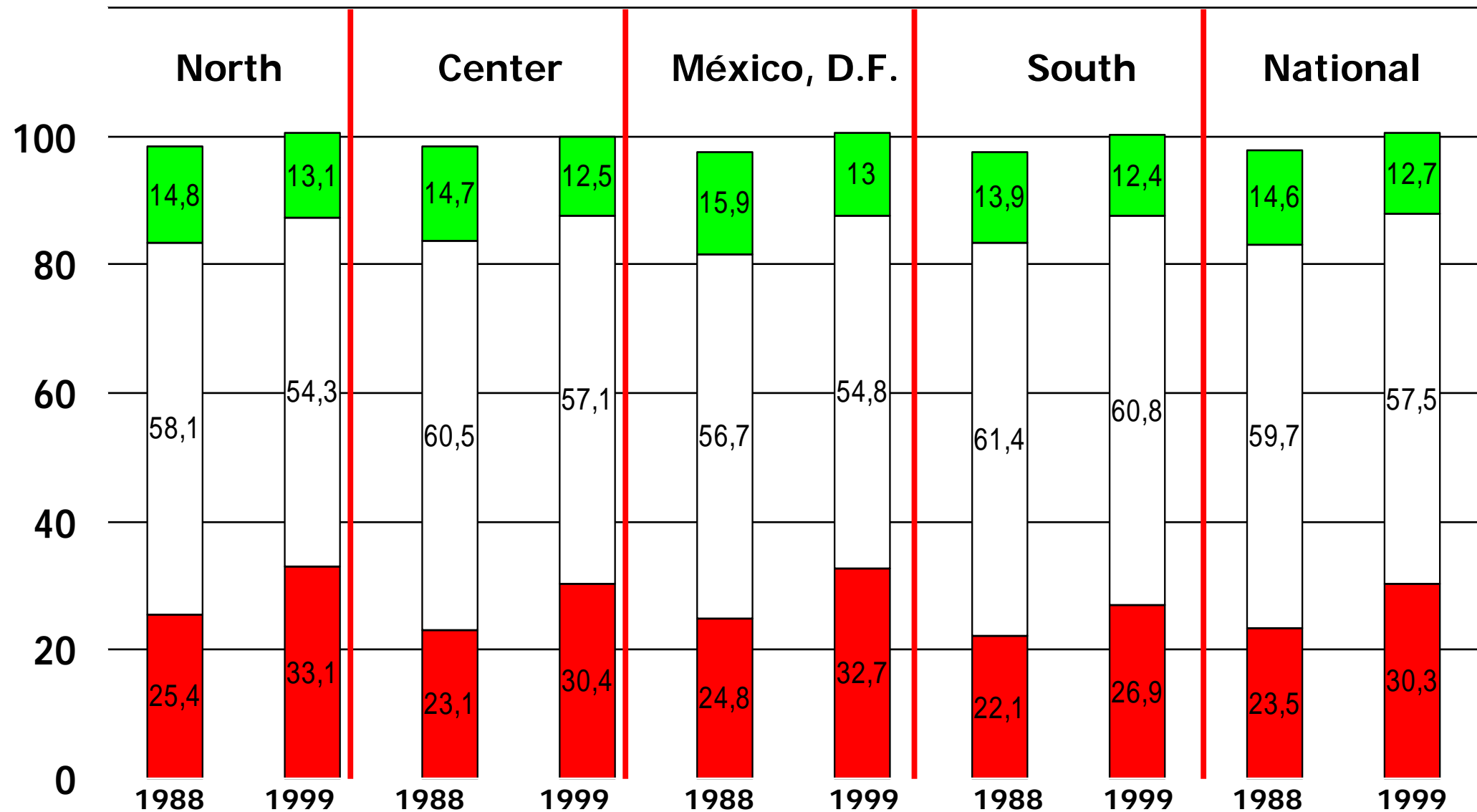


"EUREKA !... I'VE DISCOVERED THE GENE THAT MAKES US THINK THAT EVERYTHING'S DETERMINED BY GENES !"

Changes in Macronutrient Intake in Mexico 88/99

■ Fat □ CHO ■ Protein

% Calories



Basic Causes

Community empowerment
demand for: safe & healthy
foods, active life

Public and private sector
response to people's health
demands

Government response in
protection of public interest

International and National
framework policies: health,
education, agriculture,
economic, urbanization,
recreation, transport, trade

Legislative framework: to
promote, support and protect
right to safe and nutritious
foods.

