Yusuf Al-Gau'd

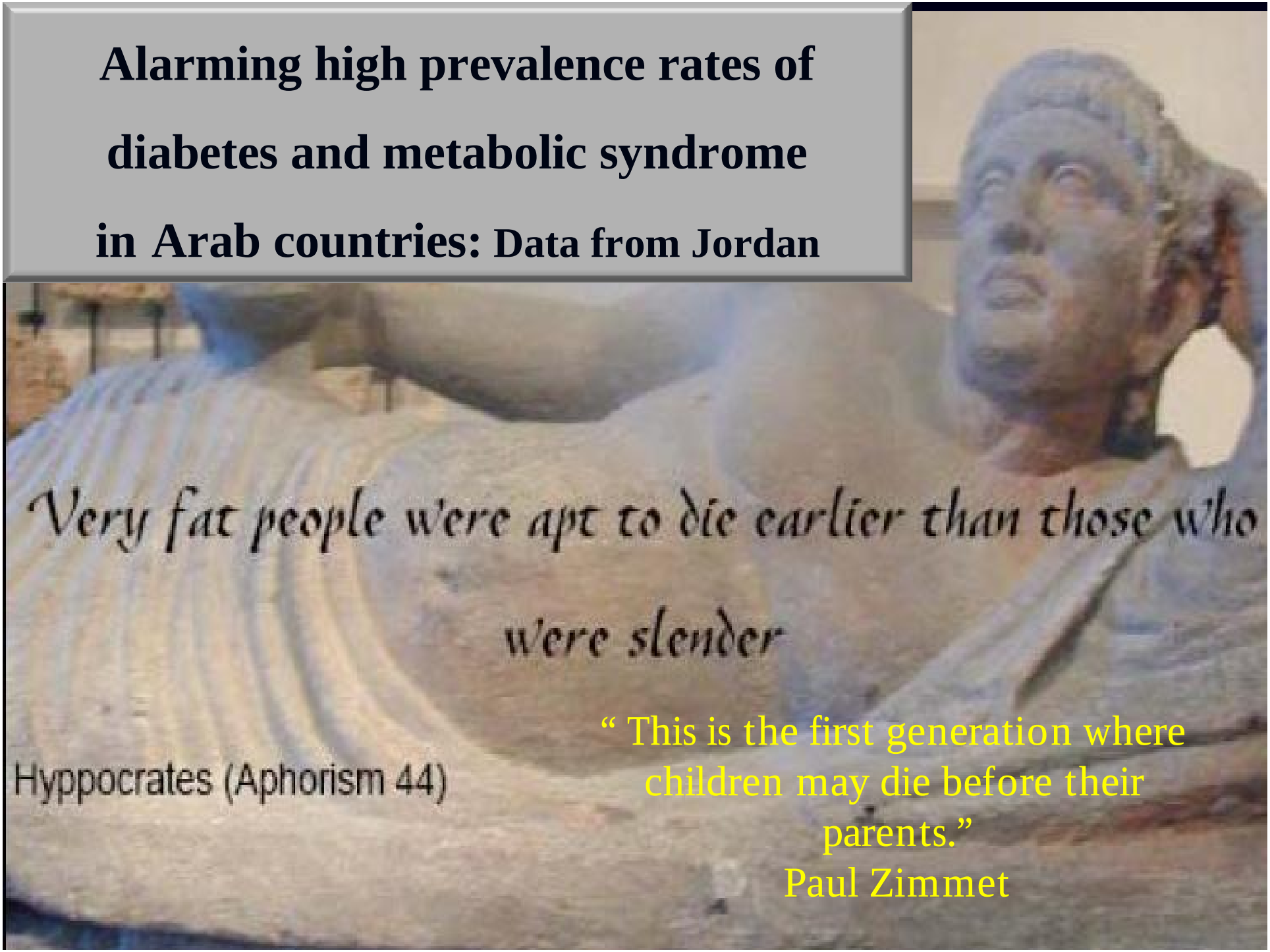
BDS, MSc, MSPH, MHPE, FFPH, ScD

Associate Prof. of Epidemiology and Biostatistics

Associate Prof. Medical Education

Jordan University of Science & Technology

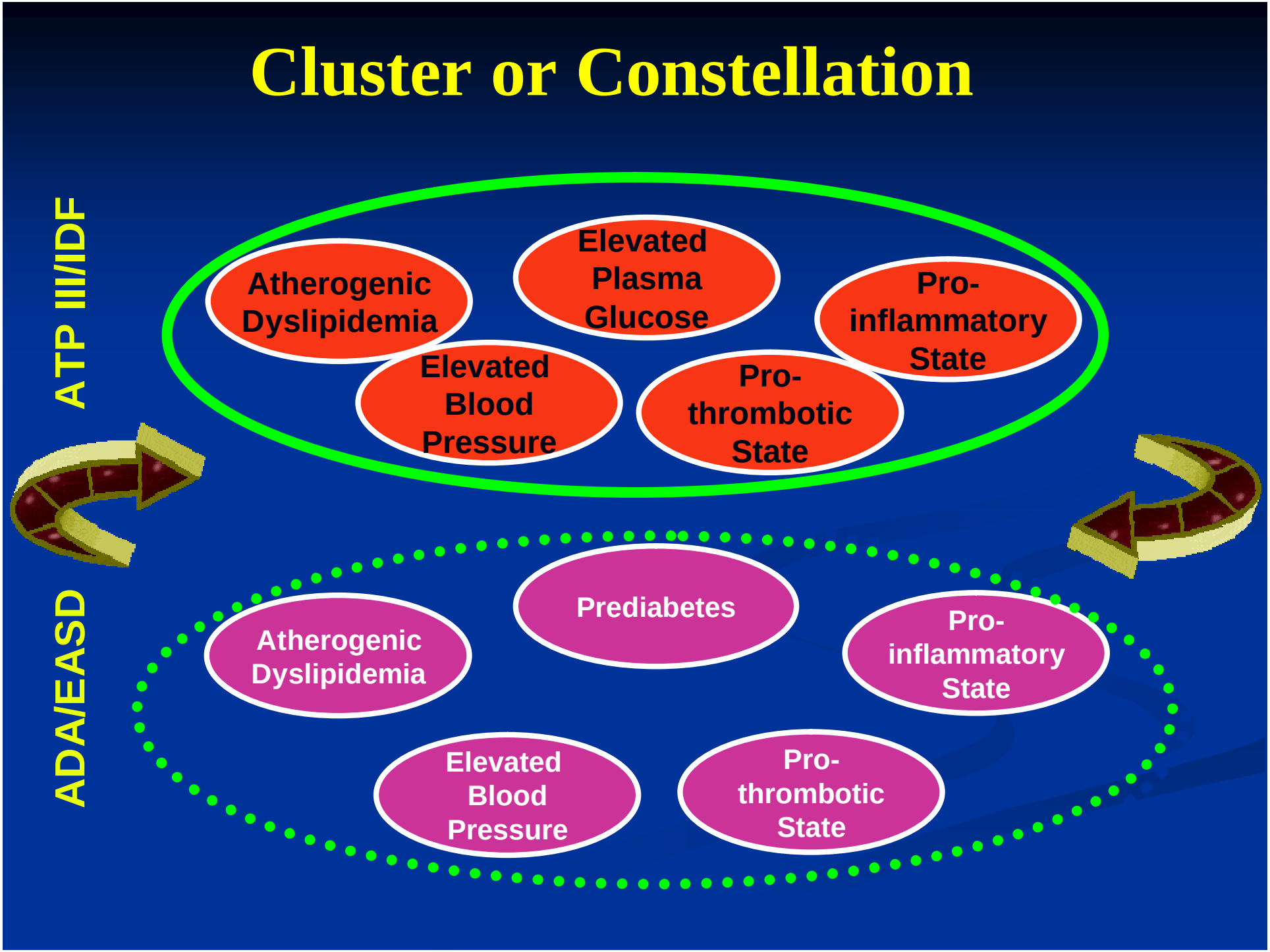
Alarming high prevalence rates of diabetes and metabolic syndrome in Arab countries: Data from Jordan



