

Parent's Guide **for the Assessment and Treatment of the** **Overweight Child**

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Do you have a child you think may be overweight or obese? The purpose of this Parent's Guide is to explain how overweight is assessed in adults and children. We discuss some of the essential components of successful approaches to weight management in children. Our goal is to provide you with the basic information you will need as a parent or caregiver of an overweight child. The information in this guide will provide a basis for you to identify professional resources in your community that you can reasonably expect to help you and your family work together to help your overweight child.

➤ Adult Overweight and Obesity

It is relatively straightforward to assess overweight or obesity in adults. Athletic adults who are quite muscular can only be properly assessed by measuring percent body fat. For the majority of adults who are sedentary or lightly to moderately active, overweight and obesity are defined in terms of "Body Mass Index" or BMI. Here are the definitions used in adults:

- "Overweight" is defined as a body mass index (BMI) that falls between 25.0 to 29.9.
- "Obesity" is defined as a BMI of 30.0 or higher.

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How do I calculate BMI?

If you know your weight in **pounds** and your height in **inches**, you can calculate your BMI using the equation below:

$$\text{BMI} = 703 \times [\text{weight}/\text{height}^2]$$

$$\text{So BMI} = 703 \times [(\text{weight in pounds}) \div (\text{height in inches} \times \text{height in inches})]$$

If you know your weight in **kilograms** and your height in **meters**, calculate your BMI by using the following equation:

$$\text{BMI} = [\text{weight}/\text{height}^2]$$

$$\text{So in the metric system, BMI} = [(\text{weight in kilograms}) \div (\text{height in meters} \times \text{height in meters})]$$

If you would like us to do the math for you, visit the Shape Up America! website [www.shapeup.org] for more information about the assessment of overweight and obesity in adults and to use our BMI calculator. If you have had your percent body fat measured and want to understand what it means, we explain it in the Shape Up America! Body Fat Lab on our website and we also provide you with the latest standards for percent body fat in adults.

If you have a BMI or percent body fat that is higher than recommended, you may wish to get help with weight management. Even if you have a BMI that falls within the “healthy zone” of 18.5 to 24.9, you may wish to seek help on weight management:

- If you have recently experienced significant (ten or more pounds) weight gain,
- If you are at high risk for diabetes, hypertension, heart disease or stroke, or
- If you have had your percent body fat measured and learned that it is higher than recommended for a person of your age and gender.
- If you have recently lost weight and are concerned about weight regain

➤ **Childhood Overweight and Obesity**

Unlike assessment of adults, the assessment of overweight in children is **not** simple or straightforward. It is important to keep in mind that some children are simply large for their age rather than overly fat. The correct assessment of a child is vitally important to the child's health and emotional well being. It is important to understand the steps involved in assessing children, but we have to provide you with background information first.

How to Assess the Growth of Children

The Centers for Disease Control and Prevention (CDC) has issued a set of growth charts that are used to evaluate the growth of children. There is one set of charts for females and a separate set for males. Your child's pediatrician will know how to use these charts. Growth assessments every year are important for your child. Should you move, it will be important to move the growth records for your child and to locate a new pediatrician so you can continue to track the growth of your child on these charts. Your goal is to have an accurate historical record of the growth pattern of your child and to update it yearly or more frequently if your child's growth pattern changes unexpectedly or if you are concerned that your child is overweight or underweight. We encourage you to discuss the growth charts with your child's pediatrician and to insure that you understand the growth history of your child as determined by the pediatrician or other qualified pediatric health care professional.

Assessment of Overweight and Obesity in Children

The Centers for Disease Control and Prevention (CDC) now offers specific growth charts that can be used for the purpose of assessing your child's risk for overweight or obesity. The charts utilize the Body Mass Index or BMI, but BMI is not used in children as it is in adults. The use of BMI in adults is straightforward in the sense that you can infer health risk directly from adult BMI. In contrast, a child's BMI is considered relative to that of other children of the same age and gender. This comparison is made by your child's pediatrician using BMI percentiles. The BMI Percentile charts for use in boys and girls were published for the first time by the CDC in the year 2000 and studies show that less than half of the pediatricians use them. The new charts appear at the end of this Guide. Please refer to them as you read the next two sections.

