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A Guide To Normal Growth In Children

Growth begins when a baby is conceived, and continues throughout life. It is a complex process, influenced by a variety of factors that are only beginning to be understood. As parents, we keep track of our children's growth in many ways. We are reassured when the doctor says our baby is growing well. We notice how quickly new clothes are outgrown; we observe our child's size in relation to that of classmates and playmates.

If a child is not growing as expected or is lagging far behind classmates in size, most parents become concerned and seek the advice of their pediatrician. The first thing a concerned parent is likely to learn is that there is a wide range of "normal" for both height and weight, and the smallest child in the class may or may not have a medical problem relating to size. Not all short children have abnormal growth.

There are about 2 million children in the United States who are shorter than 98% of children their age. Most of these boys and girls are normal in every way, but some have problems that can have long-lasting effects on their health and growth if they are not diagnosed and treated.

Short stature is not the only cause for concern: A tall boy who stops growing needs an evaluation long before he stands out as the shortest child in his class. A child who "shoots up" to stand inches taller than his classmates usually is perfectly normal, but also may have a problem affecting growth.

How can a parent tell whether to be concerned about a child's size and growth? If there is a wide range of normal for height and weight, how does a parent know what is abnormal? This article answers these and other questions that parents often ask about growth and provides basic information about normal and abnormal patterns of growth (what to expect from infancy through adolescence).

- recognition and evaluation of growth problems (how to tell if your child has a growth problem, and what to do about it)
- psychological and emotional aspects of short stature (how to understand and make life easier for the short child)
- information resources for parents of short children and for those interested in growth and growth problems

The Normal Pattern of Growth

A 2-month-old fetus (a baby before it is born) weighs about 1/10 of an ounce (2.8 grams) and is 1 1/4 inches (3.2 cm) long; all its body organs are present and all are almost completely formed. At this point, the process of growth begins to speed up: By 5 months the fetus may be growing as fast as 1 inch (2.5 cm) per week.

If this incredible rate of growth were to continue, it would translate into a rate of more than 4 feet (1.2 meters) per year. Growth slows toward the end of pregnancy as the baby fills the uterus. At birth, full-term babies are

usually 19 to 21 inches (48 to 53 cm) long and weigh from 6 to 8 1/2 pounds (2.7 to 3.8 kg). As you can see by looking at Table 1, growth is also rapid during the first year of life.

Most infants grow by as much as 10 inches (25.4 cm) and more than double their birth weight by their first birthday. Growth slows between 1 and 2 years of age. An average child grows about 5 inches (12.7 cm) between his or her first and second birthdays. After 2 years of age, growth continues at a slower but steady rate of 2 1/2 inches (6.3 cm) per year until about the age of 11 in girls and 13 in boys, when the growth spurt that goes along with adolescence usually begins.

This pubertal growth spurt lasts about 2 years and is accompanied by sexual development (growth of pubic hair, development of sex organs and beginning of menstruation in girls). Normal growth stops when the child is between 16 and 18 years of age, when the growing ends of the bones fuse.

Table 1: Normal Growth Rates During Childhood

Age	Growth Rate (in inches and cm per year)
Birth to 1 year	7 to 10 inches (17.8 to 25.4 cm)
1 to 2 years	4 to 5 inches (10 to 12.7 cm)
2 years to puberty	2 to 2 1/2 inches (5 to 6 cm)
Pubertal growth spurt	
Girls	2 1/2 , to 4 1/2, inches (6 to 11 cm)
Boys	3 to 5 inches (7 to 12 cm)