Outline

- Definition of Metabolic Syndrome
- Obesity, Diabetes, Metabolic Syndrome and Cardiovascular Diseases
- Prevalence of Metabolic Syndrome and Diabetes among adults
- Prevalence of Metabolic Syndrome among children and adolescents
- Prevention of Metabolic Syndrome
- Strategic directions and actions

Cluster or Constellation



The Metabolic Syndrome (ATP III)

Any 3 OF 5

Risk Factor	Criterion
Abdominal Obesity Men Women	Waist Circumference >102 cm (>40 in) >88 cm (>35 in)
Triglycerides	≥150 mg/dL
HDL-Cholesterol Men Women	 <40 mg/dL <50 mg/dL
Blood Pressure	≥130/≥85 mm Hg
Fasting Glucose	≥110 mg/dL

IDF (2005)

- **Waist circumference : – ethnicity specific***
  – for Europids: Male > 94 cm
  Female > 80 cm

plus any two of the following

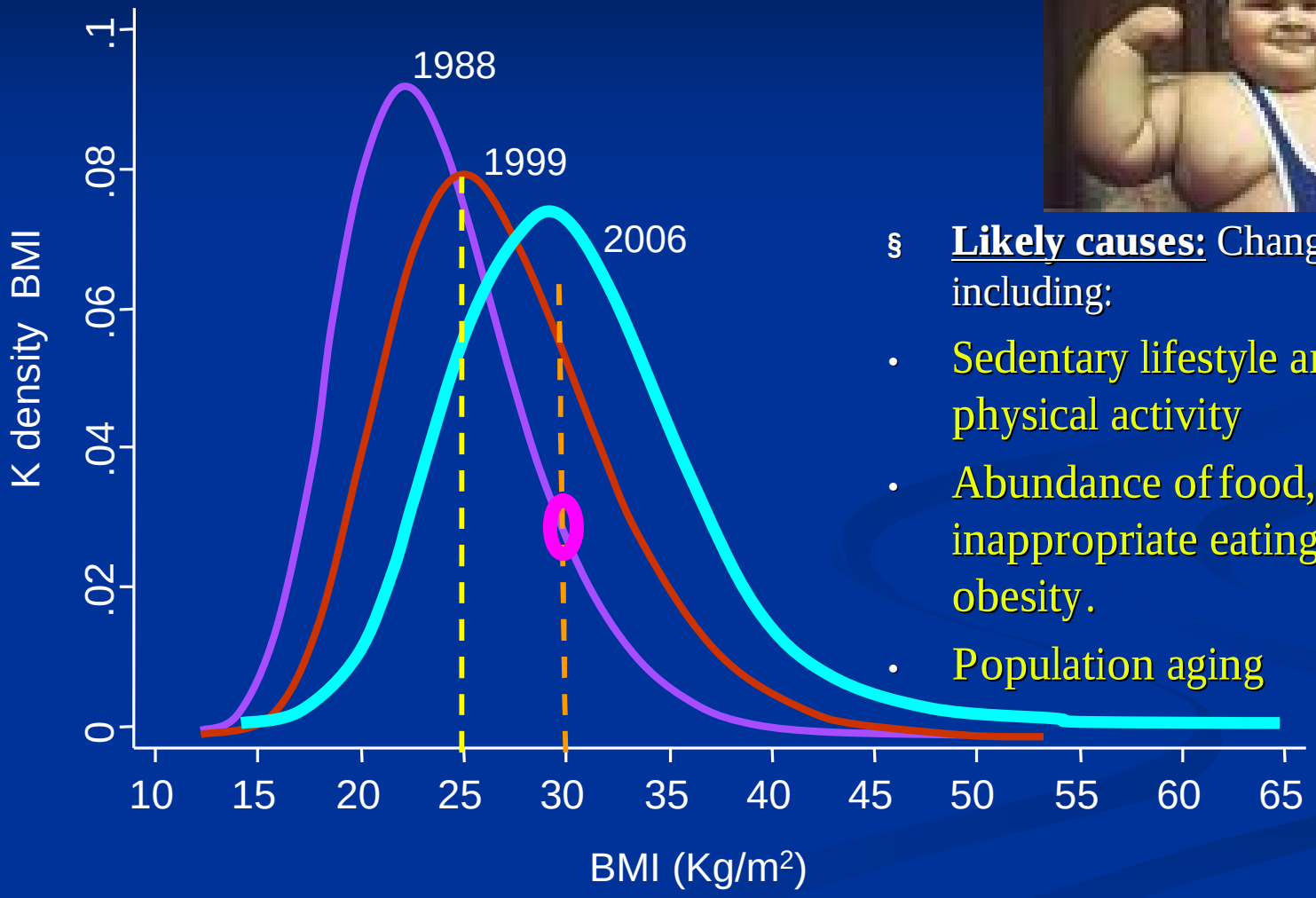
Raised triglycerides

Reduced HDL cholesterol

Raised fasting plasma glucose

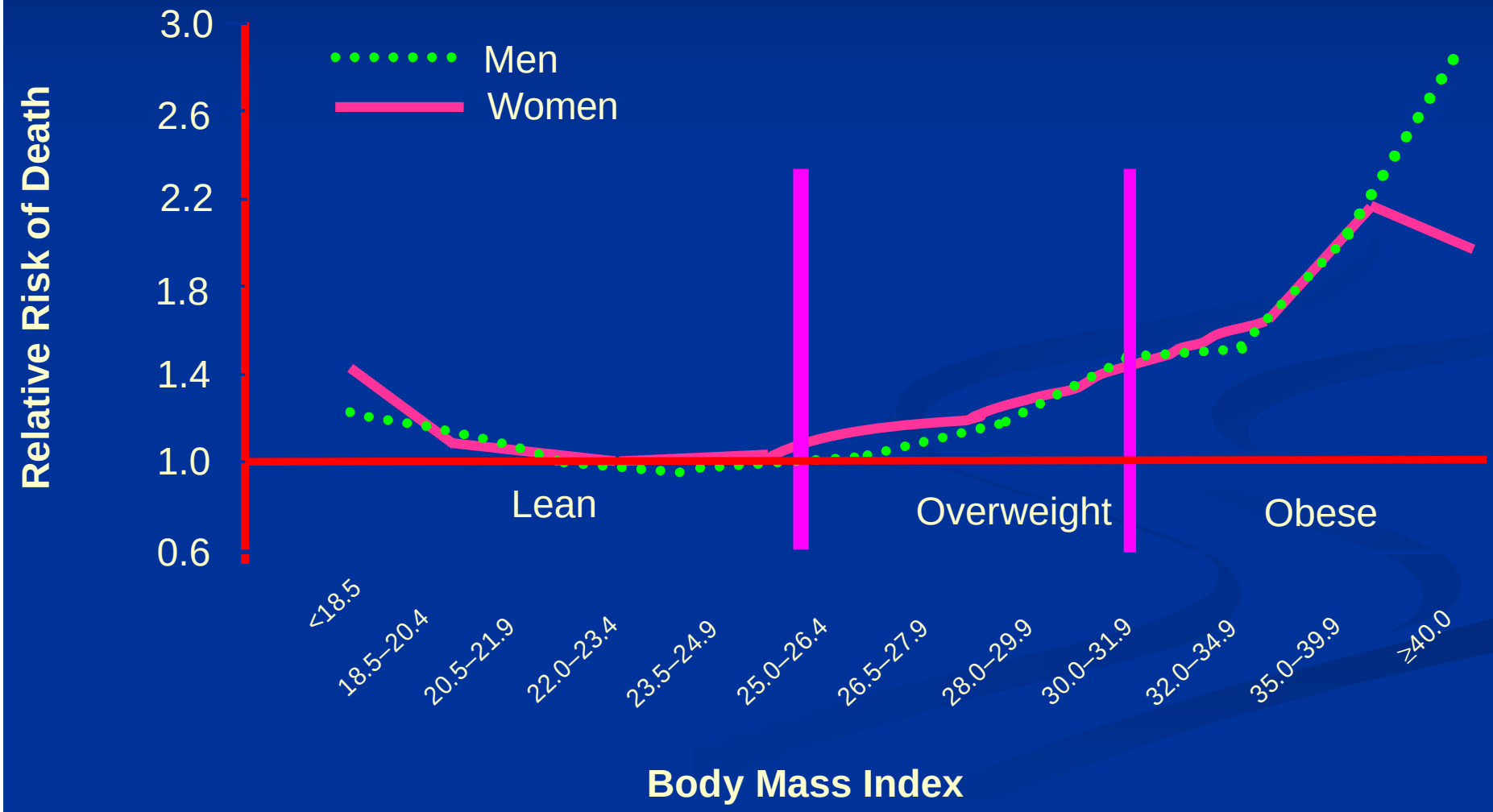
Raised blood pressure

BMI Distribution Shifts



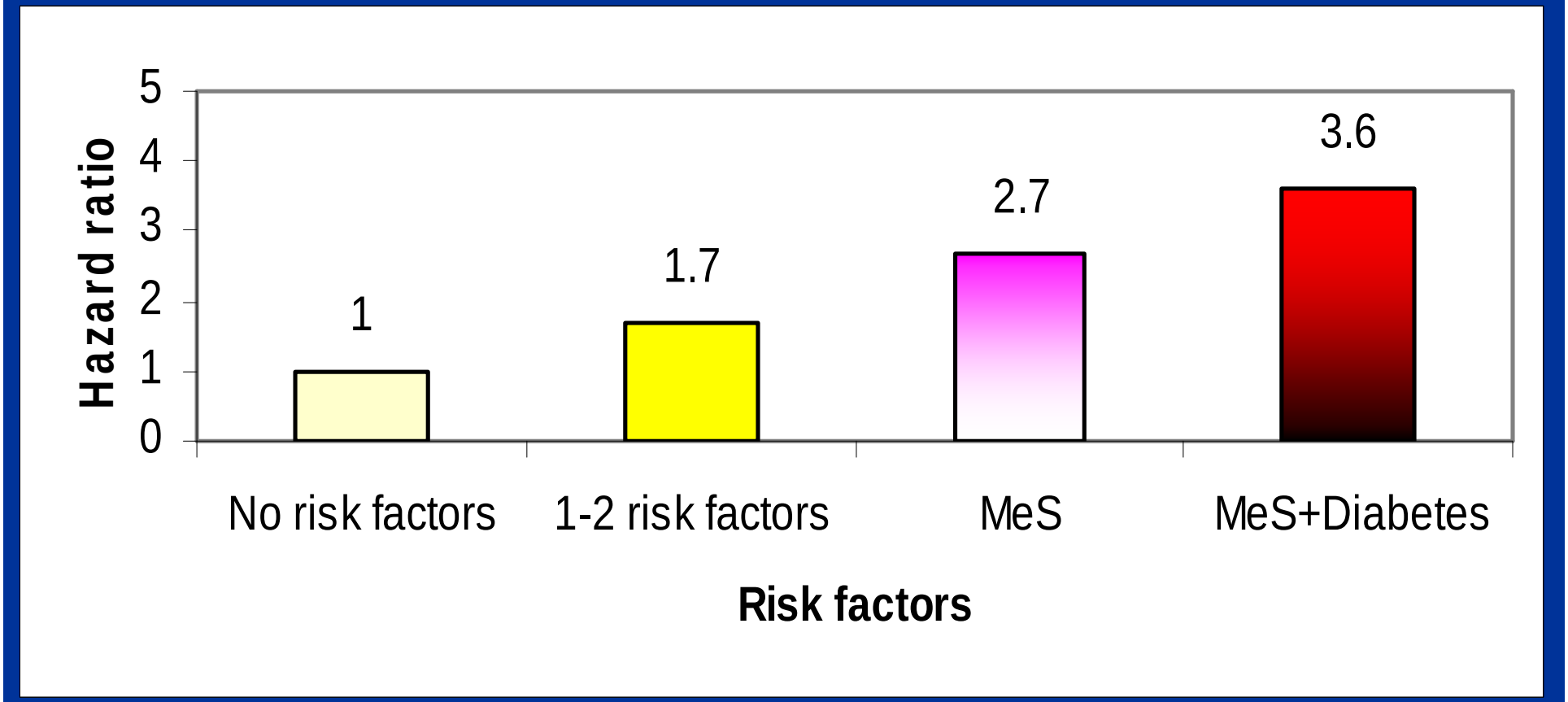
- **Likely causes:** Changes in lifestyle including:
  - Sedentary lifestyle and lack of physical activity
  - Abundance of food, inappropriate eating habits, and obesity.
  - Population aging

