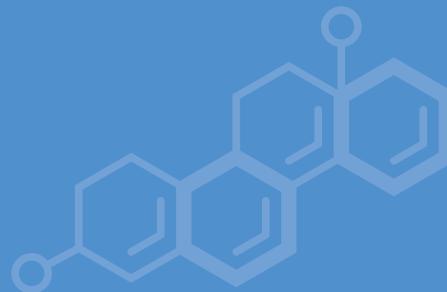


# HORMONES AND CHILDHOOD GROWTH

## WHAT YOU NEED TO KNOW



The endocrine system is a network of glands and organs that produce, store, and secrete hormones, which are really important in a child's growth, especially during puberty. Hormones play a big role in an adolescent's development and overall health. Hormone disorders can lead to early puberty, delayed puberty and other health issues.

### PUBERTY FACTS

Puberty is the time of life when a child develops into an adult. It usually begins as early as age 7½ to 8 and as late as age 13 in girls, and between ages 9 and 14 for boys.

At this time, a girl's ovaries and a boy's testes will begin to function. Puberty occurs when a part of the brain called the **hypothalamus** begins a hormone releasing process that increases sex hormones—**estrogen** in girls and **testosterone** in boys. This leads to the physical changes of puberty:

-  Breast development and menstruation (a period) in girls
-  Growth of the penis, testicles, lowered voice, and facial hair in boys
-  Growth spurts of bones and muscles and a rapid increase in height
-  Changes in body shape and size

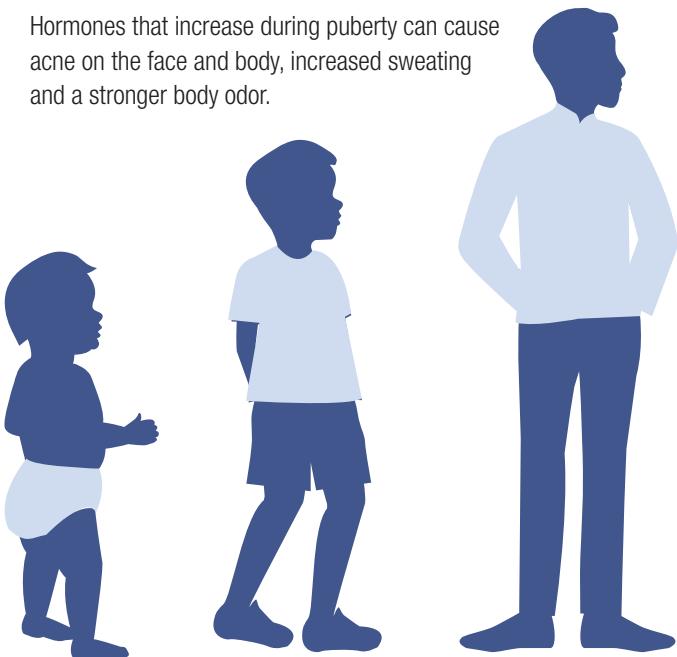
 Most likely, your child's delayed or precocious puberty won't need treatment. But, if you or your teen are concerned, it never hurts to see a doctor.

**DELAYED PUBERTY** is when a teen goes through body changes later than the usual age range. For girls, it can mean no breasts by age 13 or no menstrual periods by age 16. For boys, it means no growth of the testicles by age 14. Being a "late bloomer" is the most common cause of delayed puberty. If the condition isn't caused by a medical problem, then it usually doesn't need treatment.

**PRECOCIOUS PUBERTY** is the appearance of sex features—testicular enlargement in boys and breast development in girls—in boys younger than age 9 and girls younger than 7½ or 8.

**PREMATURE ADRENARCHE** refers to early pubic hair, acne, and adult body odor in boys and girls. These are thought to result from increased secretion of weak androgens from the adrenal gland. The majority of these children do not require treatment for this unusual pattern of development. In a few cases, however, this may be a sign of a hormone imbalance.

Hormones that increase during puberty can cause acne on the face and body, increased sweating and a stronger body odor.



Visit [endocrine.org](http://endocrine.org) for more information.

Editor: Alicia Diaz-Thomas, MD, MPH



## DID YOU KNOW?

Delayed puberty can run in families. Many teens who go through puberty late have parents, siblings, and other family members who had similar experiences with puberty.

## DIAGNOSIS

A doctor will carefully evaluate your child's medical and family history including: birth history, sexual development, medications (including exposure to natural medicines, people using testosterone creams or lavender or tea tree oils in the house), illnesses, and emotional changes or injuries that could affect a child's development.

## TREATMENT

Depending on the underlying condition causing your child's early or late development, medication may or may not be needed.

For children undergoing early pubertal development, your doctor may discuss whether the use of a medication to delay puberty until a more normal time would be needed.

The vast majority of children with late puberty have a "late bloomer" pattern of growth called constitutional delay of growth and development. These children typically require no medical treatment.

If a child has a delayed puberty arising from an inability of the body to make the needed hormones, a hormone replacement regimen is prescribed. This regimen will aim to mimic the normal pubertal tempo. Some children will need to remain on these medications into adulthood.

Growth hormone deficiency (GHD) is a rare condition. Children with GHD may receive treatment with daily injections of a prescription medicine. The best results occur when GHD is treated early. Some children need treatment until adolescence; others need it into adulthood.



## QUESTIONS TO ASK YOUR DOCTOR

- What should my child's height be at this age?
- Why is my child growing slowly?
- Does my child need treatment?
- Should I take my child to a pediatric endocrinologist?



**Patients have questions. We have answers.**

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