Underlying Factors

Access to safe and healthy
foods (quantity and quality)

Balancing Energy Intake
and expenditure

Factors affecting food and
PA supply chain

Policies affecting marketing,
advertisement, subsidies

Urban space and facilities
for active life (household
school & workplace)

Psycho-social determinants
of food intake and PA

Nutrition Related Susceptibility (life-course exposure)

Energy Balance
Energy dense diets (*fat & sugar*)
Physical Activity
Appetite & food intake Control
Pre & postnatal growth
Macronutrient quality
Micronutrient balance
Hormonal response to diet

Epigenetic

Receptors

**Adipocyte Cell
Growth**

genes

Hormones

OBESITY

Genetic

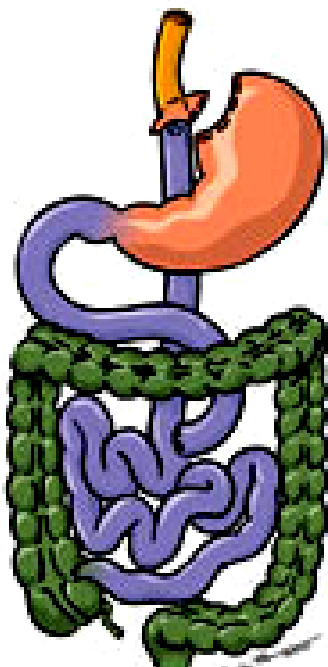
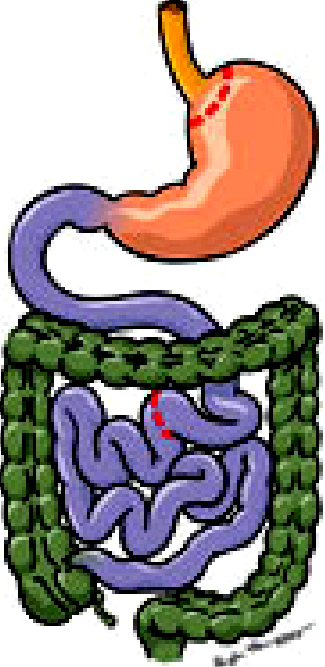
Monogenic

⋮

Polygenic

potential for future effectiveness

present efforts



Before Surgery

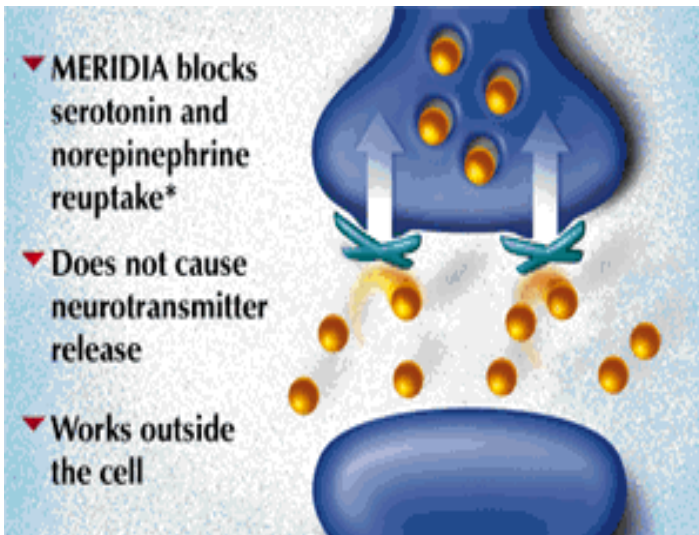
After Surgery



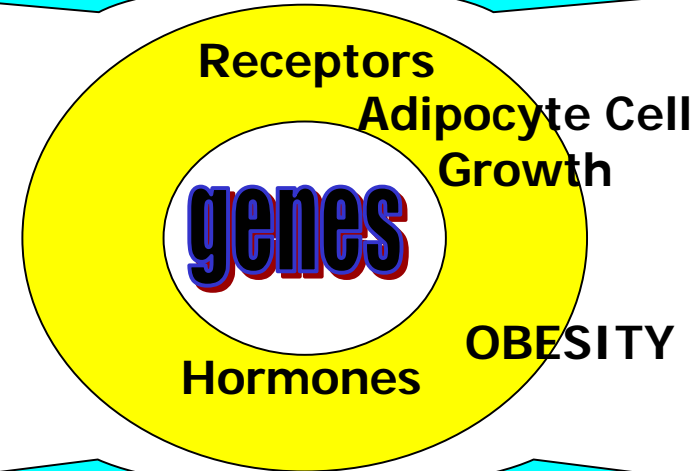
Nutrition Related Susceptibility (life-course exposure)

- Energy Balance
- Energy dense diets
- Physical Activity
- Appetite & food intake Control
- Pre & postnatal growth
- Macronutrient quality
- Micronutrient balance
- Hormonal response to diet

Epigenetic



- ▼ MERIDIA blocks serotonin and norepinephrine reuptake*
- ▼ Does not cause neurotransmitter release
- ▼ Works outside the cell