Growth Charts

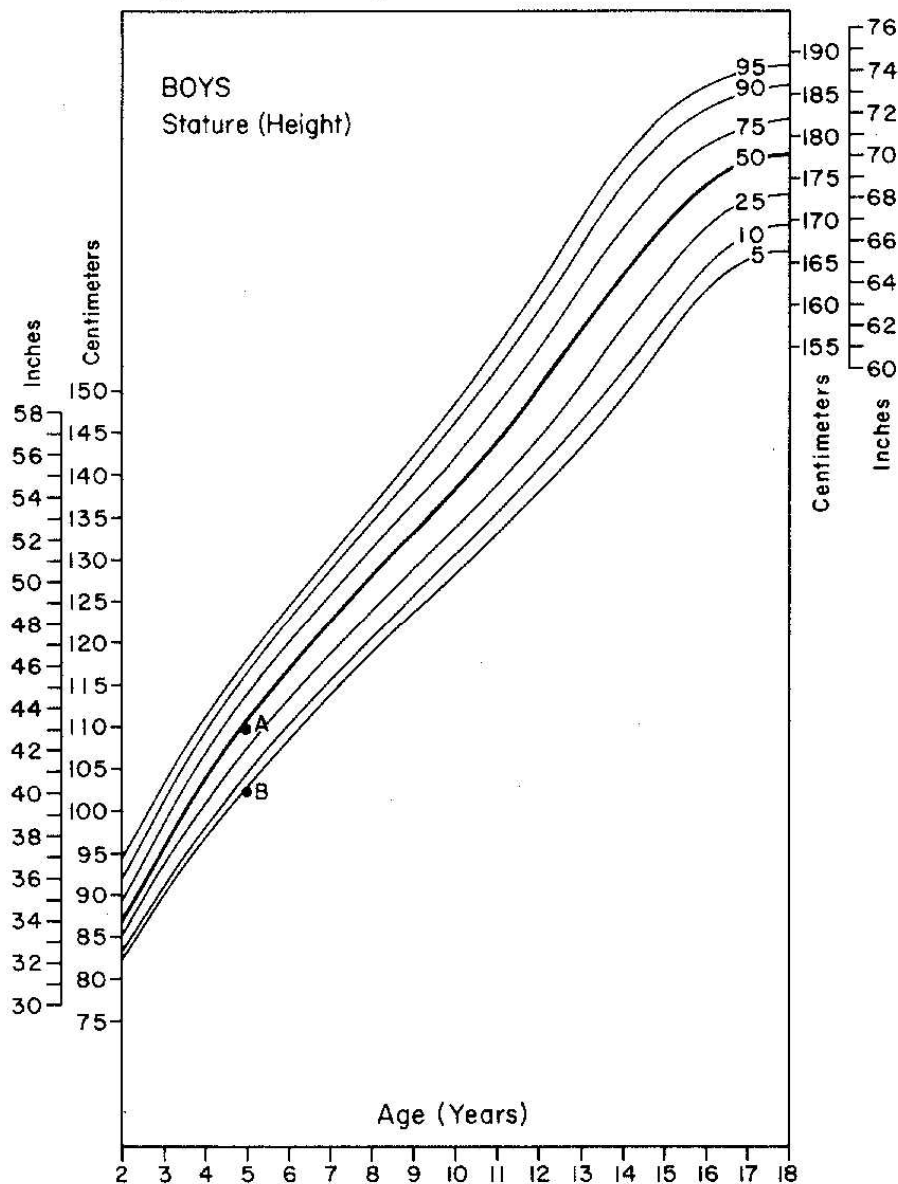
The most valuable tool for assessing a child's growth is a well-kept growth chart made up of accurate measurements. A child's height and weight should be measured and marked on his or her growth chart as part of every visit to the doctor. Children under the age of 3 years should be measured at least every 6 months; children over 3, every year. If there is any concern about growth, measurements should be made as often as every 3 months until the growth pattern becomes clear.

The most widely used growth charts are constructed by measuring many boys and girls of all ages and breaking the range of their heights and weights into percentiles, or percents. These percentiles are represented on the growth charts (Figures 2 and 3) by the curved lines marked 5, 10, 25, 50, 75, 90 and 95. The spaces between the percentile lines are called channels. Age in years is marked along the bottom of the chart. Height in inches and centimeters is marked along the sides. The 50th percentile line is the average height for any given age.

To use the chart, we find the child's age along the bottom and draw a line going up, parallel to the two sides of the chart. Then we find the child's height along the side and draw a line across, marking the point where the child's age line and height line cross.

By looking at the boys' growth chart (Figure 2), for example, we can tell that a 5-year-old boy who is 43 inches (109.2 cm) tall is average sized (50th percentile) for his age (point A on the growth chart). A 5-year-old boy, who is only 40 inches (101.6 cm) tall, however falls at about the 5th percentile line (point B on the growth chart). This means that if you measured 99 other boys who were exactly 5 years old, chances are that 95 of them would be taller than this 40-inch boy and 4 would be shorter.