If you are concerned about the possibility that your child may be overweight or obese, we suggest that you carefully discuss the BMI Percentile charts with your child's pediatrician to make sure that s/he is using them and to learn exactly what the BMI Percentile is for your child. ***Your child's BMI percentile is an essential piece of information for assessing the weight status of your child.***

BMI Percentile – What is it and what does it tell you?

The BMI percentile for your child will tell you how your child's BMI compares to the reference population of thousands of children on which the BMI chart is based. For example, if your boy is 8 years old and his BMI falls at the 60th percentile, that means that 40% -- that is 40 out of 100 -- 8 year old boys have a higher BMI than your boy, and 60% -- that is 60 out of 100 -- 8 year old boys have a lower BMI than your child. If we know your child's BMI percentile, we know how to compare your child's BMI to the BMI of other children the same age and gender.

How Do I Determine the BMI Percentile of my Child?

To determine your child's BMI percentile, you need the child's exact height, weight, and age and you need a BMI percentile chart for your child's gender. Here are the steps to determine your child's BMI Percentile:

1. Accurately measure child's height in inches or meters
2. Accurately measure child's weight in pounds or kilograms
3. Calculate child's body mass index or BMI as explained above
4. Determine child's birth date
5. Determine the date of the height and weight measurements in steps 1 and 2
6. Calculate the child's age on the date of measurement of height and weight
7. Select the correct BMI Percentile chart for the child's gender [to avoid error, the charts for girls are pink; the charts for boys are blue].
8. Write an "X" on the chart exactly at the *point of intersection of two perpendicular straight lines*: the first line is drawn through the child's age and the second line is drawn through the child's BMI.
9. Use the curved percentile lines on the chart to determine the percentile on which the "X" falls. If the "X" falls on a percentile line, this is your child's BMI Percentile.

10. If your child's BMI falls BETWEEN two percentile lines, you would say the child's BMI falls between the two percentiles that bracket the "X" (for example, between the 85th and 90th BMI percentiles).
11. As your child grows older, determine your child's BMI percentile every 6 to 12 months. Be sure to mark the point of intersection on the graph each time your child is measured so that you can see the historical growth pattern for your child at a glance. We suggest you safeguard this chart as you would a passport, birth certificate, or any other valuable health record for your child.
12. Record the date, your child's height, weight, BMI, BMI Percentile and the age at which it was determined on a separate log or diary. Keep this as an historical record of the growth of your child. Along with the growth chart, we suggest you safeguard this record as you would a passport or other valuable health record for your child. Update this record every 6 to 12 months or as often as your pediatrician recommends.

The Importance of Accurate Measurement of Height and Weight

Small errors in the measurement of height and weight lead to large errors in the calculation of BMI – and inaccurate determination of BMI Percentile. Your pediatrician or other pediatric health care professional will know how to measure your child's height and weight under standardized conditions using properly calibrated clinical equipment. Accurate information is needed to correctly calculate your child's BMI and to determine the BMI percentile for your child. Because of the way BMI is calculated (the height measurement is squared), small errors in height measurement result in large errors in BMI. Therefore, accurate measurements are essential.

Definition of "Overweight" in Children

If the child's BMI falls at the 95th percentile or higher, the child meets the definition of "overweight" that appears in the *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity 2001*. This definition of overweight is not perfect, but a more definitive assessment of overweight can only be done by your child's pediatrician or other qualified health professional who repeatedly evaluates your child in person. A single determination of your child's BMI percentile is not definitive. It takes several measurements, taken over a period of 18 months to 2 years to really understand the characteristic

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growth pattern for your child. It is worth repeating that a child who consistently tracks at the 95th percentile may be a large child who is not necessarily fat. That is why a pediatrician needs to be consulted for a more definitive assessment. A child who meets the definition of overweight needs to be monitored carefully. Monitoring involves growth measurements (including BMI percentile) at frequent intervals determined by the pediatrician as well as careful review of family eating and exercise habits, and the eating and exercise environment of the child, as discussed below.