Genetic

Monogenic ∴ Polygenic



**Joint WHO/FAO expert consultation
on diet, nutrition and the
prevention of chronic diseases**



Geneva, Switzerland
28 January – 1 February 2002

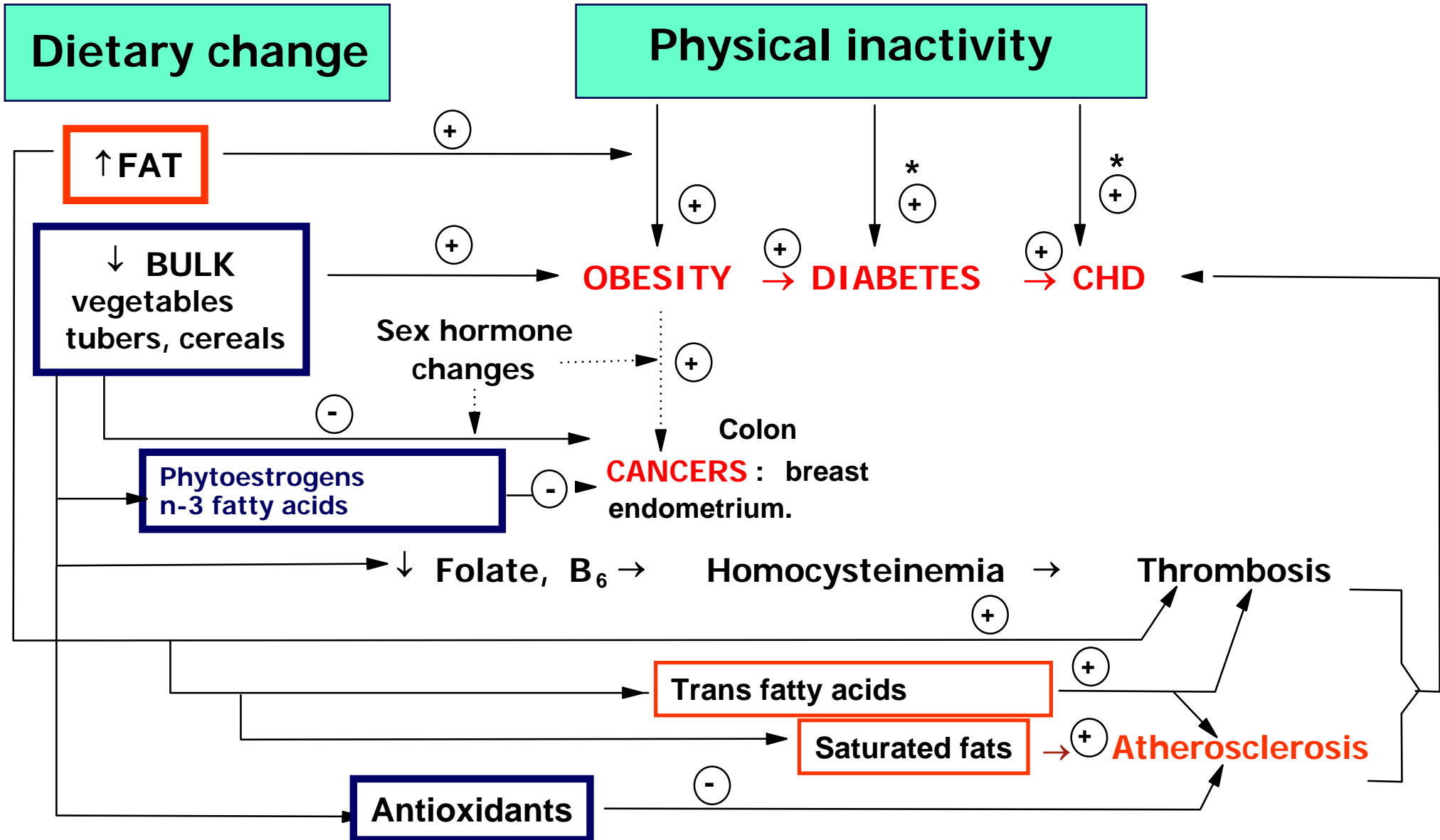
Diet, nutrition and the prevention of chronic diseases

Report of the Joint WHO/FAO expert consultation



www.who.int/hpr/nutrition/ExpertConsultationGE.htm

The interaction of physical inactivity and dietary change on prevalence of obesity and other diet related NCDs