BMI and Cardiovascular Disease Mortality

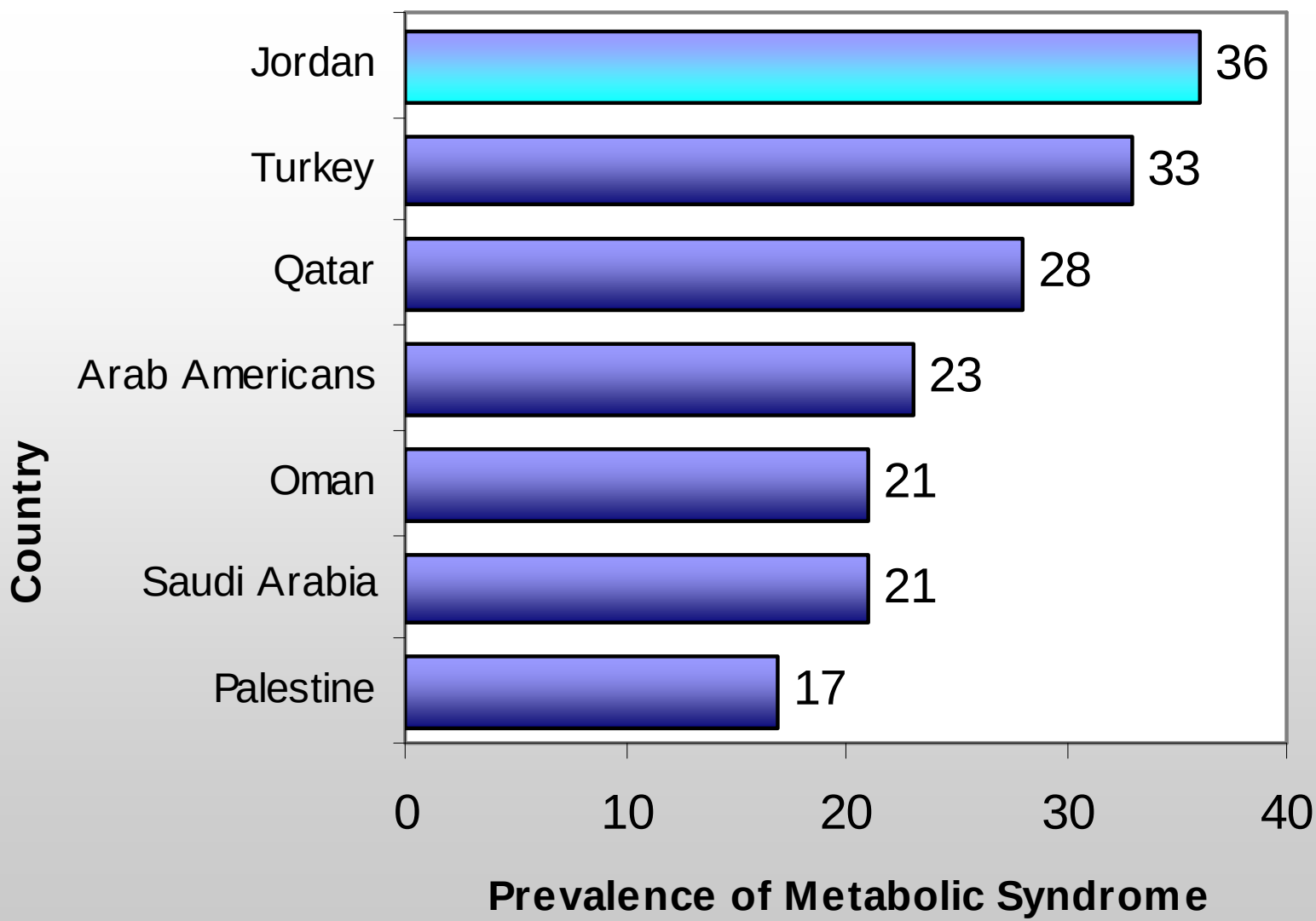


Calle et al. *N Engl J Med* 1999;341:1097.

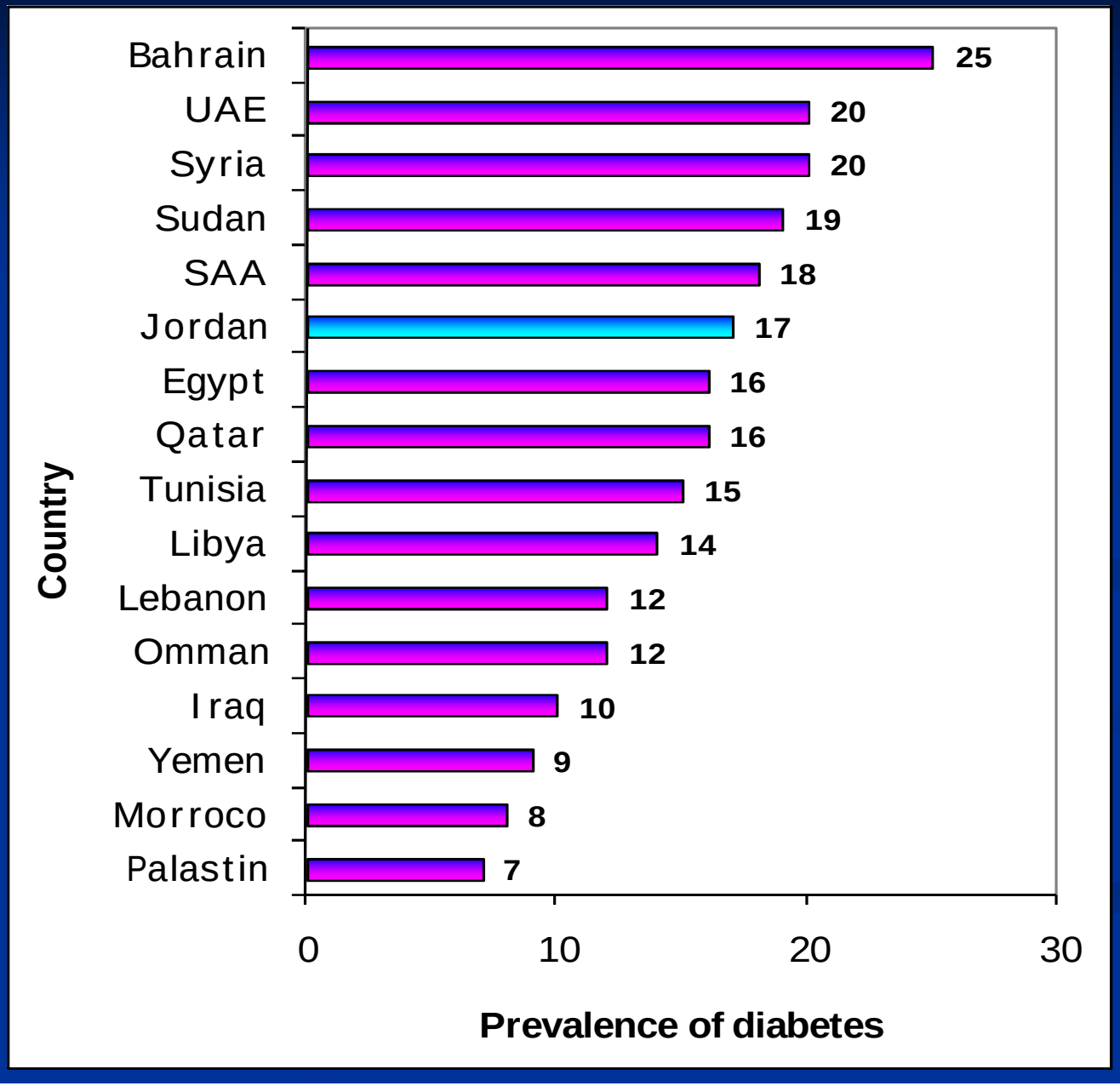
Cardiovascular Diseases Mortality increases with the increased number of Metabolic Syndrome components



