Nutrition Therapy in Childhood Obesity

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- Childhood obesity increases the risk of obesity in adulthood.

- Children whose BMI is greater than the 85th percentile are **six times** more likely to be overweight later .

- **For the child who is obese after 6 years of age**, the probability of obesity in adulthood is significantly greater, if either the mother or the father is obese.

- Obesity that begins in childhood tends to lead to hypertension, elevated LDL cholesterol, and TGs in adults.

In addition, children who have growth failure and under nutrition in utero or in the early years of life tend to **become overweight in later childhood** with subsequent risks of elevated blood pressure, lipid, and glucose levels .

The **adiposity rebound**, which normally occurs in children between 4 and 6 years of age. Children whose adiposity rebound occurs before 5 years of age are more likely to weigh more as adults than those whose adiposity rebound occurs later.

The timing of the adiposity rebound and excess fatness are two critical factors in the development of obesity in childhood, with the latter being the most predictive of adult obesity and related morbidity .

How can I tell if my child is overweight?

BMI is a measure of body weight relative to height. The BMI of children is age- and sex-specific and known as the “BMI-for-age.”

BMI-for-age uses growth charts created by the U.S. Centers for Disease Control and Prevention.

- The main BMI categories for children and teens are

- ❑ healthy weight: 5th to 84th percentile
- ❑ overweight: 85th to 94th percentile
- ❑ obese: 95th percentile or higher

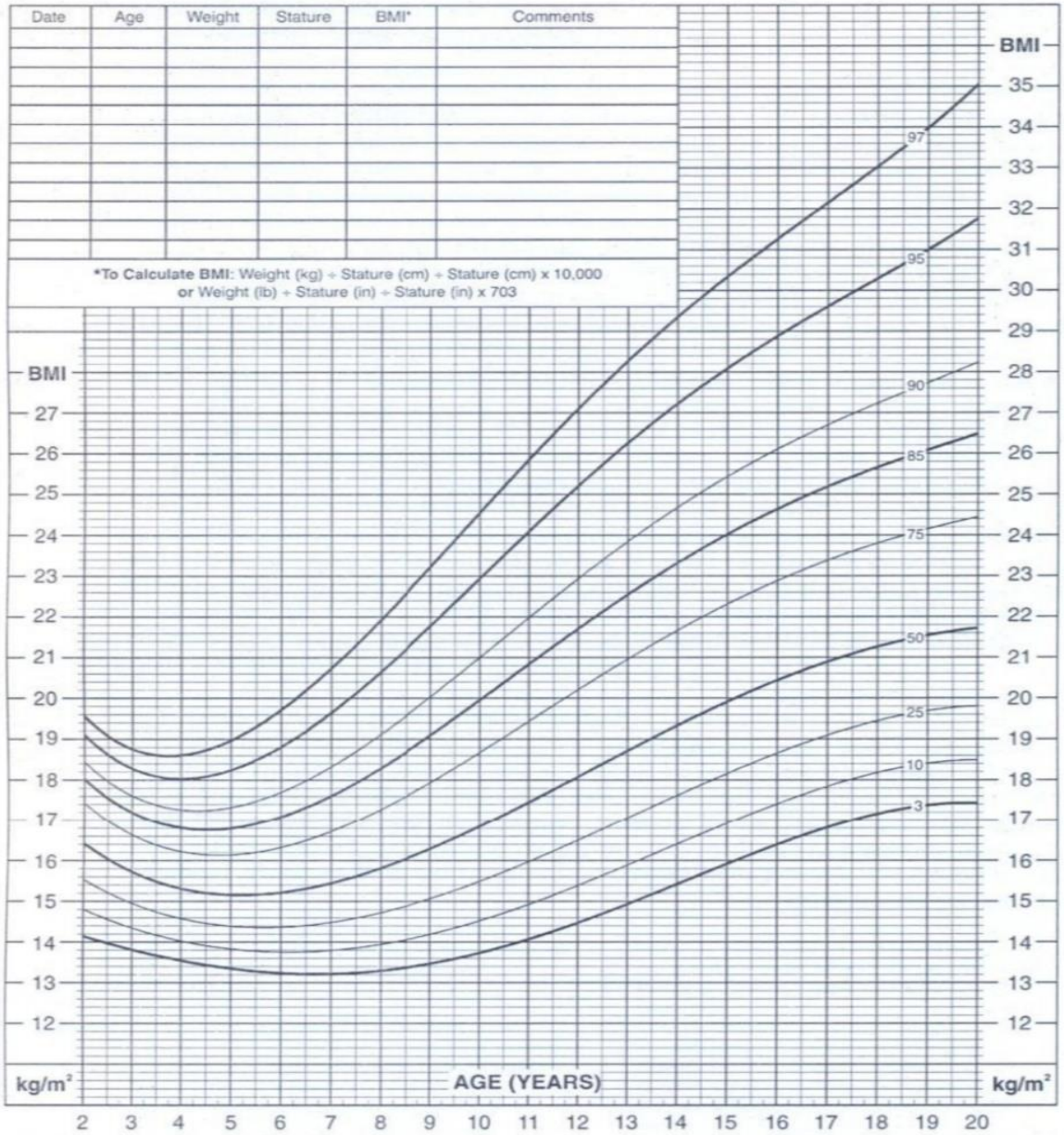
2 to 20 years: Girls
Body mass index-for-age percentiles