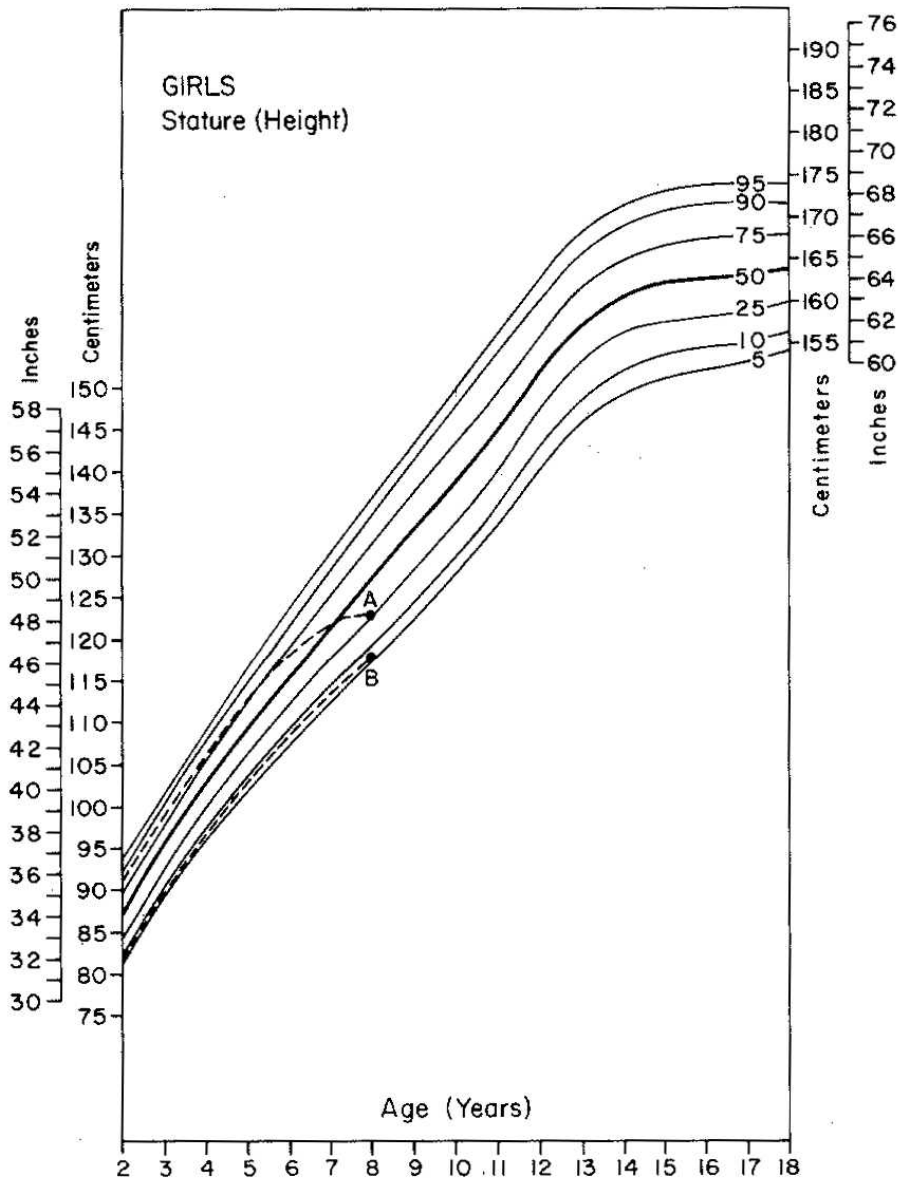
Figure 2: Boys' Growth Chart



The growth chart shows us how a child's height and weight compare to those of other children of the same age. It also shows us a child's growth pattern over time. After 2 years of age, most children maintain steady growth throughout childhood along one of the percentile lines or channels. Children over 2 years of age who move away from their established growth curve deserve a thorough evaluation by a pediatrician, no matter how tall they are.

Look at the girls' growth chart (Figure 3). The child whose growth is shown on curve A is more likely to have a serious problem than the child whose growth is shown on curve B. The reason is that although Child B is shorter, she continues to grow as expected—in this case, along the 5th percentile line. While Child A is still taller than 25% of children her age, the growth chart shows that her rate of growth has slowed seriously over the past 2 years. She needs to be evaluated to determine the cause of her growth failure.

Figure 3: Girls' Growth Chart



Recognition and Evaluation Of Growth Problems

Causes for Concern

Many parents are concerned about their children's growth and want to learn more about growth and growth problems. They want to know when to worry and when not to worry about their children's growth.

The following questions can serve as guidelines for parents who are worried about their children's growth. While not necessarily indicating a problem, a "yes" answer to any of these questions signals a need to discuss the question with your child's pediatrician.

- Is my child the shortest or tallest in the class?
- Is my child still wearing last year's clothes or outgrowing clothes much faster than usual?

- Is my child unable to keep up with other children the same age in play?
- Is my child growing less than 2 inches or more than 3 inches a year?
- Is my child complaining about his or her size?
- Is my child showing signs of early sexual development (before age 7 in girls and before age 9 in boys)?
- Has my 13-year-old girl or 15-year-old boy failed to show any signs of sexual development?

Remember that one of the most important things parents can do to protect a child's health and growth is to have their child examined regularly by a pediatrician. A child's height and weight should be measured and marked on his or her growth chart as part of every visit to the doctor. A pediatrician should check any child whose height is below the 5th percentile line on the growth chart or who moves away from a previously normal growth curve.

Diagnosis of Growth Problems

The first thing parents should do if they are worried about their child's growth is take the child to a pediatrician. The pediatrician will first decide whether the child's size or growth curve is really cause for concern. A long list of possible causes of short stature and growth failure must be considered.

Table II lists some of the problems and diseases that can cause poor growth. An important thing to realize in looking at this long and complex list is that there are many possibilities, which need to be explored, and it is helpful to approach the problem in an organized way. Your pediatrician may consult with a pediatric endocrinologist (a specialist in children's hormone and growth problems) about the best way to assess a particular child.

Your pediatrician will need to measure your child's height over a period of 6 to 12 months to evaluate the child's present growth rate. These measurements should be plotted on a growth chart along with as many earlier measurements as possible. Your child's pediatrician or school often will have records of yearly height and weight measurements.

