HGHactiv8™ is a scientifically proven, patent pending formula that causes the body to naturally release significantly higher levels of Growth Hormone.
Introduction
Many scientists now regard aging as both a treatable and reversible condition. This shift in opinion emerged as consensus among anti-aging researchers and practitioners formed a theory of aging that had practical applications for our daily lives.

At its core, the new aging theory equates to the body’s progressive inability to self-repair with progressive hormonal deficiencies. The application of this idea, and the unprecedented growing popularity of hormonal supplementation, testify to the effectiveness of hormone replacement therapy as an effective means of countering the aging process while restoring the body’s resilience and ability to self-repair.

Human growth hormone, or HGH, has emerged at the forefront of this discussion. The mounting basic science and clinical evidence that documents the hormone’s usefulness as an anti-aging tool has ensured its continued relevance in an ongoing exploration of anti-aging medicine. Central to HGH’s value as an anti-aging tool is its ability to promote cell regeneration, stimulate tissue repair and energize the immune system. Since virtually all of the complications related to aging appear to stem from body’s progressive inability to repair and replace its cells as it losses them, HGH’s pertinence in this area seems assured.

The quest to maintain and restore the body’s resilience and vitality regardless of age is a timeless objective that is fast approaching reality. Genesis Global, the developer of the patent pending, HGHactiv8™ invites you to read this brochure in your personal quest to understand growth hormone and its potential contributions to your daily well-being.

Aging gracefully is no longer reserved for the fortunate among us. Established anti-aging therapies like HGHactiv8™ have clearly shown that science can intervene in the aging process to maximize health and longevity.

Theories of Aging
The precise reason why GH levels decrease with advancing age is unknown. However, there are a number of theories that begin to explain this depression within the context of an organism’s natural aging process. The theories are as follows:

• Oxidative Stress Theory asserts that the body’s absorption of oxygen is intricately related to the aging process. The more food a person or animal consumes, the more oxygen the body needs to break it down into energy, and more rapidly they age due to the creation of free radicals that impair cell function.

• The Genetic Theory of Aging asserts that as genetic damage accumulates simply as a consequence of living (i.e. via ongoing cell repair and division), the body’s overall efficiency decreases, with aging as a consequence.
• The Theory of Somatopause (or Cellular Senescence) asserts that cells are pre-programmed to either die after a finite number of divisions or simply go dormant. As the cells lapse into this phase of their cycle, the efficiency of the organism to maintain its vital functions decreases, until ultimately the organism itself dies.

• The Hormonal Theory of Aging asserts that aging is linked to a decline in the body’s secretion of a variety of hormones without losing the ability to respond to these hormones. This is the principle basis for hormone replacement therapy with GH.

Comment: Cellular senescence may be caused by the decreasing length of protective telomeres that are positioned like protective caps at the ends of chromosomal DNA. A part of the telomere cap is lost with each successive cell division, eventually reaching a critical length at which time cell division stops and the cell ages and dies. Preservation of these caps preserves cell viability.
Growth hormone is a 191 amino acid long protein that is synthesized and secreted by the pituitary gland found at the base of the brain. The hormone enters the bloodstream in pulses, predominantly at night, and is then quickly metabolized by the liver into the insulin-like growth factors, IGF-1 and IGF-2.

The natural depression of GH secretion with age starts in the mid-twenties and continues as we grow older. (See figure 1). By the age of 60, GH levels are typically 15-20% of what they were when you were in your twenties, sometimes even less.

People that have taken HGH by injection have noticed an overall improvement in their general well-being and vitality, with the following specific reports:
- Stronger bones
- Enhanced immune system
- Accelerated wound healing / tissue regeneration
- Decreased total cholesterol
- Increase in muscle mass without exercise
- Loss of body fat without exercise
- Weight Loss
- Improved blood pressure
- Younger, more durable skin with fewer wrinkles
- Increased energy
- Enhanced sexual performance and libido
- Increase cardiac output
- Enhanced exercise performance
- Improved mood
- Improved memory
- Improved sleep pattern
- Organ regeneration
- Regrowth of lost hair

Insulin-like Growth Factors, IGF-1 & IGF-2

HGH is released into the bloodstream in small pulsatile bursts during the night and peaks during deep sleep. Since the longevity of GH in the bloodstream is very short after its secretion, accurately measuring GH levels directly can be very cumbersome. Consequently, measurement of GH levels is typically achieved indirectly, by measuring for levels of another hormone called Insulin-like Growth Factor 1 (IGF-1).

