

Body Mass Index, Blood Pressure and Haemoglobin in Jat Sikh Children Ranging in Age from 10 to 16 Years

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Abstract

In the present investigation body mass index, blood pressure and haemoglobin have been studied among Jat-Sikh children of Patiala district. The sample consists of 251 boys and 306 girls ranging in age from 10 to 16 years. All the variables have shown a general tendency towards increase with age. The boys are significantly heavier and taller than girls at most of the age levels from 12 to 16 years. The value of BMI is also slightly more in boys in all age groups except at 11 and 15 years and significantly more in boys at 14 years of age. Blood pressure has also been found to be more in boys at all age levels except at 12 and 13 years. The differences reach a level of significance at 16 years in systolic blood pressure and at 11 and 14 years in diastolic blood pressure. The haemoglobin level has been found to be significantly more in boys in all age groups. After 12 years the level of haemoglobin has increased more markedly in boys.

Key Words: Body Mass Index, Blood Pressure, Haemoglobin

Introduction

Body Mass Index (BMI) is a reliable indicator of health and nutritional status of human beings (*Garrow and Webster, 1985; Rookus et al., 1987; Must et al., 1991; Naidu et al., 1991; Cole et al., 1995; Pishdad, 1996 and Yanai, 1997*). Body Mass Index also known as the "Quetlet's Index" expresses the relationship between the two most widely used parameters to monitor linear and ponderal growth, viz., height and weight. BMI does not measure fat directly, but research has shown that BMI correlates to direct measures of body fat, such as by under water weighing and dual energy X-ray absorptiometry (*Mei et al., 2002*).

There are preliminary evidences that hypertensive processes begin in the childhood (*DeSweit et al., 1992*), with numerous studies finding co-relations between blood pressure levels from early to late childhood (*Lauer and Clark, 1989*)

and from childhood to adulthood (*Nelson et al., 1992*). These reports suggest the importance of tracking blood pressure in children to detect the early stages of hypertension.

As association between age, height, weight, body mass index and blood pressure has been studied by various investigators (*Siervogel et al., 1982; Kaas, 1985; Dyer and Elliott, 1989; Lauer and Clark, 1989; Sandin et al., 1990; Stamler, 1991; Roche and Siervogel, 1991; Chen et al., 1995; Rona et al., 1996; Kaufman et al., 1997; Luke et al., 1997; Vijayalakshmi et al., 1997; Steyn et al., 2000; Venkataramana et al., 2001; Mufunda et al., 2006 and Mzayek et al., 2007*).

Haemoglobin concentration is an important diagnostic indicator for the well being of an individual. In prepubertal period no major differences have been reported between the sexes in haemoglobin concentration. It is only