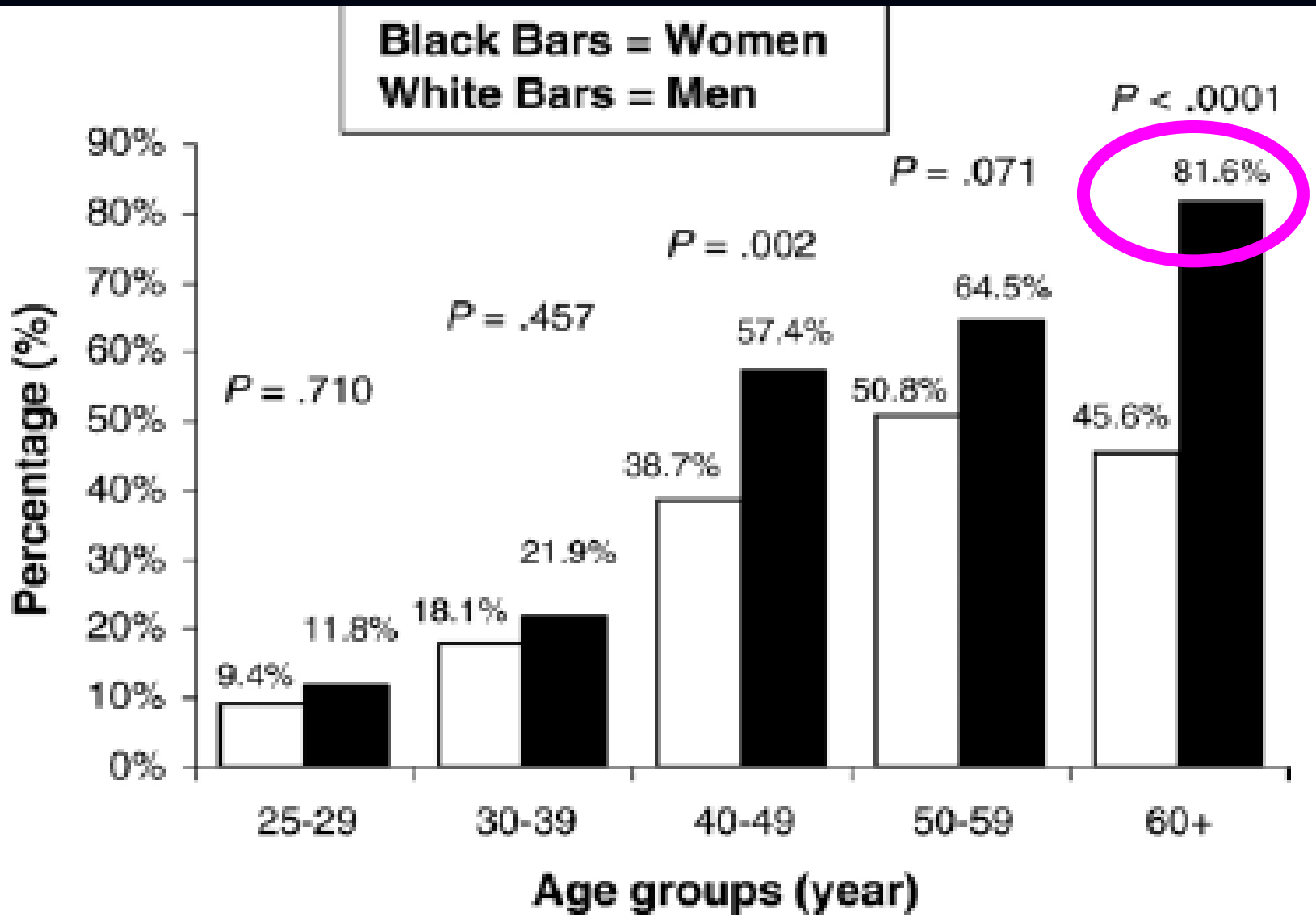
Prevalence of MeS in the region



Prevalence of Diabetes in Arab Countries



Metabolic syndrome in Jordan



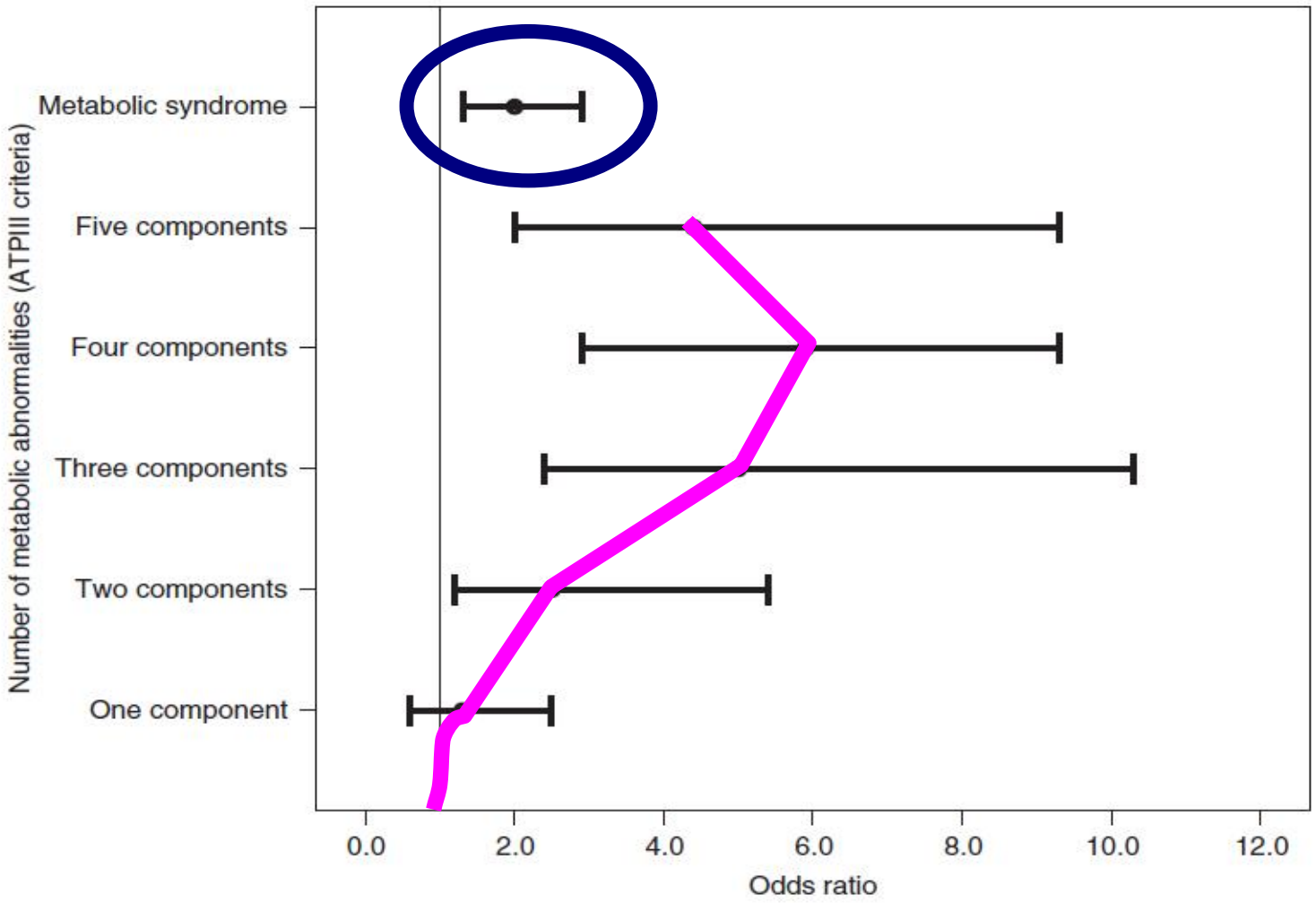
Metabolic syndrome among Jordan Adults

Age-adjusted prevalence (95% confidence interval) of individual metabolic abnormalities and overlapping abnormalities of the metabolic syndrome among Northern Jordanian aged ≥25 years

	Men (n=394)	Women (n=727)	Total (N=1121)
Individual components[a]			
Abdominal obesity	12.3 (9.2–15.5)	60.7 (57.0–64.3)	44.1 (41.0–47.1)
Hypertriglyceridemia	48.1 (42.2–54.0)	34.2 (30.6–37.7)	38.6 (35.5–41.6)
Low HDL cholesterol	61.5 (55.3–67.6)	59.2 (55.1–63.4)	59.6 (56.2–63.0)
High BP or medication use	42.2 (36.5–47.9)	46.0 (42.4–49.6)	44.6 (41.5–47.7)
High FPG or medication use	19.8 (16.5–23.0)	19.7 (17.2–22.2)	19.5 (17.5–21.5)
Number of components			
≥1	83.3 (78.2–88.3)	85.6 (82.3–88.9)	84.6 (81.8–87.4)
≥2	58.1 (52.3–64.0)	63.7 (60.0–67.5)	61.6 (58.4–64.8)
≥3	28.7 (24.2–33.3)	40.9 (37.7–44.2)	36.3 (33.6–39.0)
≥4	10.7 (8.1–13.3)	21.8 (19.4–24.2)	17.7 (15.8–19.6)
5	3.1 (1.6–4.6)	7.7 (6.0–9.4)	6.0 (4.8–7.2)