NAME _____

RECORD # _____

Date	Age	Weight	Stature	BMI*	Comments

*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



Published May 30, 2000 (modified 10/16/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

CDC
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- The primary goal of treatment is to achieve healthy eating and activity, not to achieve an IBW. For children 7 years of age and younger, the goal is prolonged weight maintenance or slowing of the rate of weight gain, which allows for a gradual decline in BMI as children grow in height. This is an appropriate goal in the absence of any secondary complication of obesity.

- However, if secondary complications are present, children in this age group may benefit from weight loss if their BMI is at the 95th percentile or higher.

- For children older than 7 years, prolonged weight maintenance is appropriate if their BMI is between the 85th and 95th percentile and if they have no secondary complications. If a secondary complication is present, or if the BMI is at the 95th percentile or above, weight loss suggested.

2-7 years

Older than

7 years

- Weight loss (about 0.5 -1 kg per month) is advised.

- If the complications cause serious morbidity , rapid weight loss, may be necessary.

- Balanced micronutrient intake for children includes
  - 45% to 60% of kilocalories from carbohydrates,
  - 25% to 40% from fat,
  - 10% to 35% from protein.

Low vitamin D is predominant in obese children. The accompanying proinflammatory association with diabetes and atherogenic pathways has prompted recommendations to test kindergarten and first grade children.

Children with low levels of vitamin D could have the systemic inflammatory mediators and reduced insulin sensitivity pathways inhibited by vitamin D supplementation .

Intervention strategies require family involvement and support.

Changes to address overweight should include the child's input, **with choices and plans that modify the family's food and activity environment, not just the child's.**

Families are essential for modeling food choices, healthy eating, and leisure activities for their children. Parents influence children's environment by choosing nutrient-rich foods, having family meals (including breakfast), offering regular snacks, and spending time together in physical activity, all of which can be critical in overweight prevention

- The child or adolescent who needs to reduce weight requires attention from family and health professionals. This attention should be directed to all the areas mentioned previously, with **family modification of eating habits** and **increased physical activity**.
- The program should be long term, over the entire growth period and perhaps longer .
- Inactivity often is coupled with sedentary hobbies, excessive TV watching, or prolonged sitting in front of a computer or game screen.

However, there is a new theory that physical inactivity appears to be the result of fatness rather than its cause.

