



A Clinical Guide to Delayed Puberty



**NATIONWIDE
CHILDREN'S**

When your child needs a hospital, everything matters.SM

Puberty is a normal component of a child’s growth and development into adulthood, yet delayed puberty is a frequent cause of anxiety and stress. Although many benign normal variants are common, pathology can be seen, and appropriate treatments are available to address pubertal abnormalities.

Delayed Puberty

Pubertal delay may result from a number of underlying disorders, including chronic endocrine, metabolic, and systemic disorders as well as under nutrition. In most cases, delayed puberty does not have a serious underlying cause and is simply due to a normal variant of growth known as constitutional delay of growth and development, otherwise known as a “late bloomer”. This is also a frequent cause of short stature referrals as well, and is much more commonly seen in boys than in girls.

Physical Signs of Delayed Puberty	
<p>Girls</p> <ul style="list-style-type: none"> • Lack of breast development (thelarche) by age 13 • Lack of menses (menarche) by age 15 • Lack of menses within 3 years after start of breast development also warrants investigation 	<p>Boys</p> <ul style="list-style-type: none"> • Lack of testicular enlargement by age 14

Causes of Delayed Puberty	
<p>Girls</p> <ul style="list-style-type: none"> • Genetic inheritance • Underweight/Decrease body fat (common in athletes) • Anorexia nervosa • Chronic illness, such as: <ul style="list-style-type: none"> • Inflammatory Bowel Disease • Celiac Disease • Sickle Cell Disease • Cystic Fibrosis • Primary ovarian insufficiency • Deficiency of pituitary hormones LH and FSH (Hypopituitarism) 	<p>Boys</p> <ul style="list-style-type: none"> • Constitutional delay of puberty • Genetic inheritance • Chronic illness, such as: <ul style="list-style-type: none"> • Inflammatory Bowel Disease • Celiac Disease • Sickle Cell Disease • Cystic Fibrosis • Gonadal failure • Deficiency of pituitary hormones LH and FSH (Hypopituitarism)

Diagnostic Evaluation

Classifying the cause as central (GnRH-dependent) or peripheral (GnRH-independent) can be helpful in a diagnostic evaluation. Ruling out chronic disease is also important. The following is an initial approach:

- Gonadotropins (LH and FSH)
- Bone age film
- Other workup for chronic illness and failure to thrive (can include Thyroid function screening, CBC, ESR, Celiac Disease screening, chemistries)

Therapeutic Management for Delayed Puberty

The treatment of delayed puberty involves address the underlying primary concern and appropriate management, and may not even require any endocrine or hormone therapy. Hormone replacement therapy, however, may be indicated to induce pubertal development. This is done using estrogen or testosterone given in a gradual manner to closely mimic normal spontaneous pubertal development in girls and boys, respectively.

Reasons for Referral

If your patient presents with any of the following conditions, consider referring to Nationwide Children's for evaluation by our endocrinology team:

- Pubertal delay in girls, as defined by lack of breast development by age 13, or lack of menses by age 15 or by 3 years after start of breast development.
- Pubertal delay in boys, as defined by lack of testicular enlargement by age 14.
- Referral could be especially relevant if lack of pubertal development is associated with short stature during the typical pubertal age range.

For more information about endocrinology services, to speak with a provider, or to refer a patient visit [NationwideChildrens.org/Endocrinology](https://www.nationwidechildrens.org/Endocrinology) or call (614) 722-4425.



The Section of Endocrinology
700 Children's Drive
Columbus, Ohio 43205-2696
NationwideChildrens.org/Endocrinology

Referrals and Consultations

Online: NationwideChildrens.org

Phone: (614) 722-6200 or (877) 722-6220

Fax: (614) 722-4000

Physician Direct Connect Line for 24-hour urgent physician consultations: (614) 355-0221 or (877) 355-0221.