Definition of “At Risk for Overweight”

A child whose BMI falls between the 85th and 95th percentiles is considered to be “at risk for overweight.” A child who is at risk for overweight should be further evaluated by a pediatrician or other qualified pediatric health care professional. Careful monitoring of a child who is at risk for overweight is as important as it is in the case of a child who actually meets the definition of overweight. Monitoring involves measurement of BMI at frequent intervals determined by the pediatrician as well as careful review of family eating and exercise habits, and the eating and exercise environment of the child, as discussed below.

Jumping Out of the Percentile Track – A Warning Sign for Overweight

You can expect the BMI percentile of your child to vary a bit from year to year. A small amount of fluctuation is not a cause for concern. However, you should pay attention to any large change or jump in the BMI percentile on which your child is tracking over time. For example, a child whose BMI has been steadily tracking at the 65th percentile for several years, but who suddenly jumps up to the 75th or 80th percentile may be a cause for concern. A pediatrician or other qualified health care professional should carefully evaluate a child whose BMI percentile shows an unexpected change either up (to a much higher percentile) or down (to a much lower percentile). The two warning signs that your child may be overly fat are:

- BMI at the 95th percentile or higher
- BMI percentile jumps out of track to a higher percentile

If your child has either warning sign or both, it is especially important to have your child evaluated by a pediatrician or other qualified pediatric health care

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professional and to follow up with regular evaluations at least every six months, but possibly even more frequently if your pediatrician considers it warranted.

What BMI Percentile Range is “Healthy”?

There is no healthy range for children the way there is for adults. A good sign is consistent tracking on roughly the same percentile over time. On the other hand, if your child is tracking at the 35th percentile and suddenly jumps to the 50th, this may signal an unhealthy change. A trip to the pediatrician for further evaluation is needed.

Definition of Obesity in Children

At this time, there is no government definition of “obesity” in children. A child who meets the definition of overweight may actually be “obese” in the sense of having an excessive amount of body fat to the point that it is a threat to health. But for reasons we discuss below, it is inappropriate to categorize a child as “obese” unless body fat has been measured. Few clinics can measure body fat in children and accepted standards of body fat in children are not yet available. So, from a practical standpoint, it is not appropriate to categorize a child as “obese.” Calling a child “obese” may be harmful in that it stigmatizes a child and may hurt his or her feelings. According to an analysis done by Shape Up America!, as many as one out of four overweight boys and one out of three overweight girls is clinically depressed. Using names that make an overweight child feel even worse is not helpful and should be avoided.

Why is Overweight a Threat to Health?

A BMI at or above the 95th percentile is a strong predictor of obesity in adulthood, especially for children between the ages of 10 and 15. For younger children between the ages of 4 and 10, a BMI at the 95th percentile or higher may also signal that the child is overly fat – but whether such a young child will wind up an obese adult is less certain. Children who are overweight are at greater risk for diabetes, high blood pressure and high blood cholesterol. Type 2 diabetes – once unheard of in children – is now the most common type of diabetes in children. The vast majority of children who have been diagnosed with type 2 diabetes have a BMI at the 95th percentile or above. Furthermore, a recent study shows that approximately one out of five children or teens at the 95th BMI percentile or higher has impaired glucose tolerance. That means they are on

their way to developing type 2 diabetes – a serious disease that raises the risk of heart disease, kidney disease, blindness, nerve disorders and amputations.

➤ **Treatment of Overweight or Obesity in Children**

The studies of the treatment of overweight or obesity in children are few in number. They are limited by the fact that they are not “real world” experiences. The studies may have been done on a “convenience sample” (people who live in close proximity to a research center where the study was done) and the subjects may or may not have had to pay for the treatment they received. The qualifications of the service provider(s) in a research study may be different from those of a regular service provider you may encounter in your community. All of these factors may have influenced the results of the study as compared to the results of a program available in your community. Nonetheless, the studies published to date suggest a number of important findings (described below) that you should consider when you choose a program in your community for your child.

