

### 3: Metabolic syndrome: definitions and causes

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- An obese hypertensive diabetic by any other name
  - Syndrome X/Syndrome X Plus
  - Dysmetabolic syndrome
  - Insulin Resistance syndrome
  - Plurimetabolic syndrome
  - Cardiometabolic syndrome
  - Dyslipidaemic hypertension
  - Hypertriglyceridaemic waist
  - Deadly Quartet
- Metabolic syndrome: presence in one individual of multiple cardiovascular risk factors

#### Definitions of the Metabolic Syndrome

- All agree on the core components of the metabolic syndrome:
  - Obesity
  - Insulin resistance/glucose intolerance
  - Hypertension
  - Dyslipidaemia
- However key criteria differ between groups
- **WHO Definition**
  - Mandatory component: High insulin levels, an elevated fasting blood glucose or an elevated post meal glucose
  - With at least 2 of the following criteria:
    - Abdominal obesity as defined by:
      - a waist to hip ratio of greater than 0.9
      - BMI of at least 30 kg/m<sup>2</sup>
      - waist measurement over 94 cm
    - Triglyceride level of at least 1.7 mmol/L
    - HDL cholesterol lower than 0.9 mmol/L
    - Blood pressure of 140/90 or above (or on treatment for high blood pressure).
- NCEP (National cholesterol education program) - ATP III criteria

Three or more of the following five risk factors:	
Risk factor	Defining level
Central obesity <ul style="list-style-type: none"><li>• Men</li><li>• Women</li></ul>	Waist circumference > 102 cm (> 40 in) > 88 cm (> 35 in)
○ Triglycerides	≥ 150 mg/dL (1.7 mmol/L)
HDL cholesterol <ul style="list-style-type: none"><li>• Men</li><li>• Women</li></ul>	< 40 mg/dL (1.03 mmol/L) < 50 mg/dL (1.29 mmol/L)
Blood pressure	≥ 130/ ≥ 85 mm Hg
Fasting glucose	≥ 110 mg/dL (6.1 mmol/L)



#### • **IDF (International Diabetes Federation) Criteria - Used the most (Should probably remember)**

- Mandatory component: Central obesity - waist circumference ethnicity specific
  - Europid ≥94cm men, ≥80cm women
  - Asian (not Japanese) ≥90cm men, ≥80cm women