

CORRESPONDENCE

**Overweight and Obesity in Children Starting School in Augsburg—Prevalence and Influencing Factors**

by Dr. med. Elisabeth Weber, MPH, Dipl.-Oecotroph. (univ.) Alexandra Hiebl, Dr. med. Ulrich Storr in volume 51–52/2008

**Percentiles May Be Confusing**

The authors have studied pediatric overweight—one of the most important current topics in health prevention—and have shown the factors that influence this development very convincingly. The influences of mother tongue, exercise, dietary behavior, and media consumption that were analyzed in the study were particularly interesting. To investigate these influential factors in a cross sectional comparison, the chosen definition of overweight and obesity based on the percentile method is acceptable (above the 90th and 97th age and sex specific percentiles), and differences by national origin become obvious.

In a longitudinal study, however, the percentile method may cause confusion. Even if each new starter at school in the study period 2005/6 (theoretically) weighs 10 kg more than their peers in 2003/4, the prevalence of overweight according to the percentile method will not change substantially—in spite of the children's massive weight gain. The percentile method is problematic for health related risk factors—for example, cardiovascular risk factors. In Germany in persons older than 60 years, the prevalence of hypertension is currently about 60%. On the basis of the threshold value of 140/90 mm Hg, which takes into account cardiovascular risk, arterial hypertension can be assumed above the 40th percentile of blood pressure distribution.

For overweight in children, threshold values should be defined as for blood pressure, which takes into account health risk and not statistical distribution. It is possible that for this risk factor, the risk may be present for notably lower percentiles. In any case, the absolute values for body weight or body mass index should be calculated above which the health risk increases.

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**In Reply:**

The age and sex specific percentiles primarily serve to demarcate the categories underweight, normal weight, overweight, and obesity. This definition is based on the statistical distribution of a reference population. The percentiles reflect an orientation along weight develop-

ment in individuals or trends in a population. They are therefore relevant for estimating and comparing prevalence rates at the population level. If body mass index measurements in a population increase, then the reference data lose their representativeness. Prevalence data for overweight and obesity drop as a result. This has to be taken into consideration when discussing suitable reference values. For adults, the threshold values that apply are based on risk probabilities for morbidity and mortality. Because of the low incidence of obesity dependent disorders and in the absence of appropriate longitudinal studies of the health risk of obesity in children and adolescents, there are no threshold values for the amount of the body fat mass that is associated with health risk for this age group (1). In the guidelines on obesity in childhood and adolescence, it is recommended, with regard to threshold values, to characterize as "noticeable" and "very noticeable", respectively, if the 90th and 97th percentile are exceeded (1). To determine threshold values for overweight in children, intensive research with clearly defined end points, a long period of observation, and large cohort is required. Internationally, individual epidemiological studies have been conducted in children and adolescents with regard to the association of obesity and morbidity in adulthood. In Germany, current data are available from the KiGGS survey and from the Kiel Adipositas Prevention Study as a long term observational study. Using the results of these studies and expanding on these in the sense of further observation of a KiGGS cohort would enable for more profound questioning of overweight as a risk factor for subsequent disorders (2). DOI: 10.3238/arztebl.2009.0250b

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**Conflict of interest statement**

The authors of both letters declare that no conflict of interest exists according to the guidelines of the International Committee of Medical Journal Editors.