The association between metabolic syndrome and coronary artery disease in Jordan

YOUSEF S. KHADER*, BASHEER KHASAWNEH†, AMMAR K. DAOUD† and MOAWIAH KHATATBEH‡

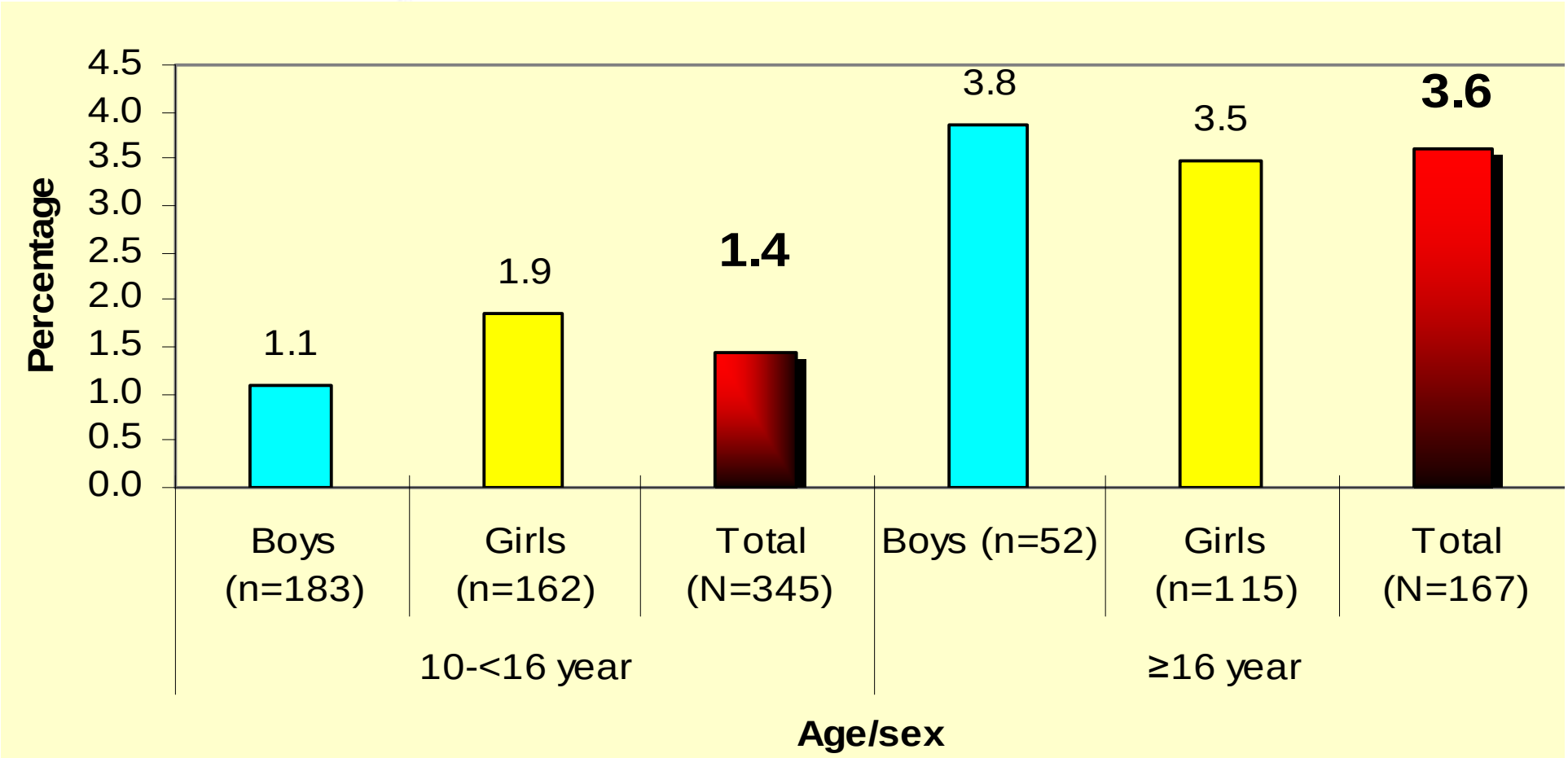


Metabolic syndrome and its components among Jordanian children and adolescents

Research Article

Metabolic Syndrome and Its Individual Components among Jordanian Children and Adolescents

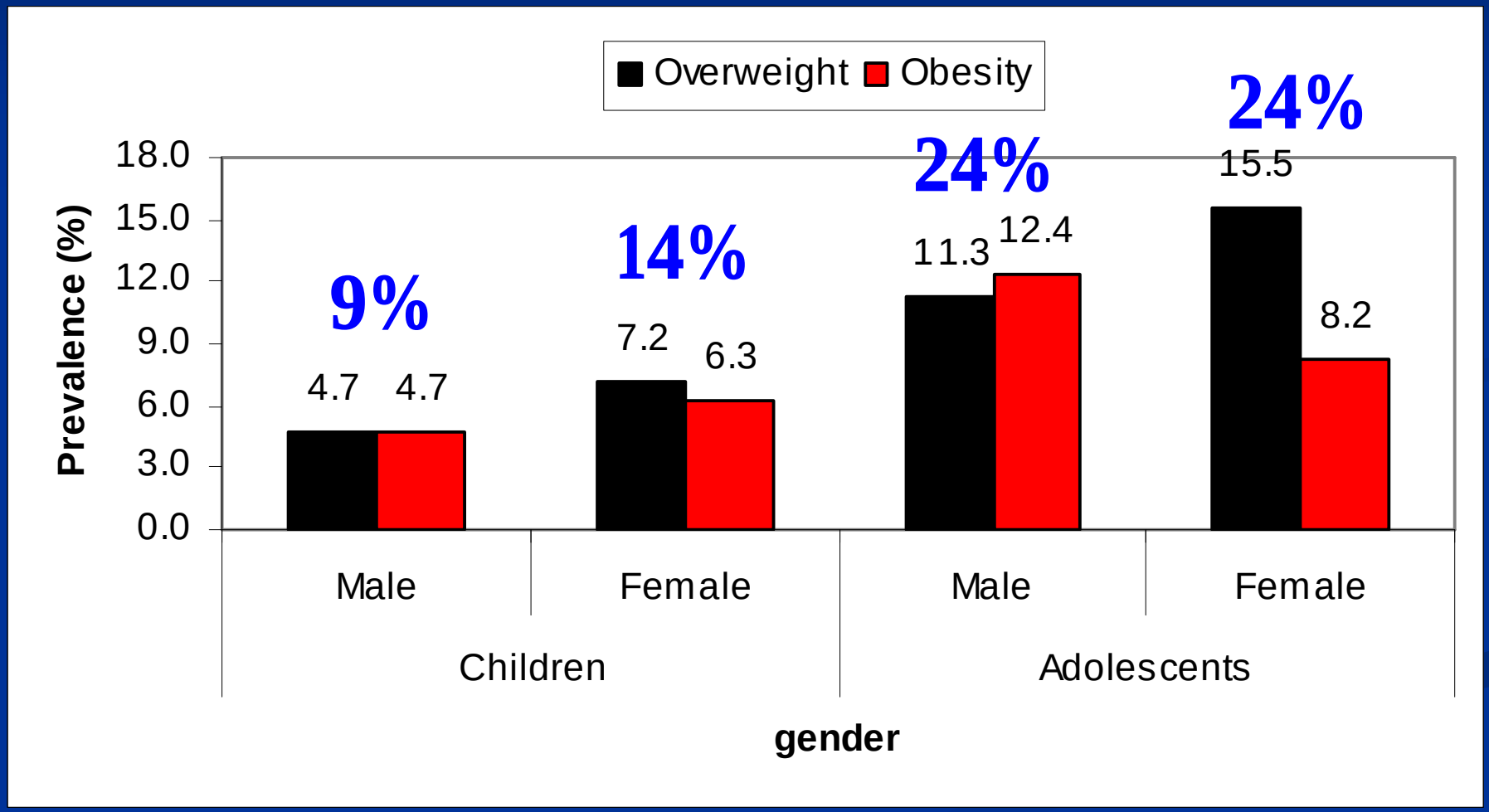
Yousef Khader,[1] Anwar Batieha,[1] Hashim Jaddou,[1] Mohammed El-Khateeb,[2] and Kamel Ajlouni[2]



Prevalence of Childhood Obesity in the Region (9-18 yrs)

Country	% Overweight	% Obesity
Jordan	**17**	**9**
Oman	19	10
Syria	17	11
Sudan	12	8

Overweight and obesity



Matern Child Health J (2009) 13:424–431
DOI 10.1007/s10995-008-0362-0

Overweight and Obesity Among School Children in Jordan: Prevalence and Associated Factors

Yousef Khader · Omama Irshaidat · Mohammad Khasawneh · Zouhair Amarin · Mousa Alomari · Anwar Batieha

