



## Comparison of BMI and percentage of body fat of Indian and German children and adolescents

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With 7 Tables

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**Summary:** Today, serious health problems as overweight and obesity are not just constricted to the developed world, but also increase in the developing countries (Prentice 2006, Ramachandram et al. 2002). Focusing on this issue, BMI and percentage of body fat were compared in 2094 schoolchildren from two cross-sectional studies from India and Germany investigated in 2008 and 2009. The German children are in all age groups significantly taller, whereas the Indian children show higher values in BMI (e.g. 12 years: Indian: around 22 kg/m<sup>2</sup>; German: around 19 kg/m<sup>2</sup>) and in the percentage of body fat (e.g. 12 years: Indian: around 27%; German: around 18–20%) in most of the investigated age groups. The Indian children have significantly higher BMI between 10 and 13 (boys) respectively 14 years (girls). Indian children showed significant higher percentage of body fat between 10 and 15 years (boys) and between 8 and 16 years (girls). The difference in overweight between Indian and German children was strongest at 11 (boys) and 12 (girls) years: 70% of the Indian but 20% of the German children were classified as overweight. In countries such as India that undergo nutritional transition, a rapid increase in obesity and overweight is observed. In contrast to the industrialized countries, the risk of overweight in developing countries is associated with high socioeconomic status. Other reasons of the rapid increase of overweight in the developing countries caused by different environmental or genetic factors are discussed.

**Key words:** Overweight, school children, industrial and developing countries.

### Introduction

It is well known that the percentage of overweight and obese people is increasing in the Western countries (Lissau et al. 2004, Lobstein et al. 2003, Ogden et al. 2006, Gutiérrez-Fisac et al. 2002, Kromeyer-Hauschild et al. 1999) while underweight is still a huge problem in the developing world. There are tendencies of reducing the percentage of underweight children from 30.2% in 1990 to 19.3% in 2015, due to improved socioeconomic development. Nevertheless, in 2015 113 million children will still be affected, alone in South-Central-Asia 53 million (Onis et al. 2004). It is not well known that also in the developing world the percentage of overweight and obese people increases rapidly (Prentice 2006, Ramachandram et al. 2002, Ghosh 2006, 2011).