

CHILDHOOD OBESITY

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## INTRODUCTION

Obesity is a common nutritional disorder in the United States; approximately 30% of our adult population is obese (1). Adult obesity is associated with increased risk of development of cardiovascular and renal diseases, hypertension, diabetes, gall bladder disease, gout and arthritis as well as increased risks in surgery and pregnancy (2). In determining the etiology of adult obesity, considerable attention is being focused on obesity which has its onset during infancy and early childhood. There is concern that early childhood obesity, if not successfully treated, may lead to a lifetime of obesity. Obesity in childhood also is associated with increased health risks such as hypertension, hyperlipidemia, and abnormalities of glucose tolerance (3). Obese infants have been found to be more prone to respiratory infections and other illnesses (4). Both socially and medically, the obese child is at a disadvantage when compared with peers of normal weight. The purpose of this paper is to discuss the nature of childhood obesity, its possible etiology, its tendency to progress from infantile to juvenile to adult forms, and intervention and treatment for childhood obesity.

## ASSESSMENT OF OBESITY

Obesity is defined as the presence of excessive body fat. Assessment of obesity involves measurement of body fat and the determination of the level at which it is excessive (5). The two methods of measurement most easily used for children in clinical settings are body weight and skinfold thickness.

### Body Weight

Body weight of a child is easily determined and therefore widely used to assess obesity. Growth charts such as those published by Tanner and Whitehouse (6) (fig. 1) and by the National Center for Health Statistics (7) are used as standards of comparison. Those charts have been derived from data obtained through measurement of large numbers of children at various ages. Age of the child is plotted along the abscissa and weight along the ordinate. A system of percentiles is used to plot the growth curves so that measurements taken at one particular age rank the child in comparison to other children of the same sex and age. Measurements plotted at several ages allow one to visualize the child's pattern of growth and to determine whether it is progressing within approximately the same percentile, as would be expected (8). Separate charts are constructed for children and infants of both sexes. While height and weight are basic measurements which are useful in defining normal growth patterns in children, these measurements are limited in the determination of actual body components such as protein, fat or inorganic constituents of the skeleton (9). Therefore, body weight alone is not a reliable indicator of the amount of fat in the body or of obesity in children.

### Skinfold Thickness

Skinfold thickness measurements can be made relatively easily and accurately with the use of calipers. Sites such as the triceps, subscapular and midaxillary have been used. These measurements are used to estimate total body fatness through measurement of the subcutaneous layer of fat (9). Standards for triceps skinfold measurements have been published by Seltzer et al. (10) and by Tanner and Whitehouse (11)