



Growth Hormone: Use & Abuse

WHAT IS HUMAN GROWTH HORMONE?

Human growth hormone (GH) is a substance that controls your body's growth. GH is made by the pituitary gland, located at the base of the brain. GH helps children grow taller (also called linear growth), increases muscle mass, and decreases body fat.

In both children and adults, GH also helps control the body's metabolism—the process by which cells change food into energy and make other substances that the body needs.

If children or adults have too much or too little GH, they may have health problems. Growth hormone deficiency (too little GH) and some other health problems can be treated with synthetic (manufactured) GH. Sometimes GH is used illegally for non-medical purposes.

DID YOU KNOW?

Abuse of growth hormone can cause muscle pain and serious health problems.

HOW IS GROWTH HORMONE THERAPY USED?

The U.S. Food and Drug Administration (FDA) has approved GH treatment for certain conditions. GH is available only by prescription and is injected. Synthetic GH seems to be safe and effective when used as prescribed for the FDA-approved conditions.

In children, GH is used to treat

- Growth hormone deficiency
- Conditions that cause short stature (being shorter than children of the same age), such as chronic kidney disease, Turner syndrome, and Prader-Willi syndrome

In adults, GH is used to treat

- Growth hormone deficiency
- Muscle wasting (loss of muscle tissue) from HIV
- Short bowel syndrome

In addition to these uses, doctors outside of the U.S. sometimes prescribe GH for other health problems. (When doctors prescribe medicines for conditions other than the ones officially approved, the process is called "off-label" use.)

If you're worried about GH deficiency in yourself or a family member, talk with a doctor.

IS GROWTH HORMONE USE APPROPRIATE FOR HEALTHY ADULTS?

Studies of healthy adults taking GH have produced conflicting results. Some short-term studies showed that older adults increased their endurance and strength, with increased muscle and decreased fat mass. But other studies did not show similar benefits. More studies are needed to fully understand the benefits and risks of GH use in healthy adults.

Aside from its use in research studies, prescribing or using GH off-label is illegal in the US. Adults can achieve improved health, body composition, strength, and endurance by following a healthy diet and getting frequent exercise.

HOW IS GROWTH HORMONE ABUSED?

People sometimes take GH illegally to stop or reverse the effects of aging or to improve athletic performance. Some athletes believe taking GH alone will not achieve the desired results, so they take it along with anabolic (tissue building) steroids in an effort to build muscle, increase strength, and decrease body fat.

Some athletes also use insulin to increase the muscular effects of GH, which is a dangerous practice because it lowers blood sugar.

WHAT ARE THE RISKS OF GROWTH HORMONE ABUSE?

People can experience harmful side effects when they abuse GH. Side effects of short-term use include joint and muscle pain, fluid build-up, and swelling in the joints. If GH is injected with shared needles, people may be exposed to HIV, AIDS, or hepatitis. Taking high doses of GH over a long time may contribute to heart disease.

GH sold illegally may contain unknown and potentially harmful ingredients. For instance, if people take GH derived from human tissue, they risk developing a fatal brain disease called Creutzfeldt-Jakob disease, which is similar to mad cow disease.

GROWTH HORMONE SOLD WITHOUT A PRESCRIPTION

Some companies sell human GH pills or GH releasers, claiming that the pills are "anti-aging" substances. But these substances have not been proven to increase the body's production of GH or to fight aging, increase muscle, or provide other benefits. GH has no effect if it is taken as a pill because it is inactivated (loses its action) during digestion.

Questions to ask your doctor

- Do I (or my child) need human growth hormone treatment for medical reasons?
- What are the benefits and risks of growth hormone treatment?
- What are the signs of growth hormone abuse?
- Should I see an endocrinologist about my condition?

RESOURCES

- Find-an-Endocrinologist: www.hormone.org or call 1-800-HORMONE (1-800-467-6663)
- Hormone Health Network information about growth disorders and hormone abuse: www.hormone.org/Growth
www.hormone.org/abuse
- MedlinePlus (National Institutes of Health): www.medlineplus.gov (search for growth hormone)
- Mayo Clinic: www.mayoclinic.com/health/growth-hormone/HA00030

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The Hormone Health Network offers free, online resources based on the most advanced clinical and scientific knowledge from The Endocrine Society (www.endo-society.org). The Network's goal is to move patients from educated to engaged, from informed to active partners in their health care. This fact sheet is also available in Spanish at www.hormone.org/Spanish.

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www.hormone.org