Your pediatrician will ask many questions about your child's present health, diet, appetite, habits and past illnesses and injuries. Information about the mother's pregnancy, labor and delivery are important because these may provide a clue to the cause of the child's short stature. Questions about your child's progress in school, general mood and home life are important in getting to know your child as a person, but also may shed light on your child's growth problem. Your pediatrician will ask about the health of other family members and will want to know the heights of parents, grandparents, close relatives, and brothers and sisters.

Be sure to tell your pediatrician about any diseases or problems that run in the family, as well as any history of early or late puberty (growth spurt and sexual development) in family members.

Your pediatrician will perform a thorough physical examination to look for signs of many of the causes of short stature listed in Table 11. An MRI of the brain may be done to check on the condition of the pituitary gland. Blood tests can tell the doctor about the condition of the kidneys, bones and thyroid gland. The level of somatomedin in the blood may be checked. Somatomedin is a substance that provides an indirect measure of the amount of growth hormone in the body.

An X-ray of the child's hand and wrist may be done to check the child's bone age. In some short children, the maturity of the bones lags behind the child's actual age. This is called a delayed bone age. The bone age may be delayed for a variety of reasons, so it is not very helpful in finding the cause of short stature. It is, however, very useful in determining the growth potential of the short child. This is one time that delayed maturity is a good sign.

A 9-year-old boy who has a bone age of 7 years, for example, has 2 years more growth potential, or "room to grow" than the average 9-year-old. This is because the development of his bones is more like a 7-year-old boy's than like a 9-year-old's. Some of the changes that occur with the development of the bones throughout childhood are shown in X-rays (Figure 4)

Figure 4: X-ray Changes as Bones Develop

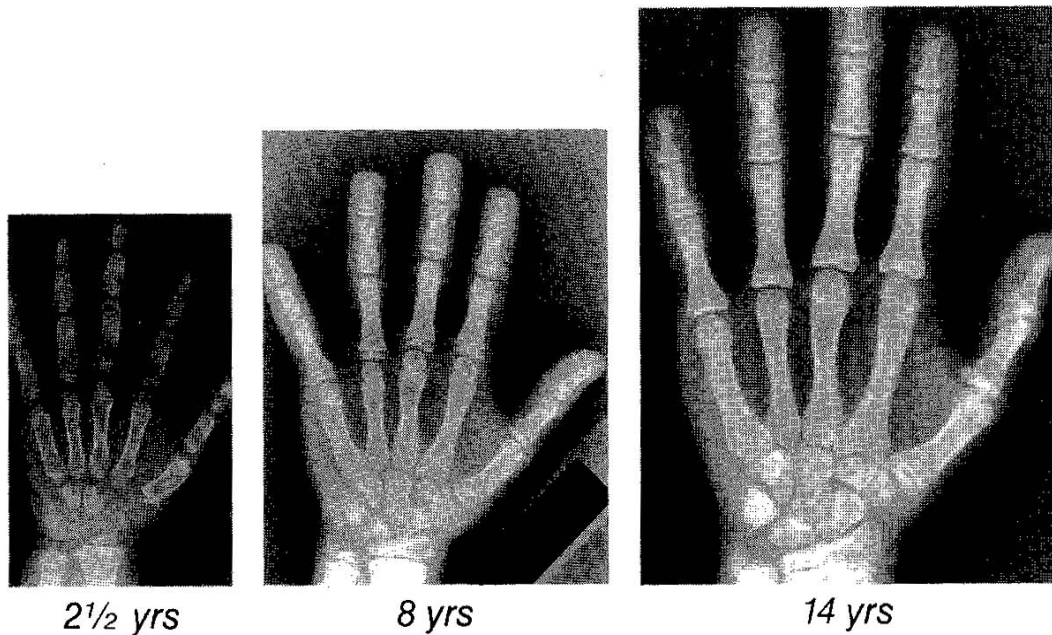


Table II: Possible Causes of Short Stature and Growth Failure

- **Familial short stature-"heredity"** (short parents are more likely to have short children)
- **Constitutional growth delay-delayed puberty, delayed growth spurt, normal adult height**
- **Illnesses and diseases that affect the whole body (systemic diseases)**
 - Nutritional deficiencies--under nutrition or malnutrition
 - Digestive tract disease-bowel disease
 - Kidney disease
 - Heart disease
 - Lung disease
 - Diabetes mellitus-"high sugar"
 - Severe stress and/or deprived environment
- **Endocrine (hormone) diseases**
 - Lack of thyroid hormone-hypothyroidism
 - Too much cortisol (stress hormone)-Cushing's syndrome
 - Lack of growth hormone (GH)-GH deficiency
- **Problems in the tissues where growth occurs (congenital conditions)**
 - Intrauterine growth retardation-slow growth before birth caused by infections, smoking, alcohol use during pregnancy
 - Chromosome abnormalities-Turner syndrome, other genetic syndromes
 - Skeletal abnormalities (bone diseases)-defects in size, shape, growth of bones
- **Idiopathic-no cause can be found**

By referring to a special chart, it may be possible to predict adult height based on the child's present bone age and height. It is important to remember that these predictions are only educated guesses. The child's adult height will be the result of many factors, including heights of parents, the child's general health and state of nutrition, the age at which puberty begins, and the length and vigor of the pubertal growth spurt. In general, height predictions are more reliable as the child becomes older.