Principal nutrient/food changes

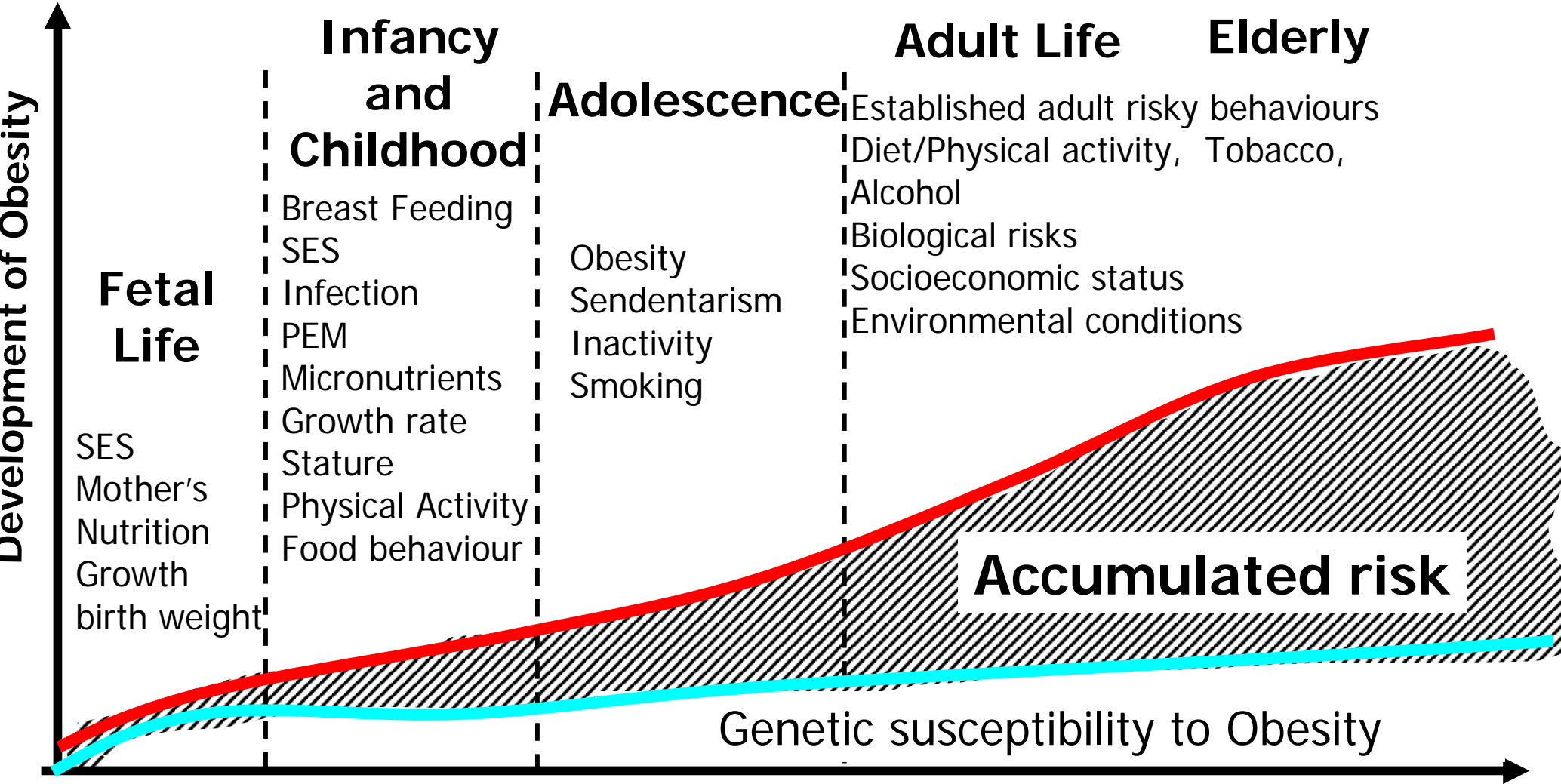
Reduce

- Total fat
- Saturated Fats (C14,C16)
- Trans fatty acids
- Free sugars
- Refined starches
- Sodium/salt
- Preserved meats

Increase

- Vegetables,
- Fruits, legumes
- Fibre/NSP
- ω - 3 fatty ac (LNA,EPA,DHA)
- Iron/iodine
- Zinc/folate?
- PHYSICAL ACTIVITY