How to Increase The Chances of Successful Treatment

- **The treatment of an overweight child should focus on the entire family.** The eating and exercise habits of the entire family nearly always need to be improved. Efforts to treat the child without addressing the lifestyle of the parents and other members of the family living under the same roof are likely to fail. Targeting only the child for treatment may stigmatize the overweight child and can be counter-productive and even harmful. If you are the caregiver for the child, it is important to face the question of whether the entire family is ready for change.
- In one study of overweight children, the weight loss results were significantly improved when the PARENTS were treated rather than the children.
- The eating and exercise behavior of the PARENTS will be the most important influence on the behavior of the child over the long term. Studies show the powerful effect of parental modeling of healthy behaviors on the behavior of the children. Parents who are themselves willing to eat more vegetables will be more likely to have children who eat more vegetables. Conversely, asking children to eat more vegetables and be more active, when you -- the parents -- are unwilling to “practice what you preach” actually has a negative impact on behavior of children. For

- example, the children eat fewer vegetables if the parent or caregiver does not eat vegetables, but admonishes the children to do so.
- The environment in which the child lives may need to be evaluated and changed. Does the child walk to school? What, if anything, needs to be done to promote safe walking and playing outdoors in your neighborhood? Does the child receive physical education from a qualified instructor at school each day? Is the physical education program one that involves plenty of physical activity and does your child enjoy it? Are after school and weekend recreation programs available that emphasize physical activity? Does the child have his or her own money to spend on food? Do you know what your child is purchasing with that money? What foods and beverages are readily available to the child at school? At home? In the community? How often does the child eat out each day? What food choices is the child making? How much TV, videos, or computer games is the child doing each day? Does your child have unlimited access to TV? Is the TV in your child's bedroom? How much time does the child spend outdoors? Encouraging a child to turn off the TV and go outside and play will help the child be more active. These are a few of the factors that can be important to change in the overweight child's environment.
 - Select a program that teaches parents how to cook foods and prepare meals that are low in fat, and that include plenty of vegetables and fruits.
 - If the child is old enough to cook, make sure (s)he learns healthy cooking techniques as well.
 - Select a program that teaches about portion control and serving sizes. The entire family needs to learn what an appropriate portion or serving size is and how many servings from each food group should be eaten over the course of the entire day. Serving sizes for children are smaller than those for adults.
 - Select a program that teaches the entire family how to manage foods – especially foods that invite overeating. Some programs treat candy, desserts, sweets, cakes, cookies, soda and ice cream as “red light foods” that may not be consumed more often than three or four times a week. It may be necessary to stop bringing red light foods into the house. The cooperation of the entire family will be needed to reduce consumption of red light foods.
 - Since you are the role model, you may need to decrease your soda, candy and sweets consumption.

- You may need to advocate for the removal of candy and soda vending machines in elementary and middle schools. Since childhood obesity is a growing problem, you may find other parents will join you in your efforts.
- You may want to learn what foods are being offered in the school cafeteria and how the foods are being prepared and offered to your child.
- Children need nutritious food and lots of exercise in order to grow properly and remain healthy. As a parent, your first concern is to be a good role model by demonstrating your commitment to an active lifestyle and healthy eating. Beyond that, your role as a parent is to offer healthful choices to your child and to make wise food and exercise choices for yourself. Choosing foods wisely is as important for snacks as it is for meals. Wise food choices are as important in restaurants and at schools as in the home.
- Making time for exercise needs to become a priority and will probably take a great deal of planning. Your exercise habits will influence those of your child.
- As a substitute for rich desserts, consider ending your meal with a piece of fresh fruit.
- You may need to prepare more of your meals in the home where you have more control over the ingredients, preparation methods, and most important of all, over the size of food portions.
- You can teach your child how to eat outside the home by making wiser food choices when you eat out. You may need to choose lower fat foods and consume fried foods only rarely. You may need to choose smaller portions and select water rather than soda to drink with your meal or any other time of the day.
- Select a program that explains the critical importance of exercise for weight management over the long term. Exercise needs to become a family value. Going to bed without exercise is like going to bed without brushing your teeth.
- To get started on a more active lifestyle, after meals consider going for a walk as a family. A 10 minute walk after lunch or dinner is a good start. Visit the Shape Up America! website [www.shapeup.org] to check out how to get started on the Shape Up America! 10,000 steps program.