Tests for growth hormone secretion should be performed after other causes of growth failure have been considered and ruled out. Growth hormone is secreted by the pituitary gland in quick bursts and does not last

long in the blood, so checking a single blood sample for growth hormone is not likely to be helpful. Deep sleep, vigorous exercise and certain drugs are known to stimulate the secretion of growth hormone. The amount of growth hormone in the bloodstream is measured by taking one or more small blood samples over a 1 to 4-hour period. This is usually done as a brief hospital stay. The results of this test will show if the child's growth problem is caused by a deficiency (lack) of growth hormone.

The amount of testing a child needs depends on what the doctor finds at each step of the evaluation. A short child who is healthy and growing at a normal rate may be observed throughout childhood, while a child whose growth has stopped, will need more involved testing. The evaluation process may make more sense if we take a closer look at some of the variations of the normal growth pattern and some of the causes of abnormal growth.

Variations Of The Normal Pattern Of Growth

Although most children follow the usual pattern of growth described earlier, a small but significant number of children have growth patterns that differ from this typical model. Some of these less common but normal patterns of growth include shifting channels in infancy, familial short stature, constitutional growth delay and familial tall stature.

Shifting Channels In Infancy

It is not unusual for normal children under 2 years of age to cross percentile lines in either direction. This happens because the factors that affect the growth of the fetus are different from those that govern growth after birth.

Babies who are small at birth often shift to a higher growth channel during the first few months of life, as they "catch up" to their own growth potential. On the other hand, large or average-sized babies who have short parents may have slower-than-expected growth during the first months of life, as they settle into their own growth channel.

A downward shift in growth during the first 1 to 2 years of life may not be a cause for concern if the baby is healthy, thriving and has a good diet, and if height and weight are shifting together. The doctor who sees a baby like this will ask many questions about the baby's habits and behavior, and will perform a careful examination to make sure there are no physical problems. The baby's height and weight should be carefully measured and marked on his or her growth chart every 3 months.

At some point between the child's first and second birthdays, he or she should begin to maintain steady growth along the "new" percentile channel. After this "new" growth curve is established, height and weight should be checked and plotted on the growth chart every 3 to 6 months until age 3 and every 6 to 12 months after that. As long as the child is healthy and growing at a normal rate, no special treatment is needed.

Familial Short Stature

Short parents tend to have short children. This is the result of genes that are passed from one generation to the next. Your pediatrician needs to know the heights of parents and relatives when evaluating a short child. By taking the midpoint of the parents' heights, the child's expected range of height can be predicted. The height of a short child with short parents often will fall within a normal range of height when this midpoint is taken into account.

The term familial short stature applies to children who:

- Are small for their age (growth is at or below the 5th percentile line on the growth chart).
- Come from short families.
- Are growing at a normal rate.
- Do not have any signs or symptoms of diseases or conditions that affect growth.

Children with familial short stature are likely to enter puberty and have a growth spurt at a normal age, their bone age will be the same as their chronological age (age in years), meaning that there is no delay in bone maturity. They can expect to reach an adult height about the same as that of their parents. Sometimes the diagnosis of familial short stature can be made only by excluding other causes of short stature. Certain laboratory tests may be necessary to exclude other causes of short stature. There is no known treatment that will increase the adult height of these children beyond their inherited potential.

Constitutional Growth Delay

This type of growth pattern is one of the most frequent causes of parental concern about growth. Constitutional growth delay is the term used to describe children who:

- Are small for their age (growth is at or below the 5th percentile line on the growth chart).
- Are growing at a normal or near normal rate.
- Have a delayed bone age (usually 1 to 4 years behind their chronological age).
- Are late entering puberty.
- Do not have any signs or symptoms of diseases or conditions that affect growth.

Constitutional growth delay is much more common in boys than in girls. These children often fall behind the height of other children their age before they start school. If good growth records are available, one or more periods of slow growth during early childhood may be seen. These children do not catch up in their growth until after the pubertal growth spurt. They continue to grow at the slow, steady rate of childhood for longer than most of their friends. When they finally enter puberty at age approximately 15 to 18 for boys and 14 to 16 for girls, they have a normal growth spurt and normal sexual development. Their adult height usually is similar to that of their parents.

Constitutional growth delay sometimes runs in families. Often there is a history of delayed growth and adolescence in the child's father and other male relatives. As with familial short stature, the diagnosis of constitutional growth delay may depend upon excluding other causes of short stature. To do that, your pediatrician may order some laboratory tests before making the diagnosis.

The problems faced by some children with constitutional growth delay result from their short stature and delayed sexual development. A 14-year-old boy with severe growth delay may look like a 9-or 10-year-old—a real disadvantage when it comes to making the football team or getting a date for the school dance.

