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Fact Sheet: What Is a Growth Disorder?

If a child is looking up to her classmates, literally, it may mean that something is wrong.

A growth disorder is any type of problem in infants, kids, or teens that prevents them from meeting realistic expectations of growth. Disorders may include failure to thrive in infancy, failure to gain height and weight in young children, and short stature or delayed sexual development in teens.

Common Growth Disorders and Their Causes

This fact sheet will discuss growth disorders, such as growth hormone deficiency and Turner syndrome.

Growth Hormone Deficiency

One of the causes of growth failure is Growth Hormone Deficiency. Growth hormone is secreted by the pituitary and is one of a number of hormones affecting a child's growth. Sometimes there is a deficiency of other pituitary hormones resulting in Hypopituitarism. A growth hormone deficient child usually shows a growth pattern of less than 2 inches a year. In many cases the child will grow normally until the age of 2 or 3 and then begin to show signs of delayed growth. Other children will experience growth failure earlier or later than this age range. Though much smaller, these children have normal body proportions and often tend to look younger than their peers.

Growth hormone deficiency is a disorder that involves the pituitary gland (the small gland at the base of the brain that secretes several hormones, including growth hormone). A damaged or malfunctioning pituitary gland may not produce enough hormones for normal growth. **Hypothyroidism** is a condition in which the thyroid gland fails to make enough thyroid hormone, which is essential for normal bone growth.

Turner's Syndrome

Turner syndrome, one of the most common growth problems, occurs in girls and is a genetic syndrome in which there is a missing or abnormal X-chromosome. In addition to short stature, girls with Turner syndrome usually don't undergo normal sexual development because their ovaries (sex organs that produce eggs and female hormones) fail to mature and function normally.

This occurs in 1 in 2,500 live female births. It was first described by Dr Henry Turner in 1938 and manifests with short stature, webbed neck, cubitus valgus (arms turned out slightly at the elbow) and sexual infantilism. Children with Turner's syndrome may also have the following physical findings; congenital lymphedema (puffy hands & feet

at birth), low posterior hair line, prominent ears, high arched palate, micrognathia (small jaw), broad chest, multiple pigmented nevus(moles) abnormal finger nails (turned up at the end), intestinal telangiectasia (malformation of intestinal blood vessels) and hypoplastic nipples. Cardiovascular anomalies are common and kidney anomalies occur in 1/3 to 1/2 of girls with Turner's Syndrome with monosomic (one chromosome is missing) patients at great risk.

How Is a Growth Disorder Diagnosed?

The number of tests needed to detect a growth disorder depends on the findings at each step of evaluation. A short child who is healthy and growing at a normal rate may just be observed throughout childhood, but a child who has stopped growing or is growing more slowly than expected will often need additional testing.

Your child's doctor or endocrinologist will look for signs of the many possible causes of short stature and growth failure. Blood tests may be performed to look for hormone and chromosome abnormalities as well as to rule out other diseases associated with growth failure. A bone age X-ray is frequently done, and special scans (such as an MRI) can check the pituitary gland for abnormalities.

To measure the ability of the child's pituitary gland to produce growth hormone, the doctor (usually a pediatric endocrinologist) may perform a growth hormone stimulation test. This involves giving the child certain medications that cause the pituitary gland to secrete growth hormone and then drawing several small blood samples to check growth hormone levels over a period of time after the medications are given.

Treatment

The earlier diagnosis and treatment of growth disorder may help children achieve a more typical adult height.

If an underlying medical condition is identified, specific treatment may result in improved growth. Growth failure due to hypothyroidism, for example, is usually simply treated by giving the child thyroid hormone replacement therapy in pill form.

Growth hormone injections for children with growth hormone deficiency, Turner syndrome, and chronic kidney failure may help them reach a more normal height.