➤ **What are my responsibilities as a parent or caregiver?**

The most important thing you can do is **model the behavior** you want your child to adopt. If you want your child to eat more vegetables and drink more milk, the

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studies show that you should eat more vegetables and drink more milk. [Note: For children over the age of two, 1% or skim milk is recommended.] If you want your child to exercise more, you should get out there and exercise more yourself. Your own behavior is a message to your child. It is what will influence your child over the long run. You will discover that eating healthier foods and exercise will require **advance planning** or it won't happen. As the parent or caregiver you must take on the responsibility of planning. This may mean planning meals and activities on the weekends since you may not have time to plan during the week. It may also require thinking about shopping well in advance so that you have the right ingredients on hand when you need them. It may require thinking about where you can eat out with your family so that you have healthy choices available. In summary – the two most important responsibilities of a parent or caregiver are **modeling** and **planning**.

My spouse is not willing to change – What can I do about that?

You can not control your spouse and you may have to go ahead and change your own behavior without the support and cooperation of your spouse. It is true that it would be most helpful if you both changed your behavior so that you both transmit the same message to your child. It is most powerful if you both demonstrate the same commitment to healthy eating and exercise. But this may not be possible and a lack of commitment on the part of your spouse should not stop you from doing the best you can to change your own behavior.

➤ **Conclusion**

The assessment of overweight in children is not simple or straightforward. The process of monitoring your child's BMI percentile should involve a pediatrician or other qualified pediatric health care professional. Monitoring of BMI Percentile should begin early in life and continue throughout childhood and the teenage years. The BMI percentile on which your child is tracking over the years is important. A significant jump (either up or down) in BMI percentile should prompt a visit to the pediatrician for further evaluation. A child or teenager whose BMI is at the 95th BMI percentile or higher meets the current definition of "overweight." A child or teenager whose BMI falls between the 85th and 95th BMI percentiles is "at risk" for overweight.

The treatment of childhood obesity should not focus on the overweight child. Rather the treatment approach should focus on the behavior of the entire family, the behavior of the parents, siblings, and any other caregivers or role models

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living in the home. The child's living environment (including home, school and neighborhood) may need to be carefully evaluated and changed to encourage healthier habits. Because of the powerful influence on children of role models, programs for weight management in adults and teenaged siblings living in the home can influence the eating and exercise habits of overweight children living in the same home. The best programs for adults will teach healthier eating and exercise habits which will, in turn, influence the habits of the children. If you are selecting a program for your child, it should be a program that involves the entire family. If one member of your family refuses to participate, you will have to decide whether you can proceed anyway. It may not be the right time to move ahead if more family conflict will result. On the other hand, the quiet determination of a parent or caregiver can send a powerful message to an overweight child.

The Shape Up America! website is intended to address the lifestyle of adults. It is not designed for children or intended for children. However, there are many resources on the Shape Up America! website that can be used to improve your entire family's eating and exercise habits. For example, if you use the Shape Up America! CyberKitchen, the recipes and meal plans are appropriate for the entire family. Both children and adults require a great deal of physical activity to maintain a healthier body weight. If you use the Shape Up America! Fitness Center to improve your exercise habits, you may want to choose some activities that you can enjoy with your child. For people of any age, the goal is to achieve healthy eating habits and a level of physical activity that is sufficient to maintain a healthy weight or body fat content.