In many cases, support from parents and reassurance from your pediatrician that he is normal, that he can expect to mature sexually and that he will reach a normal adult height, is all that is needed to help him adjust. In some cases, where the teenager's emotional pain is extreme, the endocrine specialist may consider using male hormones (androgens) to speed up the delayed timetable of puberty. These hormones cause a growth spurt and the onset of sexual development, but they also speed up bone maturation. This means that the growing ends of the bones fuse and growth stops at an earlier age than if no treatment were given. The result may be a small decrease in adult height.

Some experts think that giving growth hormone to children with constitutional growth delay may increase their growth rate without speeding up bone maturation. This treatment is experimental, and studies are planned to see if growth hormone will help these children.

Abnormal Growth

Although most children who are very short or tall are healthy and normal, there are children who have diseases or conditions that affect their growth. Remember that a child's growth rate over time is a more important clue to the presence of a growth problem than his or her size. For this reason, regular, accurate measurements plotted on a growth chart are very important: A change in the children's growth rate may provide the first hint of an underlying problem.

The known causes of growth failure and short stature fall into 3 major groups:

- Systemic diseases (diseases that have effects on the whole body).
- Endocrine diseases (deficiencies or excesses of hormones).
- Congenital conditions (present at birth).

Sometimes no cause can be found, this is called idiopathic short stature. Abnormal tall stature is most often caused by an endocrine disease or a genetic condition. The purpose of this section is to provide an overview of the causes of growth failure*

Systemic Diseases

Systemic diseases are those that have effects on the whole body. They impair growth by affecting the child's overall health and well-being. Any disease that is severe or poorly controlled can have a negative effect on a child's growth.

Nutritional problems are the most common cause of growth failure worldwide. Good nutrition is the cornerstone of normal growth. A balanced diet with the right number of calories and the right amount of protein is necessary to meet the needs of growing children. Several diseases of the digestive tract (gastrointestinal

diseases) can cause food to be poorly absorbed, so that the body cannot use food properly. Failure to absorb nutrients and energy from food often leads to growth failure.

Some of the symptoms of nutritional or bowel disease includes:

- poor weight gain
- abnormal weight for height
- frequent nausea, vomiting, diarrhea or constipation
- abnormal bowel movements
- Severe bloating or gas when milk or dairy products are eaten.

Treatment of digestive tract problems often involves a special diet. Children usually have normal growth after the problem is correctly diagnosed and treated.

Diseases of the kidneys, heart and lungs may lead to growth failure by causing the buildup of undesirable substances in the body and by interfering with the body's use of nutrients and energy. Children with diabetes, or "high sugar, sometimes grow poorly even when their blood sugar is fairly well controlled.

Severe stress can cause growth failure. Children who live in very unhappy or disturbed homes may stop growing for a while, then start growing again when their home life improves.

Endocrine Diseases

Endocrine diseases are those which involve deficiencies or excesses of hormones. A deficiency exists when there is not enough of a hormone in the body; excess means there is too much of a hormone in the body.

Hypothyroidism, or deficiency of thyroid hormone, can halt growth completely and can occur at any time. Growth failure may be the first sign of this disease in childhood. Other symptoms which may appear later include:

- lack of energy and concentration
- constipation
- dry, rough skin and hair
- hoarseness
- feeling cold when others are warm
- Coarsening ("thickening") of facial features.

Every child who is growing at a slower than normal rate should have the simple blood test to check for thyroid deficiency. This disease is treated easily by taking a thyroid pill every day. The child with growth arrest from hypothyroidism usually "catches up" and returns to his or her previous growth channel after treatment begins.

Cortisol (stress hormone) excess, or Cushing's syndrome, is a less common cause of growth failure in children. In this disorder, weight often increases while height stays the same. Too much cortisol also causes thinning of the skin, easy bruising, softening of the bones, and muscle wasting and weakness. It may be caused by over activity of the pituitary gland, a tumor in the adrenal glands (where cortisol is made) or overmedication with cortisol pills used to treat asthma and other diseases. A blood test is used to check the amount of cortisol in the blood. If there is too much cortisol, additional tests are needed to find out what is causing the excess. The treatment depends on the cause. Early diagnosis of this problem is important because the longer it lasts, the less chance the child has of returning to a normal height channel.

Growth hormone (GH) deficiency may occur at any time during infancy or childhood. There are many causes of GH deficiency. Most of them involve damage to the pituitary gland before, during or after birth. The major sign of GH deficiency is a marked slowing of growth, usually to less than 2 inches (5 cm) a year. Children with GH deficiency have normal body proportions and normal intelligence, some may be overweight for height and have problems with low blood sugar. GH deficiency is diagnosed by doing special blood tests to look for GH in the blood. It is treated by giving the child injections of GH several times a week until the child reaches an adult height in the normal range or until the growing ends of the bones fuse.

Congenital Conditions

Congenital conditions are present at birth and result from a problem that occurs before the baby is born. A number of factors can affect the mother, the fetus or the placenta (the organ in the uterus that links mother and fetus) to cause intrauterine growth retardation, or slow growth within the uterus.