IGF-1 is produced by the liver in response to circulating GH and remains relatively constant throughout the day in contrast to GH. As such, IGF-1 levels are the standard means to evaluate how much GH the pituitary is releasing, especially when looking for a change over time.

The goal of GH replacement therapy by injection for individuals over 50 is to raise IGF-1 levels within the range of healthy young adults, which is around 500 to 1500 U/l.
It is helpful to understand the relative benefits and risks of HGH replacement supplementation by injection versus the use of an agent that stimulates the release of GH. GH replacement supplementation by injection can offer substantial benefits, as presented earlier. As with any hormone replacement or supplementation, however, the converse is also true. Poorly monitored HGH supplementation may be associated with allergic reactions, carpal tunnel syndrome, irregularities of bone growth (acromegaly), diabetes and swelling. 

Use of a GH Releasing Factor (GHRF), or secretagogue, minimizes the risk of complications associated with GH injections. This decrease in risk is achieved by eliminating the shock of pharmacologic GH injections and the resultant steep increase in IGF-1 levels. By using a GHRF, IGF-1 levels increase more slowly and plateau at levels far below the extremes of GH replacement therapy. Furthermore, healthy advocates of GH supplementation can reasonably use an oral GHRF agent without a physician’s involvement.

Comment: Prolonged exposure to elevated HGH in acromegaly has resulted in an increased incidence of colon and breast cancer. Elevated IGF-1 levels have been associated with an increased prevalence of prostatic cancer, although no direct evidence has been reported to date.

HGH Replacement Supplementation vs. GH Releasing Factors

The key objectives for the Chief scientist at Genesis Global, the developer of HGHactiv8™ was

(1) to create a new GHRF that could stand on its own merits as a powerful new technology; and

(2) to create an oral GHRF technology that could safely offer a viable alternative to HGH injections. The result of this development effort was the creation of HGHactiv8™ with HTA-8™.
HTA-8™

HTA-8™ is a small octapeptide that binds to the hypothalamus and stimulates the pituitary gland to release GH. HTA-8™ also binds to GH receptors in the liver. The end result is that a low dose of HTA-8™ has similar efficacy as higher doses of HGH injection.

HTA-8™ is not a GH precursor. HTA-8™'s absorption through the oral mucosa is possible because the length of its peptide chain is very short. Note that the upper threshold of trans-mucosal absorption is 60 amino acids long peptide chains.

Clinical Testing

The challenge was to document the efficacy of HGHactiv8™ as a new growth hormone releasing factor.

- Fifteen individuals ranging in age from 38 to 70 years were given HGHactiv8™ containing 20 nanograms (or 0.000000020 grams) of HTA-8™ once daily over a 25-36 day period.

HGHactiv8™ & IGF-1

The principal hormone measured in order to establish whether there is an increase in growth hormone secretion is IGF-1. And indeed, clinical research confirms HGHactiv8™ is a bonafide, GH Releasing Factor and that GH secretion is increased with HGHactiv8™.

In addition, the following observations may be made from the IGF-1 data in Figure 2:

- The change in IGF-1 concentrations in the presence of HGHactiv8™ was found to be both age and sex dependent.
A more substantial change in IGF-1 concentrations was noted with advancing age groups, regardless of sex.

- A woman’s IGF-1 response to HGHactiv8™ was calculated to be greater than a man’s response. This difference in IGF did not result in significant body mass changes between the sexes.
- It should be noted that across all clinical trial participants, the greatest percent change in IGF-1 concentrations was observed in participants that started with very low baseline IGF-1 concentrations (e.g. 21 ng/ml).

Comment: IGF-1 concentrations and total cholesterol levels were determined by collecting participant’s blood samples at the beginning of the studies and at their conclusion.

**Total Cholesterol**

The National Cholesterol Education Program (NCEP) has been advocating that people maintain a low total blood cholesterol level as a means to minimize the potential for cardiovascular diseases.

Current NCEP guidelines recommend that adult individuals work toward reducing total cholesterol levels to at least 200mg/ml as part of a healthful lifestyle. The majority of clinical trial participants demonstrated a clinically significant decrease in their total cholesterol levels over the study period, in the absence of additional measures. Study results for participants are presented in Figure 3.

