

Growth Charts

What Are Growth Charts?

Kids grow at their own pace. Big, small, tall, short — there is a wide range of healthy shapes and sizes among children. Genetics, gender, nutrition, physical activity, health problems, environment, and hormones all play a role in a child's height and weight. And many of these things can vary widely from family to family.

So how do doctors figure out whether kids' height and weight measurements are "healthy"? Whether they're developing on track? Whether any medical problems are affecting growth?

Doctors use growth charts to help answer those questions. Here are some facts about growth charts and what they say about a child's health.

Why Do Doctors Use Growth Charts?

Growth charts are a standard part of your child's checkups. They show how kids are growing compared with other kids of the same age and gender. They also show the pattern of kids' height and weight gain over time, and whether they're growing proportionately.

Let's say a child was growing along the same pattern until he was 2 years old, then suddenly started growing much more slowly than other kids. That might mean there is a health problem. Doctors could see that by looking at a growth chart.

Does a Different Pattern Mean There's a Problem?

Not necessarily. Doctors consider the growth charts along with a child's overall well-being, environment, and genetic background. For example:

- Is the child meeting other developmental milestones?
- Are there other signs that a child is not healthy?
- How tall or heavy are the child's parents and siblings? Was the child born prematurely?
- Has the child started puberty earlier or later than average?

Are All Kids Measured on One Growth Chart?

No. Girls and boys are measured on different growth charts because they grow in different patterns and at different rates.

And one set of charts is used for babies, from birth to 36 months. Another set is used for kids and teens ages 2–20 years old. Also, special growth charts can be used for children with certain conditions, such as Down syndrome, or who were born early.

What Measurements Are Put on the Charts?

Until babies are 36 months old, doctors measure weight, length, and head circumference (distance around the largest part of the head).

With older kids, doctors measure weight, height, and body mass index (BMI). It's important to look at and compare weight and height measurements to get a full picture of a child's growth.

Why Is Head Circumference Measured?

In babies, head circumference can give clues about brain development. If a baby's head is bigger or smaller than most other kids' or the head stops growing or grows too quickly, it may mean there is a problem.

For example, an unusually large head may be a sign of hydrocephalus, a buildup of fluid inside the brain. A head that's smaller than average may be a sign that the brain is not developing properly or has stopped growing.

What Are Percentiles?

Percentiles are measurements that show where a child is compared with other kids. On the growth charts, the percentiles are shown as lines drawn in curved patterns.

When doctors plot a child's weight and height on the chart, they see which percentile line those measurements land on:

- The higher the percentile number, the bigger a child is compared with other kids of the same age and gender, whether it's for height or weight.
- The lower the percentile number, the smaller the child is.

For example, if a 4-year-old boy's weight is in the 10th percentile, that means that 10% of boys that age weigh less than he does and 90% of boys that age weigh more.

Being in a high or a low percentile doesn't necessarily mean that a child is healthier or has a growth or weight problem. Let's say that the 4-year-old boy who is in the 10th percentile for weight is also in the 10th percentile for height. So 10% of kids are shorter and weigh less than he does, and most kids — 90% — are taller and weigh more. That just shows that he's smaller than average, which usually doesn't mean there is a problem. If his parents and siblings are also smaller than average, and there are other signs that he's healthy and developing well, doctors would likely decide that there's no reason to worry.

What's the Ideal Percentile for My Child?

There is no one ideal number. Healthy children come in all shapes and sizes, and a baby who is in the 5th percentile can be just as healthy as a baby who is in the 95th percentile.

Ideally, each child will follow along the same growth pattern over time, growing in height and gaining weight at the same rate, with the height and weight in proportion to one another. This means that usually a child stays on a certain percentile line on the growth curve. So if our 4-year-old boy on the 10th percentile line has always been on that line, he is continuing to grow along his pattern, which is a good sign.

What Could Signal a Problem?

A few different growth chart patterns might signal a health problem, such as:

- **When a child's weight or height percentile changes from a pattern it's been following.** For example: If height and weight have both been on the 60th percentile line until a child is 5 years old, and then the height drops to the 30th percentile at age 6, that might suggest a growth problem because the child is not following his or her usual growth pattern. But changing percentiles doesn't always mean there's a problem. Many kids may show changes in growth percentiles at some points in development, when it's normal for growth rates to vary more from child to child. This is particularly common during infancy and puberty.
- **When kids don't get taller at the same rate at which they're gaining weight.** For example: If a boy's height is in the 40th percentile and his weight is in the 85th percentile, this means he's taller than 40% of kids his age, but weighs more than 85% of kids his age. That might be a problem. On the other hand, if he's in the 85th percentile for both height and weight and follows that pattern over time, that usually means that he's a healthy child who's just larger than average.

If you have any questions about your child's growth — or growth charts — talk with your doctor.

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