2,131 children aged 6 and 12 year

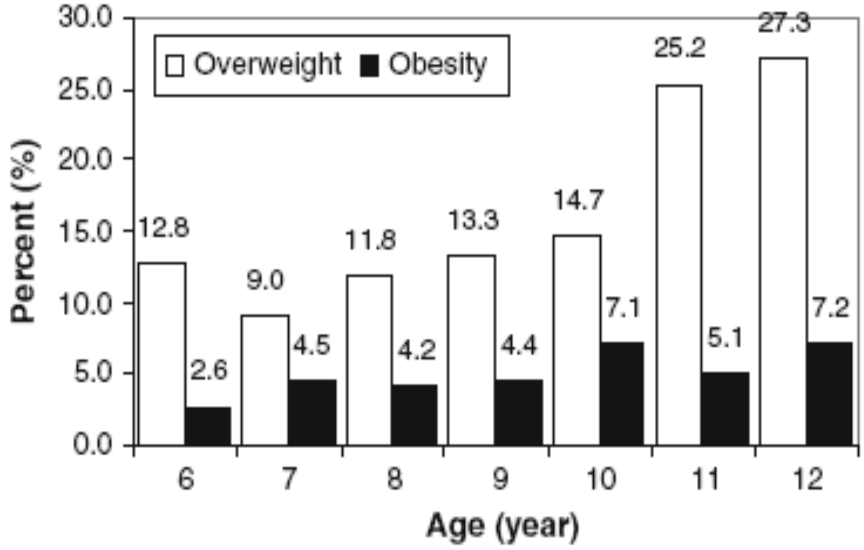


Fig. 1 Prevalence of overweight and obesity among male children aged 6–12 years in the north of Jordan by age

Overweight

20%

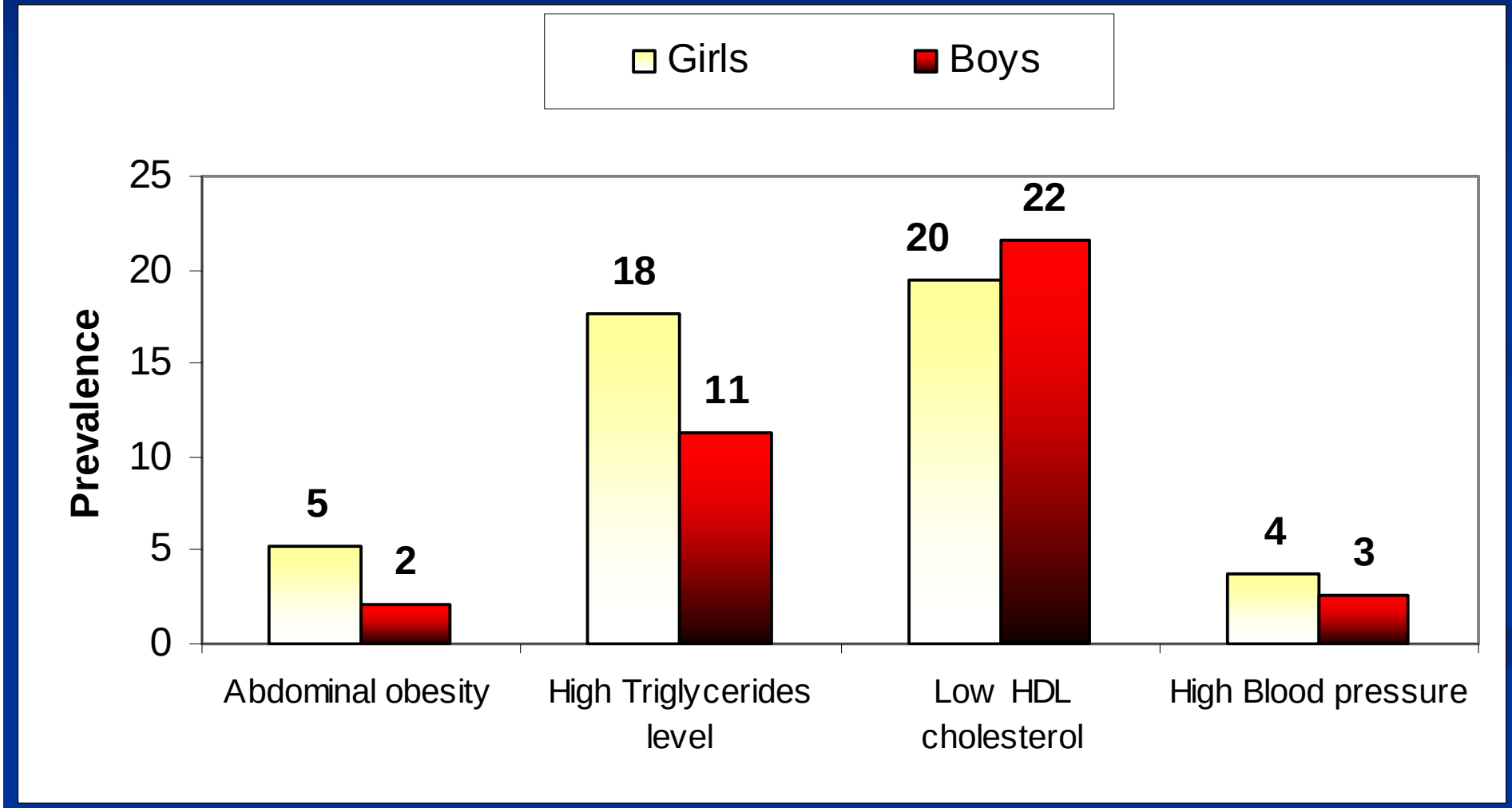
Obesity

6%

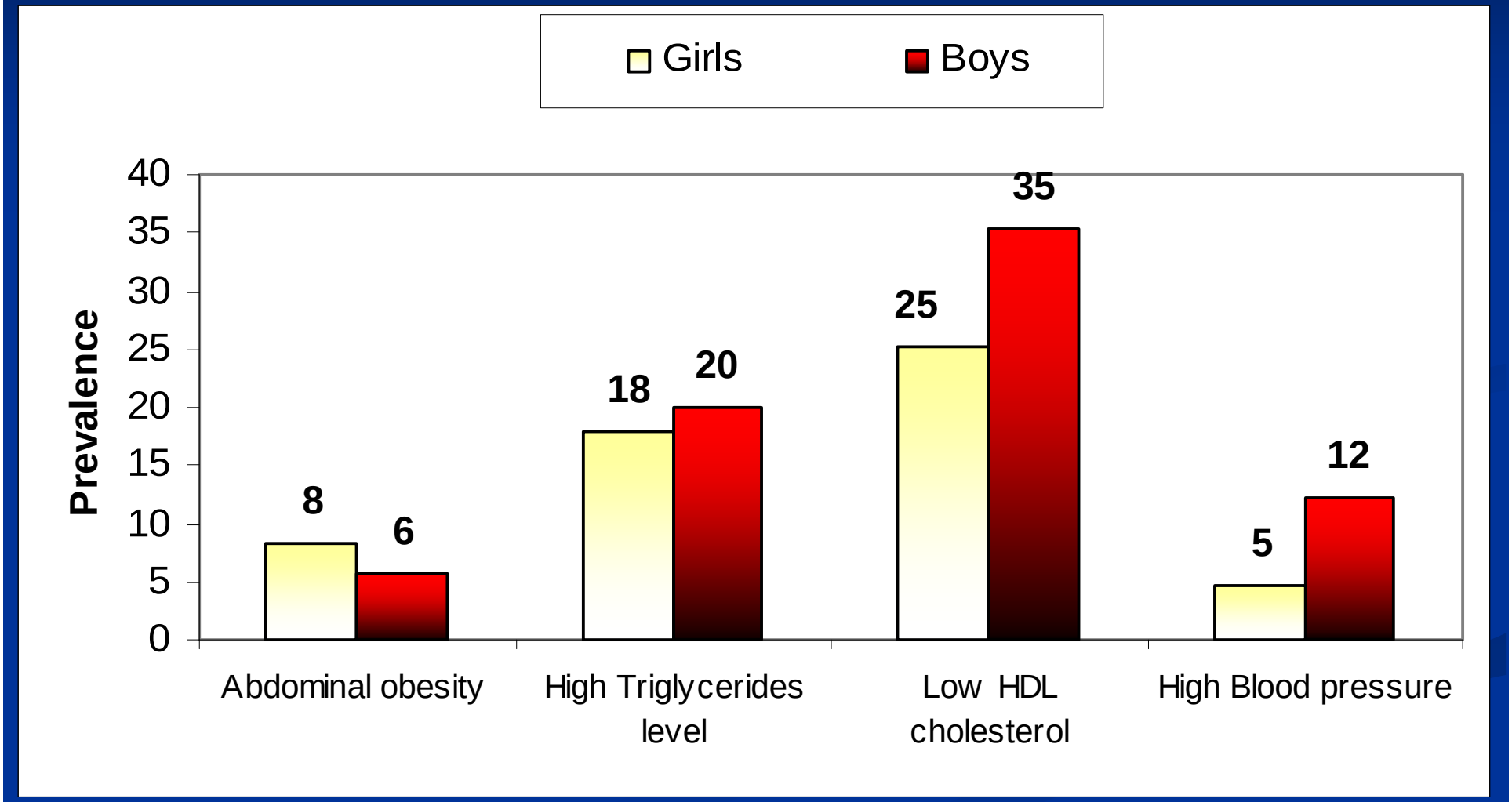
Predictors of obesity among Jordanian children

