

Supporting Children's Healthy Weight

Prevalence of Childhood Overweight

A few decades ago early childhood obesity was rare, but that has changed. According to the data from the National Health and Nutrition Examination Survey (NHANES), childhood obesity has risen substantially over the past thirty years. For children aged 2–5 years, the prevalence of overweight increased from 5.0% to 13.9% (1).

The increased prevalence of overweight in young children is of concern due to the numerous problems associated with it. Children who are overweight demonstrate lower self-esteem (2), and they are more likely to suffer from health complications, including type II diabetes, cardiovascular disease, orthopedic problems, pulmonary disorders, sleep problems and disordered eating (2, 3, 4). In addition, children who are obese or overweight are more likely to be obese as adults (5).

Causes of Childhood Overweight

Childhood overweight involves the interplay of two main factors: the child's genetic proneness to overweight and the environment in which they live (6). For example, children without the genetic predisposition to become overweight have an increased likelihood of becoming overweight if they live in an environment that encourages eating and discourages physical activity. Children with a family history, or a genetic predisposition, of overweight are even more likely to become overweight if they live in environments that promote obesity.

A child's risk for overweight is first determined by their genetic make-up, which determines their metabolic rate, among other things. Metabolic rate is largely

responsible for the difference in the number of calories burned when different children are doing the same activity (even when the children are of the same height, weight, and body composition). Children who have lower metabolic rates would be more likely to gain weight after eating the same amount of food as children with higher metabolic rates (5). Unfortunately, there is no way to change an individual's genetics.

Another demonstration of the impact of genetics on weight is the association between maternal weight and the weight of their children. A child is more likely to be overweight if his or her mother is overweight (7). The father's BMI appears to be associated with the weight status of their child as well (8). Part of this similarity in weight status is due to genetics and part is due to the transmission of eating behaviors from parents to children (9).

Genetic predisposition increases the child's risk of overweight, but it is not the deciding factor. The environment may have a greater impact, both immediate and longer term. Overweight risk is increased by an obesigenic environment that supports easily accessible and excessive calorie intake but also by environments that limit or eliminate opportunities for physical activity. For example, easily accessible and extra calories are found in sugar sweetened beverages (10), large portion sizes, and in many fast foods. In addition an obesigenic home environment, where there are fewer family meals and children are not offered breakfast, also increases the risk of a child becoming overweight. When family meals are offered children tend to eat a greater variety of foods and more nutritious foods. In addition, children who do not eat breakfast are not getting the nourishment they need to sustain energy throughout the day and consequently seek less nutritious foods to satisfy their extreme hunger later on.

Overweight children have also been reported to expend fewer calories in physical activity (11). This may also relate to the reports of increased television viewing in children who are overweight (12). Increased television viewing, televisions in children's bedrooms and reduced energy expenditure are all thought to contribute to the increase in pediatric obesity.

Identifying Childhood Overweight

Identifying a child who is overweight or obese is not as simple as we would like it to be. Some experts use weight, others prefer use weight for height, or Body Mass Index (BMI). But there is a word of caution. Evaluation of a child's weight status must occur over a period of time and be assessed by a health professional with additional health measures to determine whether weight increase or decrease is within the limits of normal growth. When a child's weight is assessed over time, health professionals can determine when a child's growth is "tracking" along a growth curve or is jumping ahead or falling behind in growth percentiles. When children's growth is steadily following a track or percentile, odds are that growth is going normally. When children's growth is rising or falling in tracks and percentiles, then the child's growth may be falling outside the expected growth patterns.

Technically, a child's BMI for their age and sex should fall between the 5th and the 95th percentile. What does a percentile mean? If a child's BMI is above the 95th percentile (overweight or obese), it means that out of 100 children their age and sex, this child is growing faster than 95 of them. The same interpretation can be made for falling below the 5th percentile for BMI for age and sex (underweight): that child would be growing more slowly than 95 children out of 100 their age and sex. The only way to

know a child's percentile is to either learn how to plot this information on a chart yourself or ask your health care professional to do it for you. Instructions about how to learn to accurately plot children's growth can be found at <http://www.cdc.gov/GrowthCharts/>.

Preventing Childhood Overweight

Preventing childhood overweight actually starts when the child is still in the womb. Since maternal overweight during pregnancy increases the risk of the child becoming overweight (13), women who begin pregnancy at normal weight help prevent their child from becoming overweight. In addition, pregnant women should achieve a healthy weight gain through pregnancy that will support the growth of the developing fetus while at the same time is not excessive and result in a larger fetus.

Decisions mothers can make that help to prevent childhood overweight also includes the choice of feeding method. Infants who are breastfed are at a reduced risk of becoming overweight (14, 15). This reduced risk is thought to be related to the on-demand feeding that supports infant's internal cues of hunger and fullness. So, the benefit of on-demand feeding also can be extended to infants who are bottle fed. Breastfeeding has a number of benefits for the infant and these can be reviewed at <http://www.aafp.org/online/en/home/policy/policies/b/breastfeedingpositionpaper.html>.

The time at which complementary foods or solids are introduced into the infant's diet also may impact the child's weight. The current recommended time for introduction of solid foods is approximately 6 months of age. Early introduction of solid foods has been associated with infant weight gain (16). To learn more about the introduction of solid foods visit the American Academy of Pediatrics website at <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;115/2/496>.

Portions sizes impact children's risk of overweight. A study by Fisher (17), examined the impact of children consumption of particular foods when served various portions. The study concluded that children consumed more food when served foods in larger portions. In addition, the study found that children who were allowed to serve themselves selected more age appropriate portions and consumed less.

Feeding Strategies to Support Healthy Growth

A number of feeding strategies are available to help support a healthy weight and prevent overweight. When adults use appropriate feeding strategies they can reinforce children's internal cues of hunger and satiation and they can create a more positive mealtime experience for the child. In addition, the use of appropriate feeding strategies can also support healthy eating and prevent overweight throughout a child's lifetime. To learn more about feeding strategies to support healthy growth visit the feeding strategies section at <http://www.cals.uidaho.edu/mealtimeandactiveplay/>.

Physical Activity and Overweight in Childhood

A discussion of overweight prevention would not be complete without mentioning the importance of children maintaining an active lifestyle. For children, having an active lifestyle means having the time to play; actively. Being physically active not only encourages bone and muscle development, and assists in body coordination; it is an integral part of children's overall health. Adults must provide supportive environments for active play: setting up safe environments for children to be physically active, making time for children to actively play, and reducing sedentary activities that prevent children from being active, such as television viewing. The AMA expert committee has suggested that children participate in 60 minutes of physical activity each day to prevent

overweight. Support and encourage children to be physically active by interacting with them during various types of enjoyable activity. For additional information on active play and for ways to be active with your child, see the Active Play section at

<http://www.cals.uidaho.edu/mealtimeandactiveplay/>.

TREATMENT OF CHILDHOOD OVERWEIGHT

On occasion, a child care provider will need to partner with a parent to support a physician prescribed treatment plan for a child who is overweight. The partnership among the provider, parent, and the child's health consultant is crucial to maintenance and success of the treatment plan. Supporting the child with a prescribed plan should be done by following the childcare's policy.

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