

Obese and Overweight Teens at Higher Risk for Chronic Diseases

Teens who were obese and overweight had a higher risk for chronic diseases such as type 2 diabetes, cardiovascular disease, and fatty liver disease, according to the results of an Australian cross-sectional study reported in the June issue of the *Archives of Pediatrics & Adolescent Medicine*, 2008

Although morbidity could be expected to increase in parallel with the prevalence of obesity, little is known about chronic disease risk factors in the general adolescent population. Most studies of comorbidities either have been conducted in clinic-based groups of severely obese adolescents or have not studied the full range of metabolic complications. The goal of this study was to evaluate the association between measures of adiposity (body mass index [BMI] and waist circumference) and risk factors for heart disease, type 2 diabetes, and fatty liver disease as well as the clustering of risk factors in middle adolescence.

At secondary schools in Sydney, 496 grade 10 students were categorized as overweight or obese by the International Obesity Task Force cutoff points and the UK waist circumference cutoff points. Mean age was 15.4 ± 0.4 years; 58.4% were boys. Blood samples were tested for high-density lipoprotein (HDL) and low-density lipoprotein (LDL) cholesterol, triglycerides, insulin, glucose, alanine aminotransferase (ALT), gamma-glutamyltransferase (GGT), and high-sensitivity C-reactive protein (CRP) levels.

In adolescent boys, factors significantly associated with overweight and obesity were insulin levels ($P < .001$), ALT ($P < .001$), GGT ($P = .005$), LDL cholesterol levels ($P < .001$), high-sensitivity CRP levels ($P < .001$), and blood pressure ($P < .001$). Factors significantly associated with overweight and obesity in adolescent girls were insulin, HDL cholesterol ($P < .001$) and high-sensitivity CRP levels ($P < .001$). Compared with adolescents who were not overweight, obese adolescent boys and girls were significantly more likely to have 2 or more risk factors (boys: 73.5% vs 7.6%; girls: 44.4% vs 5.4%; $P < .001$ for both).