

VYTLONE

SPECIALTY PHARMACY

Your Guide to Growth Hormone Deficiency



Program Overview

VytlOne Specialty Pharmacy's Disease Management Programs offer a unique approach to disease management. Each clinical track includes information from disease overview to therapeutic outcome management and provides continuous, coordinated, and patient-centered care plans carefully designed to fit your specific needs.

As part of the program, you will also have access to:

- Patient education materials providing disease-specific information stressing the importance of medication compliance, ongoing physician follow-up, scheduled lab work adherence, etc.
- Ongoing patient communication with documented patient feedback.
- Proactive refill calls to assist with medication adherence.
- Monitoring of timely and appropriate prescription refills to avoid product waste or misuse and convenient ordering capabilities.
- Free delivery of medications to your home or other preferred location.
- Clinical pharmacist availability 24/7/365.
- Screening and education for drug/drug, drug/food, drug/lab, and drug/disease interactions as well as adverse drug reactions.
- Side effect management.

Through ongoing patient communication, education on lifestyle changes, clinical interventions, focused compliance efforts, market trend expertise, cost saving pharmacy practices, and outcome evaluation measures, our Clinical Track Programs are dedicated to meeting your needs.

You can access your patient portal at vytlone.com or call us at 866-629-6779 for more information.

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Understanding Growth Hormone Deficiency

Growth Hormone Deficiency and VytlOne's Role

Growth hormone deficiency (GHD) is a rare condition in which the body does not make enough growth hormone (GH). Approximately one in 4,000 to 10,000 children have GHD that can be caused by a genetic mutation or acquired after birth.

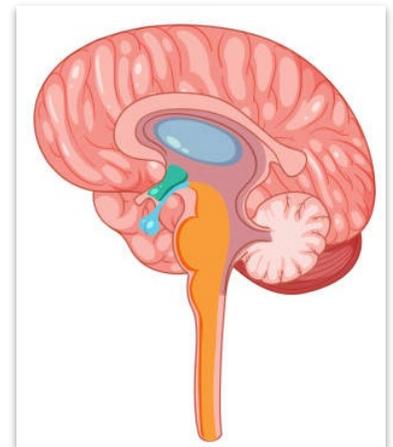
Our goal at VytlOne Specialty Pharmacy is to provide the tools and resources you need from initial diagnosis and onward. We aim to provide consistent support and navigation throughout the seasons of life. Understanding your or your family member's diagnosis is the first step in taking control of your health. This program will provide key information about GHD and ongoing initiatives to help get you started on your journey.

What is Growth Hormone Deficiency?

GHD is a rare health condition caused by inadequate amounts of growth hormone produced from the pituitary gland. Typically, GHD occurs in childhood due to genetic mutations that cause suppression in pituitary gland development or dysregulation of growth hormone production. Adult-onset GHD is often acquired as a result of brain tumors, autoimmune disorders, or physical head trauma.

What causes Growth Hormone Deficiency?

Growth hormones are produced and released by the pituitary gland. The pituitary gland is a small gland located at the base of the brain. The pituitary gland produces growth hormone and stimulates the growth of bones, muscles, and organs in the body. When there is a problem with the pituitary gland, such as a small or missing gland, that leads to less growth hormone being produced. The extent of GHD can vary from mild to severe.



How is Growth Hormone Deficiency diagnosed?

A physical exam and measurement of height, weight, and limb length are often the first steps to diagnosis. If GHD is suspected, there are other testing tools that can be used to confirm diagnosis. Some of diagnostic tests include:

- Growth hormone serum test.
- Growth Hormone suppression or stimulation test.
- Insulin-like growth factor-1 test (IGF-1).
- Imaging tests (x-ray or MRI of the brain or bones).

Through testing, doctors can determine if the deficiency was present at birth or brought on by a secondary cause (e.g., injury or a tumor).

What does GHD look like?

The most common symptoms of GHD include slow growth, short stature, absent or delayed sexual development during puberty, poor nail growth, and high-pitched voice. As people get older, there is a decrease in the amount of growth hormone that is secreted by the pituitary gland. Symptoms of GHD in adults include fatigue, decreased strength and weakness, weight gain, and depression. Additional symptoms include low blood glucose, increased risk for fractures, fatigue, and increased body fat distribution around the waist.

Complications of GHD

Early diagnosis and treatment may lead to a greater chance for children to attain a normal adult growth height. If left untreated, GHD may lead to:

- Abnormally short stature.
- Low bone density and an increased risk of bone fractures.
- Irregular metabolism, abnormal cholesterol, blood sugar, and/or blood pressure.
- Chronic fatigue and decreased energy level.
- Increased cardiovascular risk factors such as heart attack, heart failure, irregular heartbeats, and embolisms.