Obesity prevention : a Life Course Approach



Age

Source: WHO/NMH/NPH/ALC, 2001

IOTF 2004

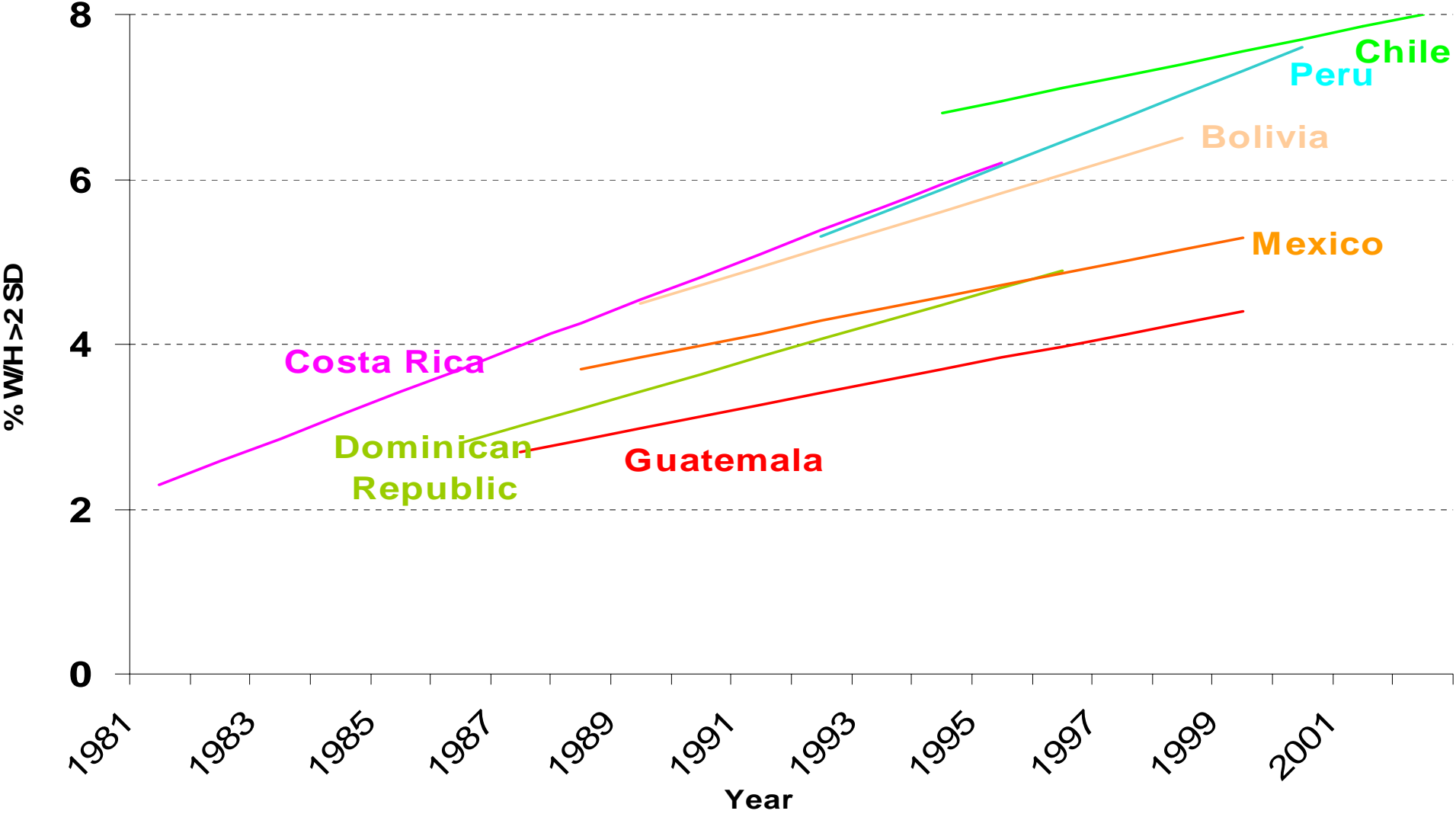
Obesity in children and young people: a crisis in public health

- 10% of world's children affected
- Rates rising in developing countries
- Need for urgent action to develop effective prevention throughout the world

