Introduction
Childhood obesity is on the rise globally, and Malaysia is of no exception. The major concern of childhood obesity is that it is highly associated with metabolic syndrome which predispose an early risk of cardiovascular disease and type 2 diabetes mellitus.

Objective
To determine the prevalence of metabolic syndrome in apparently overweight/obese adolescents in the community

Method
Overweight (OW) and obese (OB) adolescents who have never seek medical attention, were identified from schools in a local township and invited to attend a one-day obesity workshop.

- Anthropometric and waist circumference (WC) measurements, together with fasting bloods were taken.
- Metabolic syndrome was defined (International Diabetes Federation (IDF) 2007 Guidelines) as presence of abdominal adiposity (WC > 90th centile for age and gender, Malaysians) plus two/more clinical features i.e:
  - High fasting plasma glucose (FPG > 5.6mmol/L)
  - Hypertension (BP > 130/85 mm Hg)
  - Elevated triglyceride (TG > 1.7mmol/L)
  - Low HDL-cholesterol (<1.03mmol/L).

Results
A total of 172 overweight and obese adolescents (19.7% OW, 80.3% OB) attended the workshop.

- Abnormal WC was documented in 161 (93.6%); 26 (17.2%) had high FPG and 57 (33.1%) had hypertension.
- Eighteen (11.9%) had high TG while 39 (25.8%) had low HDL.
- 73 adolescents (42.5%) have at least one abnormal component of metabolic syndrome.
- Thirty three (19.2%) fulfilled metabolic syndrome criteria (30.7% from OW group, 59.3% from OB group).
- Multivariate logistic regression showed there was increased risk of metabolic syndrome with parental cardiovascular risk (OR 2.6, 95% CI 1.26-6.44)

Discussion
Almost all overweight/obese adolescents had at least one abnormal component of metabolic syndrome.

- One out of five overweight/obese adolescents fulfill the criteria for metabolic syndrome.
- In comparison with a recent clinic-based study in UMMC Pediatric Obesity Clinic, of 160 patients, 39 (24%) was found to have metabolic syndrome.
- According to NHANES III, in 2003 the prevalence of metabolic syndrome was 28.7% in overweight adolescents in United states.
- Worldwide, the prevalence estimate from general population and community-based sampling ranged form 1.2% to 22.6% with rates of up to 60% observed in the overweight and obese.

Conclusion
The prevalence of metabolic syndrome among the overweight/obese adolescents in this community is high.

- Routine screening by the school health authority is highly recommended to help reduce the risk of complications.

References