DELAYED PUBERTY

An organism has passed the usual age of onset of puberty with no physical or hormonal signs.

♀ Symptom ♂ Male & Female

About Delayed puberty

Puberty (Pic. 1) is described as delayed puberty with exceptions when an organism has passed the usual age of onset of puberty (in girls 11 years, in boys 13) with no physical or hormonal signs that it is beginning. Puberty may be delayed for several years and still occur normally, in which case it is considered constitutional delay, a variation of healthy physical development.

Delayed puberty in girls is described by these factors:

- No breast development by 13 years, or no menarche by 3 years after breast development (or by 16). (Pic. 2)

Delayed puberty in boys is described as:

- No testicular enlargement by 14 years, or delay in development for 5 years or more after onset of genitalia enlargement. (Pic. 3)

Conditions which can cause delayed puberty include every diseases which leads to malnutrition such as coeliac disease, inflammatory bowel disease, principally Crohn's disease (a type of inflammatory bowel disease), or anorexia nervosa because there are lack of substituents to produce enough hormones.

Diseases which affect some of endocrine glands can cause delayed puberty. For testicle there are mumps, orchitis, Coackieievirus B, testicular failure, radiation, trauma, tumors or other inflammation, which all can reduce testosterone production and decrease hormonal levels.

Also every disease with impact on ovary can change hormonal ballance and leads to delayed puberty. In pituitary gland there is very often tumours which change the secretion of hormones. Another disorders with hormonal deficiencies and imbalances include hypothyroidism and Cushing's syndrome (a collection of signs and symptoms due to prolonged exposure to cortisol). But not only organs with direct connections with reproductive system can delay the onset of puberty. There are chronic renal failure, cystic fibrosis or Fraiser syndrome which all leads to deficiency of hormones. Irradiation of body, toxines, surgery, drugs or polytraumas (the condition of a person who has been subjected to multiple traumatic injuries) with long convalescence may postpone puberty.

Hypogonadism

Hypogonadotropic hypogonadism, also known as secondary or central hypogonadism is a condition which is characterized by hypogonadism due to an impaired secretion of gonadotropins, including follicle-stimulating hormone (FSH) and luteinizing hormone (LH), by the pituitary gland in the brain (results in a delay or stop of pubertal sexual maturation).

Mumps

Mumps is a contagious disease that is spread from person to person through contact with respiratory secretions, such as saliva from an infected person. The common symptoms of mumps include inflammation of the salivary glands, pancreas, and testicles; fever, and headache. Inflammation leads to scarring of the testicular
tissue which reduces the production of testosterone. Testosterone has androgenic effects which at puberty include a deepening of the voice, growth of facial hair (such as the beard) and axillary (underarm) hair.

**Orchitis**

Ischemic orchitis may result from damage to the blood vessels of the spermatic cord during inguinal herniorrhaphy, and may in the worst event lead to testicular atrophy. Atrophied testicles also produce less hormones. Low amount of hormones is not able to trigger puberty in right time.

**Testicular/ovarian tumour**

When the cancer is not spread in both testicles/ovaries, a man/woman with one remaining testis/ovary has enough tissue which still can produce hormones. A man/woman who lost both testicles/ovaries needs to take hormonal substitution (any form of hormone therapy wherein the patient, in the course of medical treatment, receives hormones, either to supplement a lack of naturally occurring hormones or to substitute other hormones for naturally occurring hormones).

**Androgen insensitivity**

Androgen insensitivity syndrome (AIS) is a condition that results in the partial or complete inability of the cell to respond to androgens (steroid hormones). The unresponsiveness of the cell to the presence of androgenic hormones can impair or prevent the masculinization of male genitalia in the developing fetus, as well as the development of male secondary sexual characteristics at puberty, but does not significantly impair female genital or sexual development.

**Amenorrhoea**

Amenorrhoea is a symptom with many potential causes. Delay in pubertal development will lead to primary amenorrhoea (menstruation cycles never starting).

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**Find more about related issues**

### organs

**Ovary**
The ovum-producing organs of the internal female reproductive system.
Learn more at: [www.fertilitypedia.org/edu/organs/ovary](http://www.fertilitypedia.org/edu/organs/ovary)

**Testes**
Male gonads which produce both sperm and androgens, such as testosterone, and are active throughout the reproductive lifespan of the male.
Learn more at: [www.fertilitypedia.org/edu/organs/testes](http://www.fertilitypedia.org/edu/organs/testes)

### Diagnoses

**Klinefelter syndrome**
The set of symptoms that result from two or more X chromosome in males.
Learn more at: [www.fertilitypedia.org/therapydiag/klinefelter-syndrome](http://www.fertilitypedia.org/therapydiag/klinefelter-syndrome)

**Kallmann syndrome**
A genetic condition where the primary symptom is a failure to start puberty or a failure to fully complete puberty.
Learn more at: [www.fertilitypedia.org/therapydiag/kallmann-syndrome](http://www.fertilitypedia.org/therapydiag/kallmann-syndrome)

**Hypogonadism**
A medical term which describes a diminished functional activity of the gonads – the testes and ovaries.
Learn more at: [www.fertilitypedia.org/therapydiag/hypogonadism](http://www.fertilitypedia.org/therapydiag/hypogonadism)
Amenorrhoea
The absence of a menstrual period in women of reproductive age.
Learn more at: www.fertilypedia.org/therapy/diag/amenorrhoea

Testicular failure
The inability of the testicles to produce sperm or testosterone.
Learn more at: www.fertilypedia.org/therapy/diag/testicular-failure

Gallery

Pic
The normal variation of pubertal changes in adolescent age.

<table>
<thead>
<tr>
<th>Per North American, Instituto Maximo (Mexico, Iran) and European girls</th>
<th>Per North American, Instituto Maximo (Mexico, Iran) and European boys</th>
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</thead>
<tbody>
<tr>
<td>1. Thearche (breast development): 10.5y (9y-13y)</td>
<td>1. Thearche (breast development): 11.5y (9.5-14y)</td>
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<tr>
<td>2. Pubarche (pubic hair): 11y (8.5-13.5y)</td>
<td>2. Pubarche (pubic hair): 12y (10-14y)</td>
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<tr>
<td>3. Growth spurt 11.25y (10.4-12.4y)</td>
<td>3. Growth spurt 14y (11-17y)</td>
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<tr>
<td>4. Breast (first menstrual bleeding): 12y (9-16.5y)</td>
<td>4. Breast (first menstrual bleeding): 15y (10.5-20y)</td>
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<tr>
<td>5. Adult height reached 15.5y (7-7)</td>
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Pic
Illustration of the Tanner scale for females.
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<tr>
<th>Pic</th>
<th>Illustration of the Tanner scale for males.</th>
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<td>5</td>
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### Sources

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