

# Childhood obesity and hypertension: Should we be alert?

Obesity has become a major concern for impending global epidemic. According to WHO, approximately 22 million under 5 children and 155 million children between 5 to 17 years were overweight or obese in 2004.<sup>1,2</sup> The prevalence of obesity in affluent school children was found to be 6% in Chennai, 7.4% in Delhi and 17.9% in Dhaka.<sup>3,4,5</sup> Childhood obesity is associated with several metabolic and endocrine derangements leading to metabolic syndrome, including hypertension.<sup>6</sup> The prevalence of hypertension among normal school children varies from 1.8-3.5%<sup>7,8,9</sup>, and which was found significantly higher among Bangladeshi obese children (10.7%, systolic hypertension and 15%, diastolic hypertension)<sup>10</sup> and lack of physical activities and intake of rich foods were significantly correlated<sup>7,10</sup>. Obesity leads to hyperinsulinaemia which causes excess renal sodium retention, increased sympathetic activity, growth of vascular smooth muscle, alteration in lipid metabolism and all these favours adiposity, hypertension and cardiovascular diseases.<sup>11</sup> Age and sex specific BMI, waist circumference (WC) cut-off values and waist-hip circumference are used to identify childhood obesity and the cardiovascular risk factors. The target reference values of waist circumference for children aged 16 years & older are <80 cm (females) and <94 cm (males).<sup>12</sup> Waist-hip ratio > 0.8 (woman) and > 0.9 (men) is associated with an increased risk insulin resistance and associated diseases.<sup>13</sup> The high prevalence of childhood obesity and its strong association with hypertension and premature onset of chronic diseases is now a big concern for children. Therefore, it is now important to find out ways to prevent both obesity and hypertension to protect our future generation.

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**Md Abid Hossain Mollah**

Professor of Paediatrics,  
BIRDEM General Hospital, Dhaka

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