**Bone Density**

The importance of bone density to general health is very simple. Stated succinctly, an increase in bone density decreases the chance of fracture and osteoarthritis. Bone density is a particularly important issue as the body ages, regardless of sex.

Since an increase in GH levels is known to increase bone density, the developers of HGHactiv8™ with HTA-8™ expected that they would witness an increase in bone
density at the conclusion of a clinical trial. Indeed, the average increase in bone density for subjects taking HGHactiv8™ was 12%.

Figure 4 illustrates the bone density increases measured for the men and women in the study. Note that neither sex nor age group has a significant influence on the activity of HTA-8™ to affect bone density.

Comment: Radial bone density was measured by ultrasonographic technique.

**Lean Body Mass / Adipose Tissue Mass**

One of the basic roles of growth hormone and IGF-1 is in the regulation of insulin levels, glucose metabolism, and fatty tissue metabolism.

An increase in lean muscle mass and a decrease in adipose tissue mass was recorded for all study participants in the clinical trials using an ultrasound-based body composition analysis. The noted increase in muscle mass and decrease in adipose tissue mass at the conclusion of the study period was slightly more than doubled for the study participant’s. Participants lost an average of 13.2% of their body weight in conjunction with this change in body composition – and this was achieved without diet or exercise. See Figure 5.

**Oral Absorption of HGHactiv8™ with HTA-8™ versus HGH in an Oral Spray**

Oral absorption of HTA-8™ is based on the peptide’s small size and its ability to be readily absorbed through the oral mucosa. HGH, on the other hand, is not readily absorbed through the intact oral mucosa. Because the upper threshold of trans-mucosal absorption for peptides is around 60 amino acids, oral HGH cannot be absorbed through the oral mucosa given its large size of 191 amino acids.
amino acids. Inclusion of HGH in an oral spray for the purpose of increasing GH levels is simply a marketing ploy. At this time there is no delivery vehicle that successfully delivers intact HGH through the oral mucosa.

In addition to HGH’s large size as a prohibitive factor for an oral spray formulation, it should also be understood that HGH in liquid form is extremely unstable. Consequently, although the concentration of HGH placed in solution at the time of manufacture may be substantial, final levels of HGH by the time the product gets into the hands of the end consumer will be very low. At this time, there is no sure fire technology available to stabilize HGH in solution.

Genesis Global, the developers of HGHactiv8™ did choose to assist the transmucosal absorption of HTA-8™ by including a non-proprietary and relatively small sugar/protein transport molecule called a glycosaminoglycan, or GAG molecule, into the formulation. This transport molecule increases the transmucosal absorption of HTA-8™ and also helps to stabilize HTA-8™ in the formulation. HTA-8™ was attached to GAG molecules in all clinical trials performed to date.

HGHactiv8™ versus HGH supplementation

HGHactiv8™ with HTA-8™ is ideal for those individuals whose objective is to benefit from an increase in their body’s own release of GH without the hassles of typical HGH supplementation. In particular:

- HGHactiv8™ users will never have to be concerned about the need for injections that are required for HGH. A simple intra-oral spray releases enough HTA-8™ to stimulate your body’s own synthesis and secretion of GH
- HGHactiv8™ use will not suppress the body’s natural cyclical release of GH, as is commonly the case with HGH supplementation. Consequently, you may start and stop the use of HGHactiv8™ without risk.
- HGHactiv8™ users can comfortably use the formulation because HTA-8™ does not expose the body to the pharmacologic concentrations of GH commonly used with HGH injections. (See GH Replacement Therapy vs. a GH Secretagogue, and Contraindications for additional information)
Maximizing Your GH Levels

The decrease in GH synthesis and secretion during a lifetime is a natural phenomenon consistent with the aging process. The following is a list of simple and effective techniques that increase GH secretion naturally and with varying degrees of effort.

- **Exercise and strength training**
  Weight training that uses leg, chest and back muscles has been shown to be the best natural stimulant for invigorating the body and stimulating GH secretion.

- **Avoid eating before bedtime and minimize your intake of simple sugars found in soda, fruit juice, candy, and other snack products.**
  Raising blood sugar levels decreases GH secretion.