Variable	OR (95% CI)	*P*-value
Family income (JD)		
≤300	1	
>300	2.34 (1.13, 4.81)	0.020
Daily pocket money (piaster)		
≤20	1	
>20	3.34 (1.88, 5.94)	<0.0005
Television watching time/day (h)		
≤2	1	
>2	1.95 (1.23, 3.10)	0.005
Mother's BMI (kg/m^2)		
Normal	1	
Overweight	2.32 (1.36, 3.97)	0.002
Obese	2.28 (1.14, 4.57)	0.020
Father's BMI (kg/m^2)		
Normal	1	
Overweight	3.09 (1.48, 6.43)	0.003
Obese	6.10 (2.79, 13.34)	<0.0005

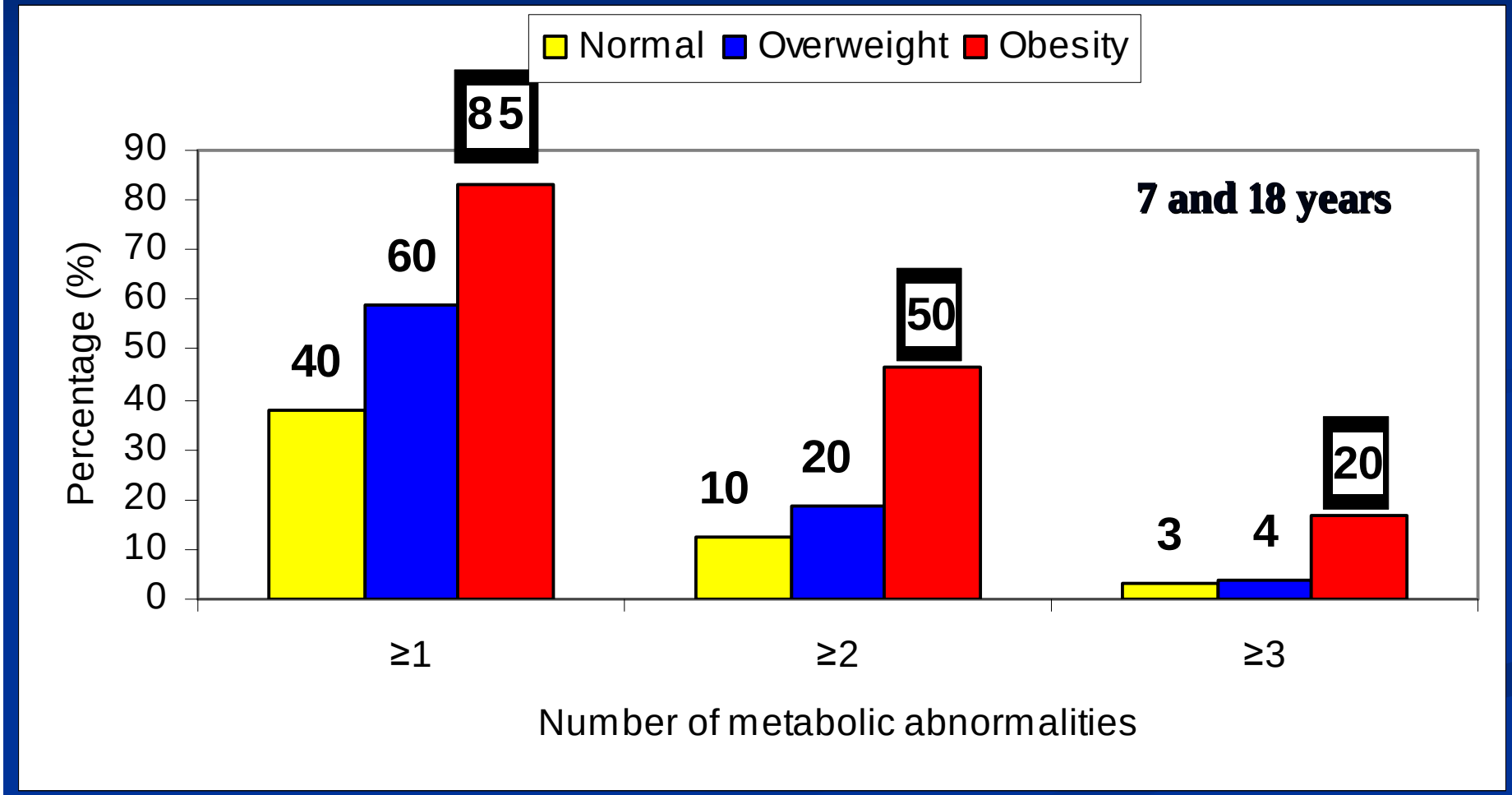
Individual metabolic abnormalities in children



Individual metabolic abnormalities in adolescents



Clustering of metabolic abnormalities according to body mass index



Prevention of MeS

You need to make sensible changes to your lifestyle.

Exercise. Start slowly: Exercising on most days of the week for 30-60 minutes.

Eat a healthy diet with lots of fruits and vegetables and go easy on the saturated fats, trans fat, cholesterol, and salt.

Lose weight **if you're overweight**.

Quit smoking if you smoke -- now.

Schedule regular checkups **with your doctor** to check your blood pressure, cholesterol, and blood sugar.

Strategic directions and actions

- **Strengthening of surveillance of these diseases and their risk factors**
- **Advocacy and communications:**
- Health is a fundamental human right
- Obtain political and community support
- **Policy development, legislation, and regulation:**
- Governments are responsible for the development of healthy public policies and ensure action across all sectors concerned

Strategic directions and actions

- **Health promotion and population-based prevention**
  - Target the population as a whole as well as high risk individuals
  - Community-based interventions
  - **Strengthening and reorientation of health systems**
  - Human resources: education, training, motivation, incentives, etc
  - Shift toward more prevention
  - **Improvement of disease prevention and management**

WHO strategy on diet and physical activity

- The overall goal of the global strategy on diet, physical activity and health (WHA57.17, 2004) is to

"Promote and protect health by guiding the development of an enabling environment for sustainable actions at individual, family, community, national and global levels, that when taken together, will lead to reduced disease and death rates related to unhealthy diet and physical inactivity"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Thank you