Babies who are born prematurely (early) but who are of normal size for their age usually will "catch up" and fall within the normal range for height and weight by 2 to 3 years of age, assuming that they are in good health. Some full-term babies are smaller than expected at birth. If a full-term baby weighs over 4 1/2 pounds and does not have any other problems, there is a good chance that he or she will "catch up" and be normal size by 2 to 3

years of age. Full-term babies who are very small at birth (under 4 pounds) are likely to remain small throughout life. No treatment is known to be consistently effective in increasing their height.

Many genetic syndromes (groups of signs and symptoms of a known abnormality) are associated with short stature and growth problems. One of the most common is Turner syndrome, which occurs only in girls. Girls with Turner syndrome have a missing or misshapen sex chromosome ("package" of genes) in many of their cells. The cause of this defect is not known. These girls have underdeveloped ovaries (female sex glands where eggs and female hormones normally are produced), they are under 5 feet in height as adults, and their intelligence is normal. Turner syndrome is diagnosed by doing a special blood test (karyotype) to look for damaged or missing sex chromosomes. Growth failure may be the only sign of this condition. Female hormones (estrogens) must be given to bring about full sexual development at the time of puberty because the girl's underdeveloped ovaries will not produce these hormones. Research is being done to see if growth hormone may increase the adult height of these girls.

There are more than 50 bone diseases that can affect height and growth. Children with one of these skeletal dysplasias, or chondrodystrophies, are very short and have abnormal body proportions, intelligence is normal. One of the most common genetic bone disorders is achondroplasia, a disease in which a child's arms and legs are short in proportion to body length, the head is often large and the trunk is normal size. Skeletal dysplasias involve abnormal formation and growth of cartilage and bone. No treatment is effective in increasing adult height.

Idiopathic Short Stature

Children with idiopathic short stature do not fall into any of the normal or abnormal categories described above. As far as anyone can tell, they are normal physically and mentally and extensive lab test results are normal. Yet they will fall below the normal range for height as adults, and below what would be expected, given their parents heights. No treatment to increase adult height is known at this time. The effect of GH treatment on these children has not been studied yet.

True idiopathic short stature is much less common than subtle forms of the conditions described earlier. A careful review of the child's history and physical exam often reveals clues that are easily overlooked. Often there is overlap between conditions. A common example of this is the short child who has elements of both familial short stature and constitutional growth delay.

Not all causes of short stature and growth failure can be treated, but parents and doctors should be alert for changes that may signal the onset of a treatable growth problem. Even if the parents are reassured that their short child is healthy and normal, emotional problems related to size may exist and it is just as important to recognize and treat these problems as it is to recognize and treat the child's physical problems.

Psychological and Emotional Aspects of Short Stature

Since children who are short often face teasing and other forms of emotional stress, they may have problems coping and adjusting. The following story highlights some of the problems any short child may face, regardless of the diagnosis.

Josh is a 12-year-old boy with constitutional growth delay. Although he has grown at a normal rate throughout childhood, he is below the 5th percentile line on the growth chart. His bone age is delayed by 2 to 3 years, so he is likely to reach a normal adult height. He has always been the smallest child in his class, and the size difference is getting more noticeable as some of his classmates begin their growth spurts:

Josh looks more like a 4th grader than a 7th grader. He is having school problems this year, after moving into a new junior high school. His teachers report that "he's either a clown or a bully in class, and he just doesn't pay attention." He likes sports and is good at soccer, but the coach doesn't want to let him try out for the team—he is afraid Josh will get hurt. The older boys at school sometimes pick him up and carry him around and call him "Peewee" and "Squirt." He has started spending a lot of time alone in his room and doesn't seem interested in anything. After his last visit to the pediatrician, he said, "I'm sick of hearing how tall I will be in 10 years. I'm a shrimp now, and that's all that matters."

Although many short children adapt well to their size and may never have psychological problems because of being short, Josh's story is not unusual. Our society places positive emphasis on height. Children (or adults) who are short may be the victims of teasing, name-calling, cruelty and prejudice. Different aged children will have different concerns and problems depending on their level of development and maturity. For instance, a preschooler may worry that it is his fault that he is not growing. Regression (acting like a younger child) may be seen in school-aged children, while teenagers are likely to be concerned about dating, driving and discrimination in school, sports and the job market.

Any child may deal with these frustrations by becoming depressed (withdrawn and unhappy) or by "acting out" (behaving in an angry, aggressive hurtful way). Whatever the behavior, it is important for parents to try to understand the feelings behind their child's actions. If you feel things are getting out of control or are more than you can handle, talk to your pediatrician, he or she can give you some suggestions or direct you to someone who can help.

The Short School-Aged Child

Josh is experiencing some of the common and predictable problems faced by school-aged children who are short. Family, teachers and other children have a difficult time treating a short child according to age rather than size. Sometimes discussing this tendency with teachers and friends (young and old) may be helpful in overcoming it. Although Josh looks like a 9-year-old, he is 12. Being treated as if he were 9 makes it easy for Josh to act younger than he really is-and perhaps he feels safer and more secure in a dependent, immature role. Acting younger does not make him happier, but it is safer because less is expected of him. Facing challenges is an important part of growing up and, like any child, the short child needs to have chances to succeed as well as to fail.