Report to the
World Health Organization



Prevalence and trends of overweight in preschool children from LA region

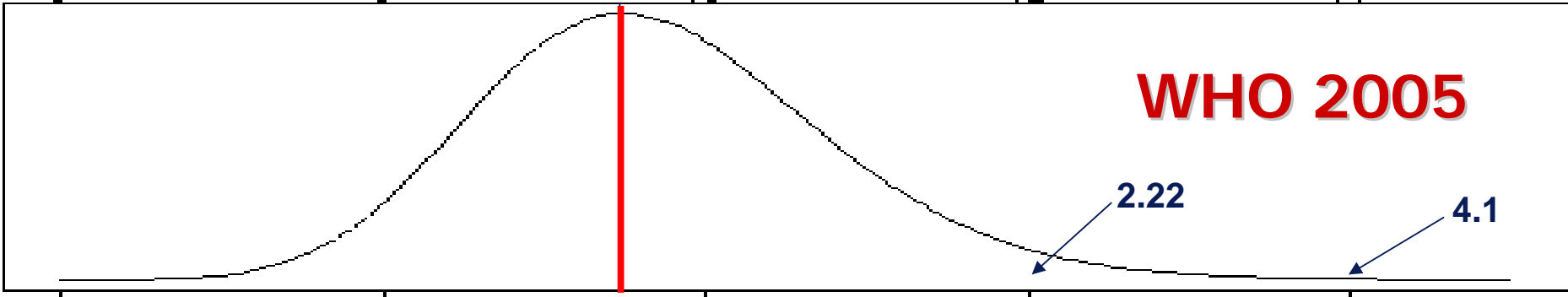
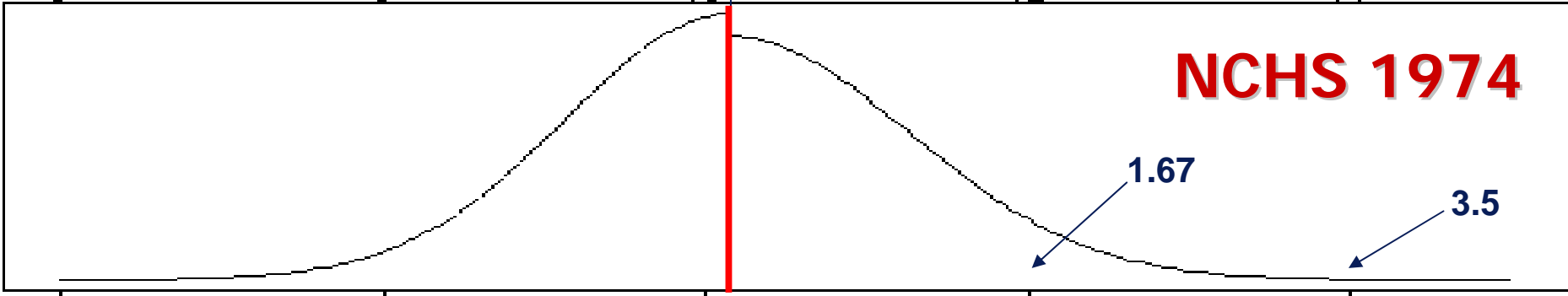
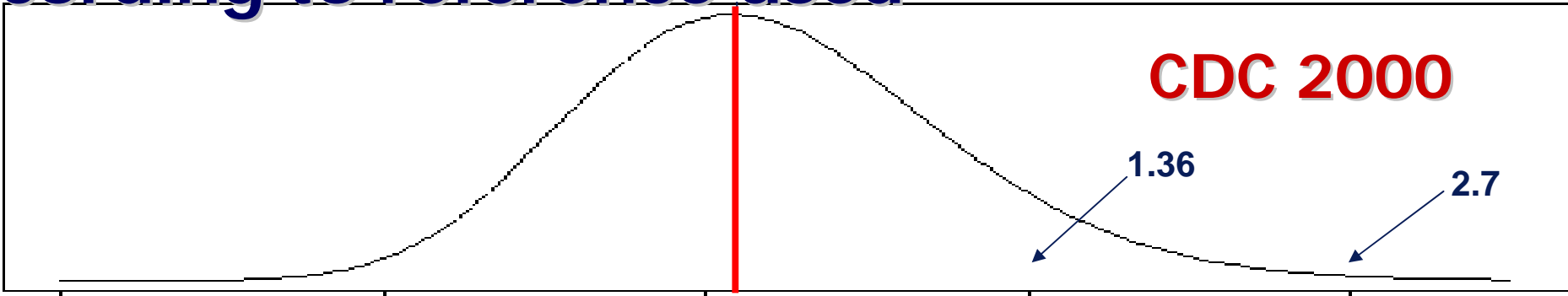


Adapted from: de Onis M and Blössner M. Am J Clin Nutr 2000;72:1032-9.