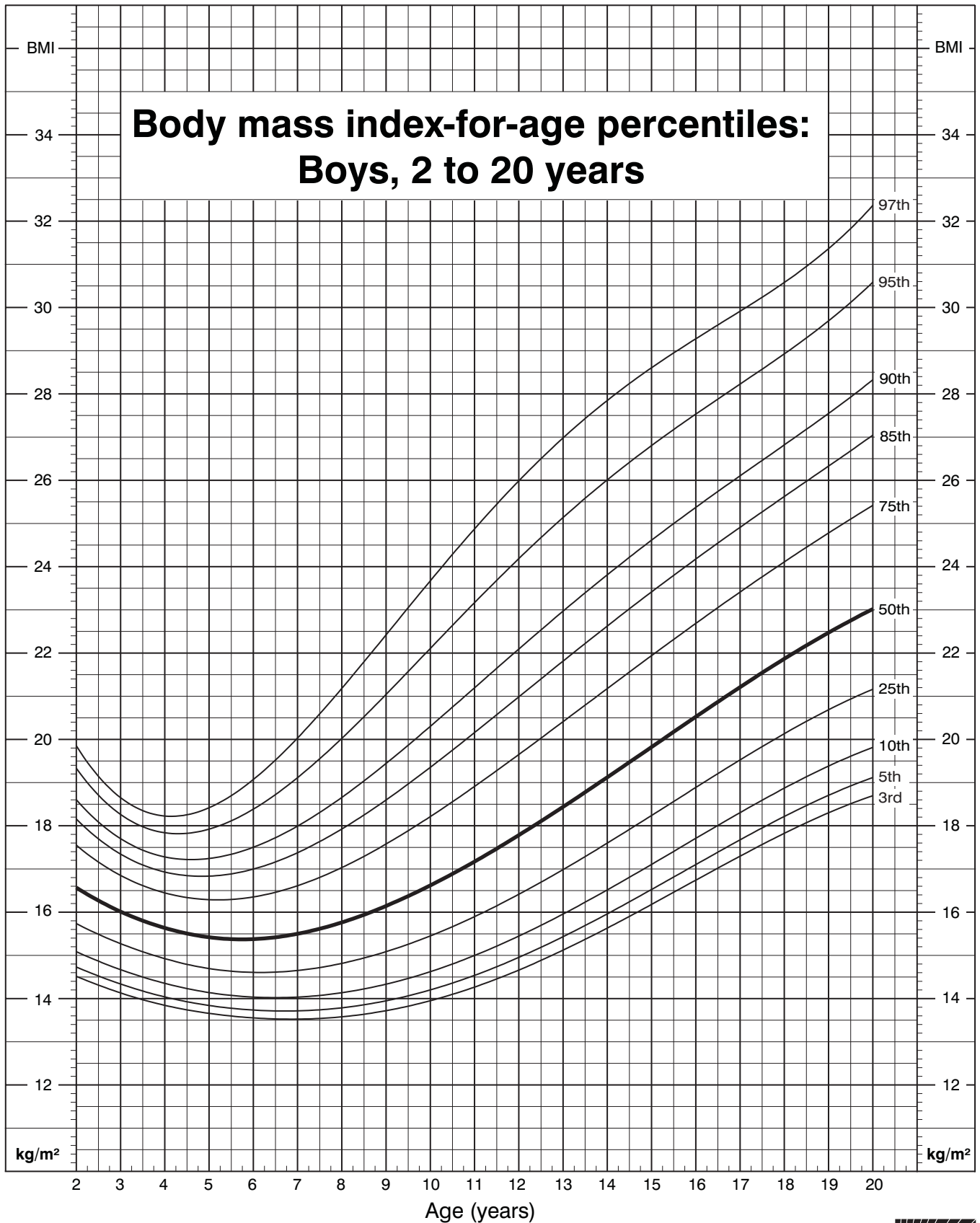
A Final Comment

One of the key benefits of becoming a member of Shape Up America! is email access to our staff of professionals. We do not offer medical advice over the internet, but our professional staff has more than 20 years of weight management experience and they possess the appropriate training and credentials to answer your questions, provide support and offer guidance on weight management issues.