- **Increase your dietary protein intake from poultry, fish, dairy products, soy and meat products.**

Protein intake is fundamental to tissue regeneration and muscle growth. In addition, amino acid supplements of l-arginine, l-lysine and l-ornithine, when taken in combination, have also been found to stimulate GH secretion, but timing and dose need to be carefully coordinated to achieve maximum benefit.

- **Practice good sleep hygiene by following a consistent sleep schedule**
  Over 70% of your daily GH secretion occurs during Stage III and IV of restful sleep. For anyone having difficulty getting a good night sleep, we have included melatonin in our formula.

- **Adopt a vigorous and healthful lifestyle**
  Comment: Note that by increasing endogenous GH secretion, IGF-1 levels will also increase.
Recommended Dosage & Instructions for Administration

Oral Spray:
Administer one to two sprays sublingually in the morning, and two to three sprays in the evening prior to sleep. Abstain from drinking or eating for at least 10 minutes after administration. Dosage may vary based upon desired results and body composition.

Precautionary Statement

The following individuals should consult their physician before using HGHactiv8™ or any GH product:

- Pregnant or nursing mothers, women trying to conceive, people taking prescription steroid drugs, anyone suffering from autoimmune diseases and anyone with a current or prior diagnosis of cancer.
- Individuals with an allergy to any of the ingredients.

Glossary

- Adipose Tissue Mass (ATM) – a measure of the total fat weight of the body, typically obtained by skin fold measurement or ultrasound.
- Amino Acid - the simplest discrete unit of a protein molecule, a building block of protein.
- Arginine – an essential amino acid that is a known growth hormone secretagogue.
- DHEA – Di-hydro-epi-androsterone is a hormone that is converted into the sex hormones testosterone, estrogen and progesterone.
- Hormone – a chemical messenger that initiates a reaction in near or distant cells.
- Insulin-like Growth Factor – a hormone synthesized by the liver in response to circulating growth hormone, responsible for the metabolic effects of growth hormone.
- Lean Body Mass (LBM) – a measure of the body’s muscle mass.
- Lysine - an essential amino acid that is a known growth hormone secretagogue.
- Human Growth Hormone – a 191 amino acid long hormone secreted by the anterior pituitary that is responsible for somatic growth and contributes to the regulation of metabolism, the regeneration of tissues and immune system function.
- Melatonin – a nocturnal hormone commonly associated with restful sleep patterns that is secreted by the pineal gland in the brain in response to darkness.
- Pituitary Gland – an endocrine gland located at the base of the brain that stores and secretes a variety of hormones.
(GH, TSH, FSH) under influence of the hypothalamus.

- HTA-8™ – (1) a patent pending proprietary peptide that behaves as a growth hormone releasing factor to stimulate GH secretion from the anterior pituitary; (2) a peptide that binds to liver cells and stimulates IGF-1 release directly.

- Total Cholesterol – represents the sum total of low density cholesterol (LDL) plus high density cholesterol (HDL) plus very low density cholesterol (VLDL).

- Secretagogue – a releasing factor that stimulates the secretion of a chemical, usually a hormone.

Genesis Global brings to the international market truly disruptive, and innovative-patented products that empower your skin, hair and body to be it’s healthiest through solving complex challenges, providing maximum protection from harmful environmental factors, and providing beautiful and radiant anti-aging results.

The keys to good health, a vibrant appearance, and the way we feel lie in the 37.2 trillion cells in the human body. Our personal health care solutions are the result of the most advanced science using our exclusive patented proprietary peptide chemistry. These clinically tested proven formulations are combined with vitamins, minerals, and herbal and plant extracts which work in synergy to produce superior skin, hair, health care, and anti-aging treatments. Genesis Global’s leadership in proprietary biopeptide technology has enabled us to create a spectrum of products with efficacy that adjusts to the needs of a client’s conditions. The more substantial its needs, the more active the product. That’s our scientific advantage.

Chanda Zaveri, renowned molecular biologist and Chief Science Officer has been a pioneer in skin, hair, and the personal health care evolution since 1994 having developed many patented products based on peptide chemistry. Chanda was the protégé to two-time Nobel Prize winner, Linus Pauling and she was the first scientist to introduce peptides to the skin care industry. Her experience in the specialty of genetics and the understanding of how biological cell structures communicate using specially designed peptides has made Chanda one of the world’s leading experts in cosmeceuticals, nutriceuticals, woundhealing technology, and anti-aging innovations.


These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.