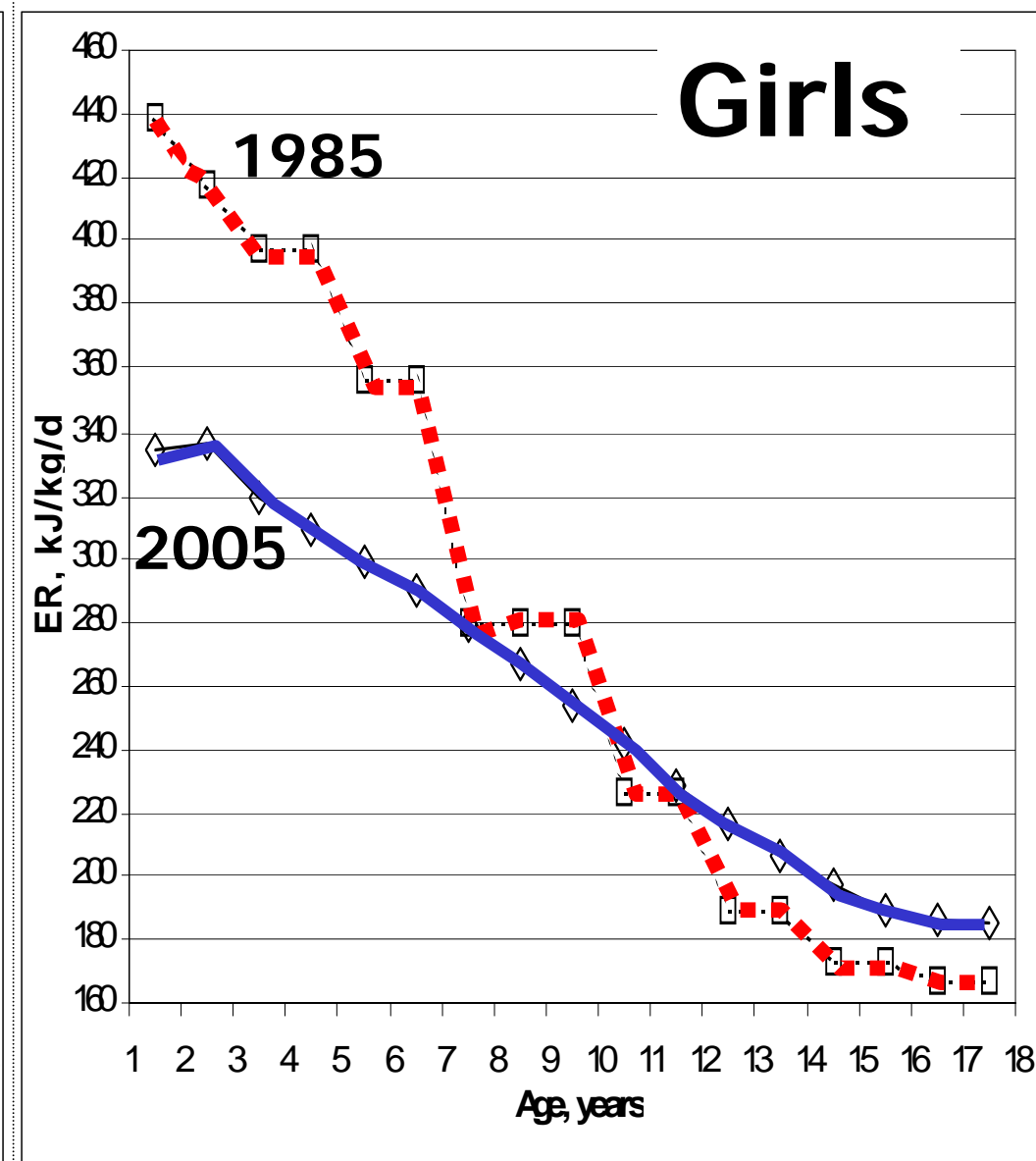
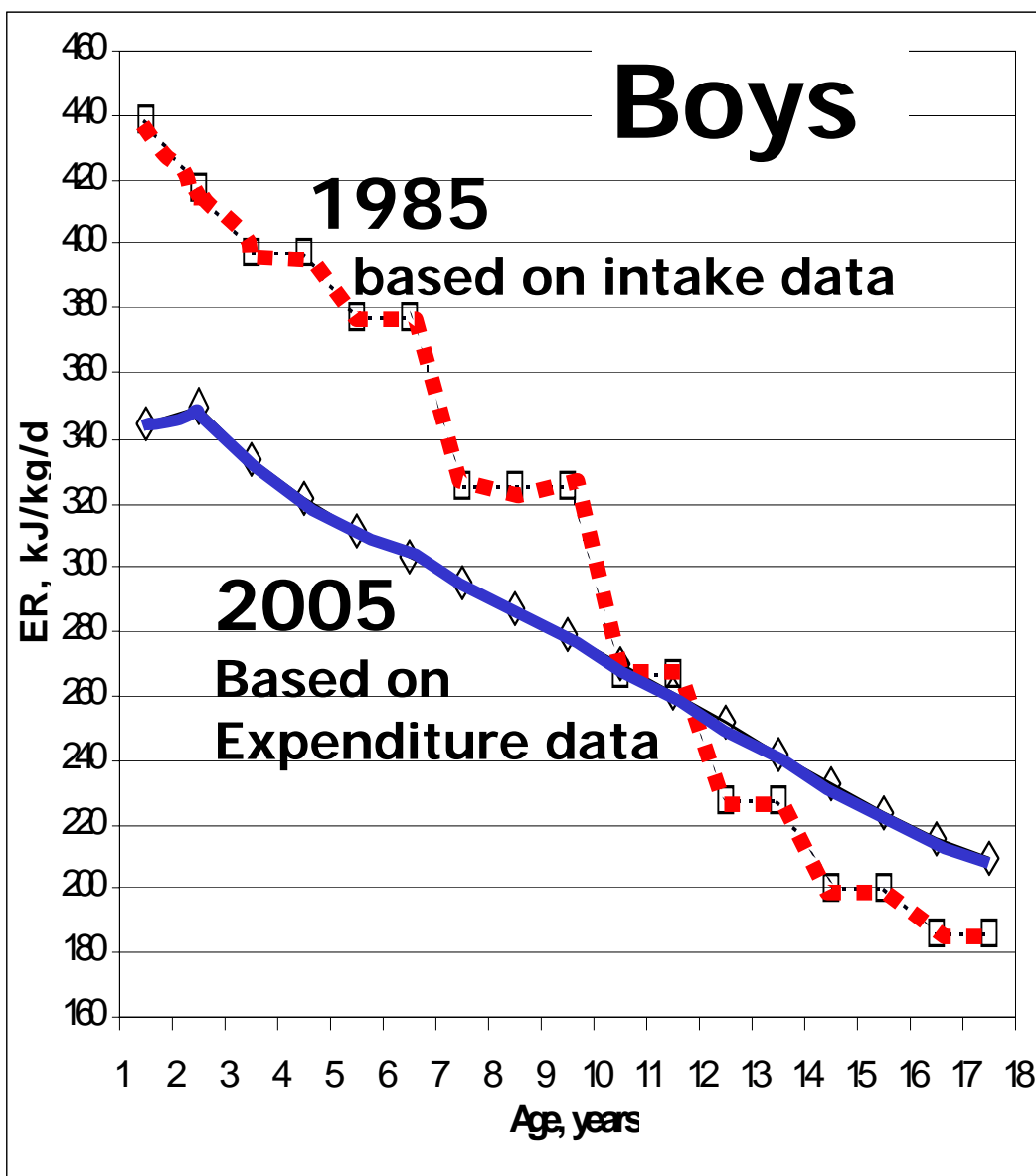
WHO Multicentre Growth Reference Study (MGRS)



