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## Delayed puberty in girls

Delayed puberty in girls occurs when breasts don't develop by age 13 or menstrual periods do not begin by age 16.

Puberty changes occur when the body starts making sex hormones. These changes normally begin to appear in girls between ages 8 to 14 years.

With delayed puberty, these changes either don't occur at the normal age, or if they do, they don't progress normally. Delayed puberty is more common in boys than in girls.

### Causes

In most cases of delayed puberty, growth changes just begin later than usual, sometimes called a late bloomer. Once puberty begins, it progresses normally. This pattern runs in families. This is the most common cause of late maturity.

Another common cause of delayed puberty in girls is lack of body fat. Being too thin can disrupt the normal process of puberty. This can occur in girls who:

- Are very active in sports, such as swimmers, runners, or dancers
- Have an eating disorder, such as anorexia nervosa or bulimia
- Are undernourished

Delayed puberty also may occur when the ovaries produce too little or no female hormones. This is called hypogonadism.

- This can occur when the ovaries are damaged or are not developing as they should.
- It can also occur if there's a problem with the parts of the brain involved in puberty.

Certain medical conditions or treatments can lead to hypogonadism, including:

- Celiac disease
- Inflammatory bowel disease (IBD)
- Hypothyroidism
- Diabetes mellitus
- Cystic fibrosis

- Sickle cell disease
- Anorexia nervosa
- Liver and kidney disease
- Autoimmune diseases, such as Hashimoto thyroiditis or Addison disease
- Chemotherapy or radiation cancer treatment that damages the ovaries
- A tumor in the pituitary gland
- Turner syndrome, a genetic disorder

## Symptoms

Girls begin puberty between ages 8 and 14. With delayed puberty, your child may have one or more of these symptoms:

- Breasts do not develop by age 13
- No pubic hair
- Menstruation does not start by age 16
- Short height and slower rate of growth
- Uterus does not develop
- Bone age is less than your child's age

There may be other symptoms, depending on what causes delayed puberty.

## Exams and Tests

Your child's health care provider will take a family history to know if delayed puberty runs in the family.

The provider also may ask about your child's:

- Eating habits
- Exercise habits
- Health history

The provider will perform a physical exam. Tests may include:

- Blood tests to check for levels of certain growth hormones, sex hormones, and thyroid hormones
- LH response to GnRH blood test
- Chromosomal analysis or other genetic testing
- MRI of head for tumors
- Ultrasound of ovaries and uterus

An x-ray of the left hand and wrist to evaluate bone age may be obtained at the initial visit to see if the bones are maturing. It may be repeated over time, if needed.

# Treatment

The treatment will depend on the cause of delayed puberty.

If there is a family history of late puberty, often no treatment is needed. In time, puberty will begin on its own.

In girls with too little body fat, gaining a bit of weight may help trigger puberty.

If delayed puberty is caused by a disease or an eating disorder, treating the cause may help puberty to develop normally.

If puberty fails to develop, or the child is very distressed because of the delay, hormone therapy can help start puberty. The provider will:

- Give estrogen (a sex hormone) at very low doses, either orally or as a patch
- Monitor growth changes and increase the dose every 6 to 12 months
- Add progesterone (a sex hormone) to start menstruation
- Give oral contraceptive pills to maintain normal levels of sex hormones

## Support Groups

More information and support to understand more about your child's growth can be found at:

The MAGIC Foundation -- [www.magicfoundation.org](http://www.magicfoundation.org) [<https://www.magicfoundation.org>]

Turner Syndrome Society of the United States -- [www.turnersyndrome.org](http://www.turnersyndrome.org) [<https://www.turnersyndrome.org>]

## Outlook (Prognosis)

Delayed puberty that runs in the family will resolve itself.

Some girls with certain conditions, such as those with damage to their ovaries, may need to take hormones their entire lives.

## Possible Complications

The estrogen replacement therapy may have side effects.

Other possible complications include:

- Early menopause
- Infertility
- Low bone density and fractures later in life (osteoporosis)

## When to Contact a Medical Professional

Contact your provider if:

- Your child shows a slow growth rate

- Puberty does not begin by 13 years of age
- Puberty begins, but does not progress normally

A referral to a pediatric endocrinologist may be recommended for girls with delayed puberty.

## Alternative Names

Delayed sexual development - girls; Pubertal delay - girls; Constitutional delayed puberty

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