There is a natural tendency for parents to shelter their short child from the outside world, but children need not be shielded completely from reality. A healthy approach is to provide love, encouragement, support and skills that will help the child deal with the "big" world and develop self-confidence and a sense of responsibility. Focus on your child's strengths. Look for things the child does well and give him the chance to do his best. Be excited about his achievements, whatever they are.

One of the reasons Josh is having school problems this year is that he has just transferred to a different school and has to face new teachers and new classmates who are not sure how to act around him. If a child is in the same school for several years, he often will develop a special role in the class and the other children will get to know him and stop thinking of him as different. In other words, he becomes accepted. A change (moving, transferring to another school) is like starting all over again with teasing and name-calling. Some children, subjected to this kind of treatment, just give up, withdraw and do not make new friends. Sometimes an older or bigger child serves as "protector" or "bodyguard" for the small child. This may be helpful for the short child, as long as he does not depend on his "bodyguard" to fight all his battles.

The Short Child and Sports

Another issue facing Josh and his family involves sports. Sports are an important part of life for many children, and there is no reason why short children cannot participate and excel in athletic activities. Many sports require intelligence, strength and endurance more than tall stature. Soccer, tennis, karate, judo, gymnastics, wrestling, skiing, skating, squash, handball, racquetball, horseback riding, horse racing, bowling, golf, track, swimming-there is a long list of activities that give short children (and adults) a chance to compete successfully. A short child, like any other child, should be encouraged to find a sport he or she enjoys, work hard at it and do his or her best.

Making Life Easier for the Short Child

The most important step in making life easier for a short child is also the hardest, and that is recognizing and accepting the child's size. Children need to feel loved and valued just as they are, whether short or tall, skinny or fat. Parents who constantly focus on a child's height (or lack of it) may make the child feel that it is not okay to be the way he or she is. Once parents come to terms with their child's size, they can talk about it with the child in an open and realistic way.

Children may have a hard time putting their feelings into words, but that does not mean they do not have feelings about being small. Short children know they are short by the time they reach school age, if not before. The short child may be relieved to have parents who can help him to identify and express his feelings about being different.

In addition to conveying a basic feeling of acceptance, there are some very practical ways a parent can help to make life easier for a short child. The following ideas, based in part on a section in Kate Phifer's book, *Growing Up Small*, may be helpful:

1. Make the physical environment at home as comfortable as possible for the child. Walk through his or her daily routine and see how things look from a lower eye level. This is something parents and their child can do together. It is hard, for example, to hang up your coat if you can't reach the hanger. Lowering rods and hooks in closets solves this problem. Children may do a better job of combing their hair if there is a mirror placed so

they can see more than the top of their head. Steady footstools or stepladders throughout the house can make a big difference in how easily a child can take care of himself. Whatever changes you make around the house, make them as simply and quickly as you can. Don't make a "big deal" out of what you are doing, or make the child feel that he or she is causing trouble by being small.

2. Teach your child ways of coping with the physical environment away from home. This may include practice in "speaking up" when he or she is stuck behind a high counter or needs help reaching a doorknob. Help your child to think about situations in public that cause awkwardness or embarrassment, and then help the child to come up with ideas for handling those situations. Help your child rehearse a response ("role-play") until he or she feels ready to try it out in the real world to see how it works. It may take a few tries, but it should be worth the effort.
3. Help your child learn some of the social skills that may be taken for granted. Take your child with you when you go out, and teach him or her how to order food in a restaurant, pay the cashier at the store, and ask for the right size in the shoe department. Have your child's friends over often and help your child make them feel welcome. Encourage your child to join in group activities if he or she would like to. It may be hard at first, but it often gets easier as the children get to know each other.
4. Discuss your child's size with teachers and friends (young and old). Explain how important it is that your child be treated according to age, not size. It is hard to resist the urge to carry around a cute and cuddly 5-year-old who looks 3, but it is important to treat the child like any other 5-year-old. This is true at home as well.
5. Helping with chores and jobs around the house is part of growing up for many children. It helps the child develop a sense of responsibility and gain a feeling of pride and satisfaction. Short children do not need to be excused from sharing in household chores. With a little creativity, a short child should be able to do almost anything around the house, the yard, or the school, comfortably and safely.
6. Dress your child according to age, not size, even if it sometimes means having clothes altered. A 6-year-old, who is dressed in toddler clothes, complete with snap seams on the legs, most likely is going to be treated like a toddler. Going along with fads is part of being a teenager. Learning to sew may be one answer for the teen that cannot find the right style in the right size.
7. Encourage your child to learn skills that allow for competition, no matter what his or her size. Music, drama, or dancing lessons, 4H clubs, sports-there are many activities that give children a chance to develop special skills and learn to work and play with others. Local schools and recreation departments are good sources of information about activities for children.

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