Weight for age of a 1 yr old boy weighing 12 kg according to reference used



Energy Recommendations for Children FAO/WHO



Individual
responsibility



**Change in the
Environment**

Underlying Factors

Access to safe and healthy foods (quantity and quality)

Balancing Energy Intake and expenditure

Factors affecting food and PA supply chain

Urban space and facilities for active life (household school & workplace)

Policies affecting regulation marketing, subsidies

Psycho-social determinants of food intake and PA



TO BE ACTIVE

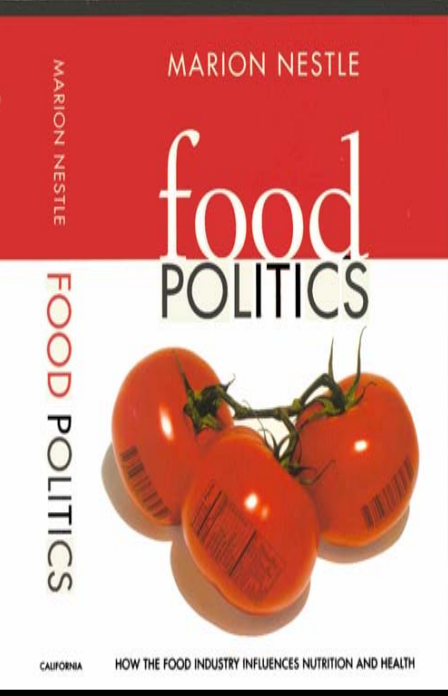
- **Walk** **15 km/wk**
- **3 km per day** **30 min**
- **1 km in** **10 min**
- **100 m in** **1 min**

We Eat: *what we are "forced" to eat*



Mixed metaphors





Basic Causes

Supply and demand side of food and PA chain.

Community empowerment demand for: safe & healthy foods, active life

Public and private sector response to people's health demands

Government response in protection of public interest

International and National policies: health, education, agriculture, economic, urbanization, recreation, transport, trade



Senators seek a trimmer America

July 31, 2002 Posted: 10:31 AM EDT (1431 GMT)

- **Obesity is our nation's fastest rising public health problem,"**
- **"As a nation, we can no longer afford to ignore the escalating costs associated with obesity & unhealthy lifestyles, such as physical inactivity and poor dietary habits."**

THE LANCET

Who pays in the obesity war

January 31, 2004

- **Mirroring tobacco industry tactics, public-health needs are being stifled by business interests.**
- **WHO Global Strategy on Diet, Physical Activity and Health calls for reductions in fat, salt, and sugar contents of foods, and recommends exercise to prevent obesity**
- **High-fat, energy-dense foods are often the cheapest options for the consumer.**
- ***....As long as a meal of grilled chicken, broccoli, and fresh fruit costs more, and is less convenient, than a burger and fries or a peanut butter sandwich, then the battle against obesity will be lost.***