GHD Treatments

At VytOne, our aim is to provide you with goals that can be implemented to optimize your or your loved one's treatment plan.

The 3 Goals of Growth Hormone Deficiency Treatment

The primary goals of treating growth hormone deficiency disorders are:

1. Replenishing the lack of growth hormones,
2. Obtaining normal or near adult height and restoring normal metabolism.
3. Improving quality of life.

Goal 1: Replenishing the lack of growth hormones

Children with GHD may receive injectable synthetic human growth hormone through a specialty pharmacy. These injectable medications are administered subcutaneously by the patient or caregiver at home. The dosage starts low and slowly increases to the highest tolerated and optimal dose based on weight. Most formulations require the patient to inject daily. However, next-generation therapies allow for once-weekly injections to improve adherence and convenience. Children usually discontinue therapy when reaching adulthood.

FDA-approved treatments for GHD and other related disorders include but are not limited to:

- Humatrope®.
- Genotropin®.
- Norditropin®.
- Omnitrope®.
- Skytrofa®.
- Sogroya®.
- Ngenla™.

Growth hormone is given by injection once daily into the subcutaneous (fatty) tissues. Older children can often learn how to give the injection to themselves, but need to be supervised by a caregiver to make sure they are giving the correct dose and that they are giving themselves the shot every day. Appropriate injection sites include the back of the arms, upper outer thighs, abdomen, or buttocks. Side effects are usually minor, but may include redness at the injection site, headaches, and muscle or joint pain.

Goal 2: Obtaining normal or near adult height and restoring normal metabolism

The primary goals of treatment are to increase growth in children and to increase energy and muscle mass and balance mood in adults. Synthetic growth hormones have been used successfully in both children and adults to treat GHD. It may take between three to six months to see some growth progress after initiating the growth hormone treatment. Indicators that growth hormone is working include:

- Increased appetite.
- Increased shoe size needed.
- Increase in lean body mass.

Duration of treatment with growth hormone often varies and can be a long-term commitment. Growth hormone medications are often stopped when your child has reached:

- Full adult height.
- Full bone maturation.
- Grown less than 2 centimeters in the last year.

Goal 3: Improving quality of life

Improving quality of life is VytIOne Specialty Pharmacy's primary goal for all patients. Strategies to achieve treatment goals include:

- Adhering to prescribed therapy.
- Keeping appointments and following up with doctor.
- Reporting side effects or unmanaged symptoms to your pharmacist or healthcare team.
- Avoiding cigarette smoke, heavy alcohol consumption, and recreational drug use.
- Exercising regularly to promote healthy lifestyle.
- Eating a balanced, nutritional diet.

VytIOne Specialty has a well-trained staff of clinical pharmacists and support personnel who will work hard for you and your caregiver to help you achieve the best possible outcomes from the prescribed growth hormone treatment plan. The staff at VytIOne Specialty will provide important information related to your disease, will help coordinate a teaching visit for instructions on giving your injections, will discuss the side effects related to your treatment, will provide possible solutions to help manage the side effects, and will work towards keeping you feeling your best during the treatment. They will also remind you about refills, monitor your adherence to the treatment plan, offer encouragement to you and your caregiver, and answer your questions related to your treatment. The members of the VytIOne Specialty staff are your partners in your treatment and are there to help meet your needs and goals.

References

1. Endocrine Society. Growth Hormone Deficiency | Endocrine Society. Endocrine.org, Endocrine Society, 27 November 2023, <https://www.endocrine.org/patient-engagement/endocrine-library/growth-hormone-deficiency>. Accessed February 12, 2024.
2. National Organization for Rare Disorders. Growth Hormone Deficiency. <https://rarediseases.org/rare-diseases/growth-hormone-deficiency/>. Accessed February 12, 2024.
3. Children's Hospital of Pittsburgh of UPMC. Growth Hormone Treatment. <https://www.chp.edu/our-services/endocrinology/resources/endocrinology-patient-procedures/growth-hormone-treatment>. Accessed February 12, 2024

Resources

VytlOne Specialty Pharmacy

<https://vytlone.com/specialty-pharmacy-and-rare-disease/>

Our VytlOne Specialty Pharmacy website provides patient resources and quick access to your specialty pharmacy account.

National Organization for Rare Disorders (NORD): Growth Hormone Deficiency

<https://rarediseases.org/rare-diseases/growth-hormone-deficiency/>

NORD provides educational information, clinical trials and studies, and programs and resources for patients.

Boston Children's Hospital: Growth Hormone Deficiency

<https://www.childrenshospital.org/conditions/growth-hormone-deficiency>

[e-deficiency](https://www.childrenshospital.org/conditions/growth-hormone-deficiency)

Provides information on growth hormone deficiency, normal growth definition, and questions to ask your doctor.