If you would like more information about membership in Shape Up America!, visit our website at www.shapeup.org.

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CDC Growth Charts: United States



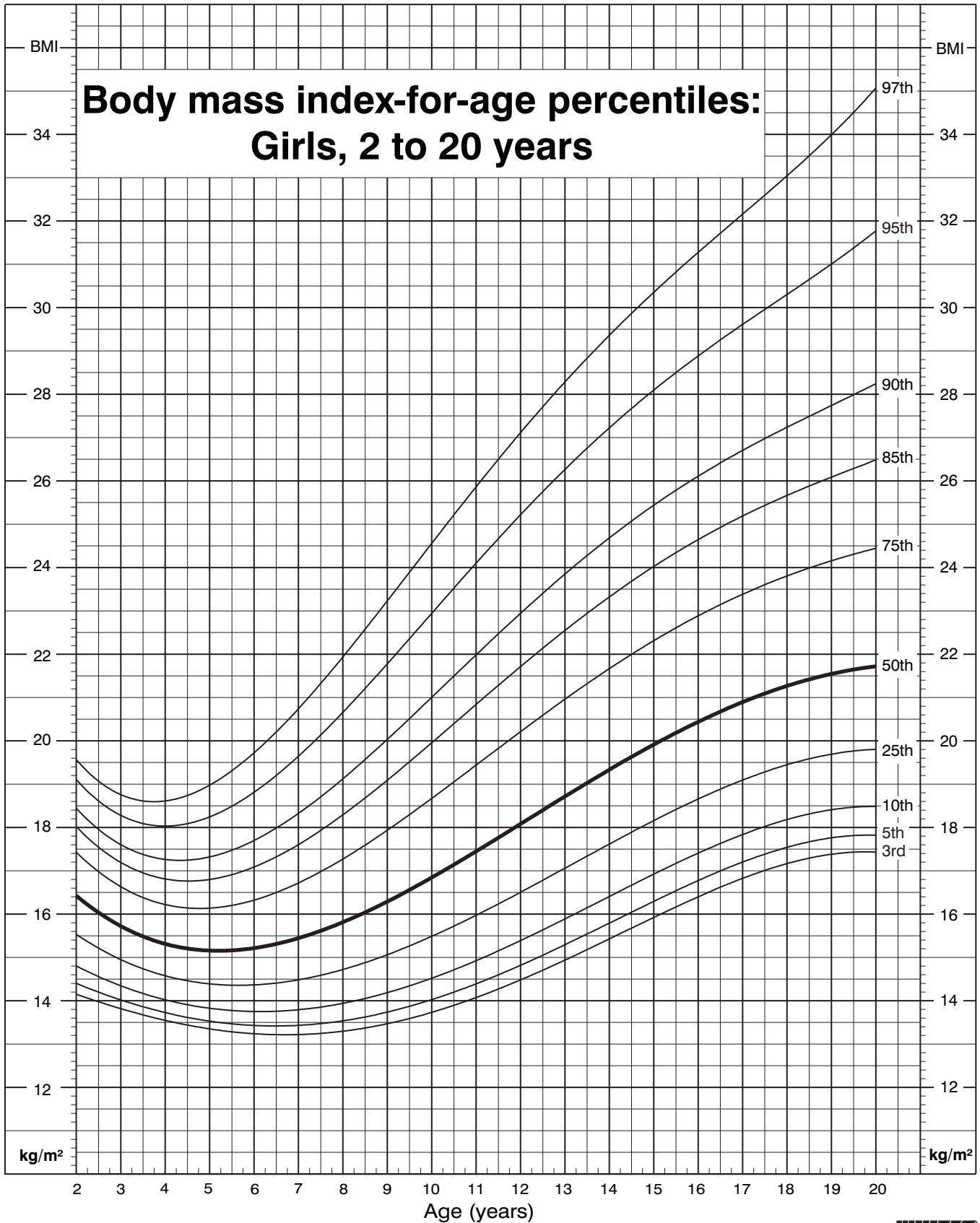
Published May 30, 2000.

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).



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