

Understanding Early Puberty in Boys

Boys go through puberty as they grow and develop into young adults. Sometimes boys go through puberty earlier than we expect. This handout will tell you about early puberty in boys, how we evaluate and treat early puberty and the long-term effects of early puberty.

WHAT IS EARLY PUBERTY?

Early puberty is when your son starts showing the first signs of puberty before he is 9 years old. This can be normal, but might require evaluation by a pediatric endocrinologist.

WHAT IS NORMAL PUBERTY?

Normal puberty is when children's bodies start to grow and develop into young adult bodies. Boys usually start to go through puberty between the ages of 9-14 years. When your son starts to go through puberty, his gonads (testes) and adrenal glands (glands that sit on top of the kidneys) release hormones. These hormones cause the first signs of puberty, which are an increase in the size of the testes and length of the penis, body odor, underarm hair, pubic hair and acne (pimples). Over time, boys will develop later signs of puberty, such as increased muscle mass, stronger bones, voice deepening and a growth spurt.

There are 2 types of puberty that make up the entire pubertal process. These are:

- **Adrenal puberty**

This is when the adrenal glands make hormones that cause the first signs of puberty; body odor, underarm hair, pubic hair and acne (pimples).

- **Gonadal puberty**

This is when the pituitary gland (a small gland in the brain that controls other glands in the body) makes hormones (FSH and LH) that tell the testes to increase in size and make testosterone.

WHAT CAUSES EARLY PUBERTY?

The causes of early adrenal puberty and early gonadal puberty are different.

Early adrenal puberty: Sometimes, early adrenal puberty is normal. Other times, a problem with the adrenal glands can cause your son to have early adrenal puberty.

Early gonadal puberty: There are 2 types of early gonadal puberty, which have different causes. These are:

- **Gonadotropin dependent puberty**

This type of puberty is caused by the pituitary gland making the hormones FSH and LH, which tell the testes to make testosterone. This can be caused by tumors, radiation or trauma in the central nervous system or can be idiopathic. This means we have not found a cause of the early gonadal puberty.

- **Gonadotropin independent puberty.**

This type of puberty is caused by the testes working on their own or exposure to medication or products with hormones in them.

HOW DO WE EVALUATE EARLY PUBERTY?

Our evaluation of your son's early puberty begins with a discussion about your son's signs of puberty and a physical exam. If your son has signs of early puberty, we will typically have him get an X-ray of his left hand and wrist called a **bone age**. A bone age tells us how much your son's bones have matured. It can also help us figure out if your son should have further evaluation with blood tests.

Your son might have a blood test to help us measure your child's hormone levels. This will help us figure out if your son has gonadotropin dependent or independent puberty. It will also help us figure out if there is a concern about the adrenal glands. Depending on the results of the laboratory testing further radiology testing may include a head MRI.

HOW DO WE TREAT EARLY PUBERTY?

The type of treatment we give to your son depends on the type of early puberty he has.

If your son has early adrenal puberty, he might not need any treatment. If your son is overweight and has early adrenal puberty, losing weight can help slow down puberty. If the puberty is caused by elevated hormones we can give him medication to decrease the hormone levels.

If your son has early gonadal puberty and it is happening slowly and with no serious causes, he might not need any treatment. If the gonadal puberty is caused by high hormone levels, we can give your son medication to decrease the hormone levels. He will take this medication until he has reached an appropriate age to start puberty. This can help your son reach a normal adult height and help him look and feel more like his true age.

WHAT IS THE OUTLOOK FOR MY SON'S EARLY PUBERTY?

Your son should do quite well if he needs to have treatment for his early puberty.

HOW CAN I HELP MY SON WHO HAS EARLY PUBERTY?

You can reassure your son that these changes are not different from other children – they are just happening earlier. Your son might be self-conscious about these early changes. This is an important time to listen and respond to questions and concerns he might have. You should continue to treat your son appropriately for his age and continue to help him with self-esteem.

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