Healthy snack ideas

To help your child eat less candy, cookies, and other unhealthy snacks, try these healthier snack options instead:

•air-popped popcorn without butter

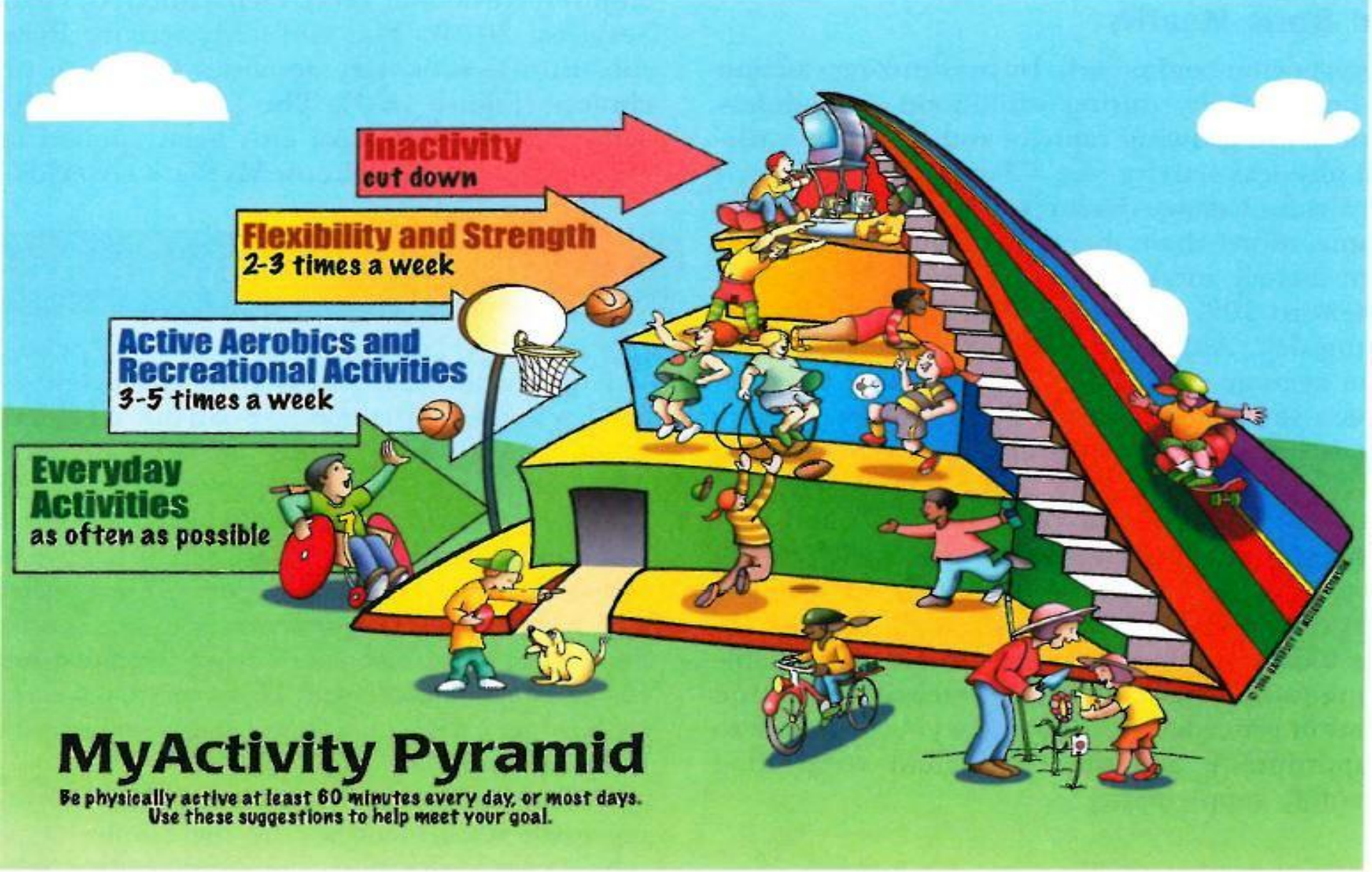
•fresh, frozen, or fruit canned in natural juices, plain or with fat-free or low-fat yogurt

•fresh vegetables, such as carrots, cucumbers

•low-sugar, whole-grain cereal with fat-free or low-fat milk, or a milk substitute

Lower prevalence of obesity are suggested among children who were exposed to the following routines:

- ❑ Regularly eating the meals as a family,
- ❑ Obtaining adequate nighttime sleep,
- ❑ Having limited screen-viewing time



Family Nutrition Education Programs

MyActivity Pyramid

Be physically active at least 60 minutes every day, or most days.
Use these suggestions to help meet your goal: