
Nature And Nurture In Childhood Obesity

Introduction:

Childhood obesity is becoming a dangerous trend across the United States. “Data from 2015-2016 show that nearly 1 in 5 school age children and young people in the United States has obesity” (Centers for Disease Control and Prevention, 2019). Nature and nurture both play key roles in this ongoing issue. On the nature side, genetic factors such as leptin deficiency, mutations in POMC, the melanocortin-4 receptor, hypothyroidism, and Albright’s hereditary osteodystrophy. On the nurture side, environmental factors such as prenatal overnutrition, consuming high-fat and sugar-containing foods, reduced physical activity, and socioeconomic status are all linked to childhood obesity.

Nature:

Kids who are obese have multiple genes that make it easier for them to gain weight. “One gene is the fat mass and obesity-associated gene, which is found in up to 43% of the population” (Obesity Medicine Association, 2019). When food is easily accessible, those with this specific gene are more likely to become obese from an excess amount of calories. This gene and other genes can cause constant hunger, a slow metabolism, and a sedentary lifestyle (Obesity Medicine Association, 2019).

“Leptin deficiency is a condition that causes obesity within the first few months of life” (U.S. National Library of Medicine, 2013). Individuals are born with a healthy weight, but are constantly hungry and gain weight quickly (U.S. National Library of Medicine, 2013). Beginning at an early age, individuals become obsessive over food. Hoarding food, binge eating, and fighting other kids for food are common symptoms of this condition (U.S. National Library of Medicine, 2013).

POMC deficiency is another condition that causes severe obesity beginning at an early age (U.S. National Library of Medicine, 2014). Again, individuals are usually a normal weight at birth, but are constantly hungry, which leads to excessive eating. This excessive eating leads to obesity by the age of 1 and they remain obese for life (U.S. National Library of Medicine, 2014). Pale skin and red hair are common in POMC deficiency, although not every individual with the condition has these features (U.S. National Library of Medicine, 2014).

The melanocortin-4 receptor helps to keep your body at a stable weight, managing food intake and the amount of energy used (American Diabetes Association, 2013). A deficiency of this receptor can cause obesity. Fortunately, there is treatment for this deficiency through a receptor agonist that reduces appetite (American Diabetes Association, 2013). However, side effects including increased heart rate and blood pressure are caused by the treatment (American Diabetes Association, 2013).

Hypothyroidism is a condition in which the thyroid gland does not produce enough thyroid hormone (Children’s Hospital of Philadelphia, 2019). A child with hypothyroidism may have fatigue, weight gain, constipation, decreased growth, and many other issues (Children’s

Hospital of Philadelphia, 2019). Hypothyroidism can be congenital or is developed as a child. This condition runs in families and can be inherited from parents (Children's Hospital of Philadelphia, 2019).

Albright's Hereditary Osteodystrophy is a disorder with many signs and symptoms, including short in height, obesity, round face, subcutaneous ossifications, and short fingers and toes (Genetics and Rare Diseases Information Center, 2018). People with this disorder usually lack parathyroid hormone. This causes calcium deficiency in the bones and blood. Deficiency of calcium in the blood can cause numbness, seizures, cataracts, dental issues, and tetany (Genetics and Rare Diseases Information Center, 2018).

Nurture:

"In the United States, approximately 1 in 6 youth ages 2-19 is obese" (Suwannee River Area Health Education Center, 2012-2019). "Centers for Disease Control and Prevention defines obesity in children and young people at or above the 95th percentile for young people" (Suwannee River Area Health Education Center, 2012-2019). Children's lifestyle and eating habits are becoming worse than ever, and it is up to parents/caregivers to make a change. Instead of allowing your child to sit in front of the television with a soda and chips, encourage them to get some fresh air and to snack on a fresh piece of fruit or some celery with peanut butter. With that being said, food intake and food quality, eating patterns, physical activity, and socioeconomic status all fall in the nurture category of obesity.

A child's diet plays a big role in why they are obese. Total food intake, type of food ingested, and eating patterns are all associated with obesity. As a parent, the amount of food you eat is critical. Overweight mothers are more likely to serve their children larger portions and foods high in fat (Student Psychology Journal Volume 2). Social learning theory states that children learn from the actions of people around them, such as parents (Student Psychology Journal Volume 2). If parents are demonstrating unhealthy eating when children are young, it may result in increased fat intake when they are older (Student Psychology Journal Volume 2).

Eating patterns may also have an effect on childhood obesity. An uneven energy distribution throughout the day where less is eaten at breakfast and lunch, and more is eaten at dinner may influence weight gain (Student Psychology Journal Volume 2). Inadequate intake of vegetables, fruit, and milk, and eating too many high-calorie snacks, play a role in childhood obesity. Grain products provide the highest percentage (31%) of daily calories, followed by "other foods" which have limited nutritional value (22% of daily calories). Snacks account for 27% of total daily calories, which is more than the calories consumed at breakfast (18%) and lunch (24%), but not dinner (31%) (U.S National Library of Medicine, 2007).

Another factor of childhood obesity is physical activity. Children and youth are more sedentary than ever with easy access to television, videos, computers, and video games. Data from the 1988-1994 National Health and Nutrition Examination Survey indicated that 26% of American children watched at least 4 hours of television per day, and these children were less likely to participate in vigorous physical activity (American Academy of Pediatrics, 2006). Not only is a sedentary lifestyle an issue, children are not exercising. In a 2002 Youth Media Campaign Longitudinal Survey, 4500 children 9 to 13 years of age and their parents were polled about physical activity levels outside of school hours. The report indicated that 61.5% of 9 to 13 year

olds did not participate in any school activities and 22.6% did not partake in non-organized physical activity outside of school (American Academy of Pediatrics, 2006).

Low family socioeconomic status is associated with increased childhood obesity rates. Fewer resources like recreational programs and parks and access to full service grocery stores has a large impact on the nation's childhood obesity rate (Michigan Medicine, 2016).

Conclusion

It is evident that nature and nurture both play a part in childhood obesity. However, nurture has the greatest influence on childhood obesity. Children are not eating as healthy as they used to and are living a more sedentary lifestyle. With parents constantly on the go, they like what is most convenient. Fast food and microwavable dinners are easily accessible and parents don't have to spend time in the kitchen preparing a meal. Furthermore, with technology evolving, kids are more interested in the latest videogame than going outside and riding their bike. As parents, it is in your control to make a change so that obesity makes a turn for the better. Limit your children to a certain amount of time spent watching TV or playing their favourite videogame. Don't allow them to snack on empty calories such as potato chips and candy. Require a mandatory amount of time for physical activity for at least half an hour. Childhood obesity rates have constantly been rising over the years, but parents can step up and make this a thing of the past.

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