

SERUM LEPTIN LEVELS AND BODY COMPOSITION IN OBESE THAI CHILDREN

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Abstract. This study aimed to investigate the relationship between serum leptin concentrations and body composition among a sample of obese Thai children. A cross-sectional study was conducted in 158 schoolchildren, of whom 107 were obese and 51 normal weight; their mean age was 8.2 years. Body weight, height, waist circumference (WC), and subcutaneous skinfold thickness at 4 sites (triceps, biceps, subscapular, and supra-iliac) were measured. Total body fat (TBF) was determined by bioelectrical impedance analysis. Fasting blood samples were obtained to determine serum lipid profiles. The food intake of the children was estimated from interviews with the children and their mothers to elicit 24-hour food recall over 2 days. The results reveal subcutaneous fat skinfold, total body fat and waist circumference were significantly higher in obese than normal weight children ($p < 0.001$). Serum leptin levels and lipid profile results, *ie* serum triglycerides (TG), serum total cholesterol (TC), low density lipoprotein cholesterol (LDL-C) and energy intake, were also significantly higher in the obese children than their normal-weight peers. Stepwise multiple regression analysis indicates that among boys, WC ($p < 0.001$) and serum TG ($p = 0.019$), and among girls, WC ($p < 0.001$) and TBF ($p = 0.030$), were significantly associated with leptin concentrations. No associations were found between leptin and energy intake in these children. A prospective study should investigate the influence of leptin levels on weight gain and subcutaneous adiposity, and the interrelationship between food intake and circulating leptin levels in children.

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