

## WHAT IS IPAMORELIN

Ipamorelin acts in a completely different way to stimulate growth hormone release. Ipamorelin helps to release growth hormone because it mimics ghrelin. Ghrelin is one of three hormones which together act to regulate growth hormone release from the pituitary gland. This is an important distinction between both peptides because Ghrelin also works at the pituitary gland and is responsible for initiating the breakdown of fat for use as energy as well as preventing the breakdown of muscles.

There is always one major concern which must be evaluated whenever you are considering any kind of anti-aging treatment however, and that is whether the benefits outweigh the potential side-effects. Fortunately, in the case of sermorelin vs ipamorelin, that choice seems pretty easy.

Because Ipamorelin stimulates the body to produce GH, there is no shutdown of natural growth hormone production like that which occurs with synthetic hGH administration. Ipamorelin causes GH secretion in a way that more closely resembles natural release patterns, causing growth hormone to be released in a “pulse” type manner, rather than being constantly elevated. This results in fewer side effects compared with synthetic hGH. Ipamorelin creates a smoother, less intense pulse of GH release with a longer duration than most other GHRPs as well, causing GH elevation for up to 3 hours after administration.

## WHAT ARE THE BENEFITS OF IPAMORELIN

- very powerful anti-aging benefits
- may increase athletic performance, energy, and recovery
- increased muscle mass
- decreased body fat
- enhanced flexibility and joint health
- promotes better recovery from injuries and training sessions
- deeper, more restful sleep
- improved overall health and wellness.

Ipamorelin also increases production of Insulin-like Growth Factor 1 (IGF-1) in the body. This increases the benefits of improved recovery, strength, and lean body mass by speed up muscle growth and enhancing tissue repair. In addition, Ipamorelin’s method of action prevents many of the negative side effects of synthetic hGH administration, including the shutdown of natural growth hormone production.

Ipamorelin is regarded as one of the mildest growth hormone releasing peptides in terms of negative side effects. Even with long term use, concerns of adverse effects are rarely reported. Additionally, it has a negligible effect on cortisol, prolactin, and appetite, unlike other GHRPs. As a result of its targeted effects on natural growth hormone production and its well-tolerated profile, Ipamorelin is one of the most widely sought-after anti-aging peptides.

## WHAT ARE THE POTENTIAL BENEFITS OF SERMORELIN/IPAMORELIN

- Decreased body fat
- Decreased waistline size
- Faster weight loss

- Increased Lean Muscle
- Improved Athletic Performance
- Improved Muscle Recovery After Workout
- Increased libido & Sexual Performance
- Improved Sleeping At Night
- Increased Immune System
- Increased Cell Repair & Regeneration
- Increased Collagen Production

## WHAT IS THE DOSING OF IPAMORELIN

Ipamorelin is generally administered in one of two ways. The first is 1-3 times daily at dosages ranging from 200 mcg to 300 mcg per administration. **For strength gain or performance enhancement, a common protocol is 300 mcg administered 3 times a day.** These higher dosages provide a substantial increase in growth hormone output to facilitate muscle growth, fat loss, and recovery from training and injury.

**For anti-aging purposes, lower daily dosages are often more appropriate; for example, 200 mcg prior to bed once daily.** These protocols are intended to provide a significant increase in growth hormone production over time while still maintaining a natural pattern of release. For best results, it is recommended to avoid eating at least 1 hour before and after administering Ipamorelin. Individual results vary and therapy should always be monitored by the prescribing physician. Most physician begin with lower dosing initially and monitor results and side effects.

## WHAT ARE THE SIDE EFFECTS OF IPAMORELIN

Ipamorelin is widely regarded as the most well-tolerated growth hormone secretagogue. Any side effects that may occur are typically mild and dose-dependent, with negative effects rarely occurring at moderate dosage levels.

Generally,

- mild flushing
- headache may occur upon initial administration, though this commonly goes away after repeated injections
- Temporary nausea and upset stomach may additionally occur following administration.
- feelings of tiredness or lethargy are also possible, as growth hormone can increase the desire for sleep as well as its quality and restorative capabilities.
- to avoid this inconvenience (as well as to maximize its beneficial impact on nighttime production of growth hormone), many protocols call for its administration shortly before bed.

**Ipamorelin does not elevate adrenocorticotrophic hormone (ACTH), cortisol, and prolactin when used as recommended.** When used at extremely high dosages, however, it can have a stimulatory effect on these hormones. Though not an issue for the vast majority of users, this may cause interactions with certain medications or unwanted effects in individuals with certain health conditions. Excessive dosages of Ipamorelin may also lead to water retention as well as tingling or numbness in the hands and feet. This can be another sign that the dosage is too high and should be reduced

# SERMORELIN

## WHAT IS SERMORELIN

According to the Peptide guide, Sermorelin is a synthetically made version of growth hormone releasing hormone (GHRH), the endogenous hormone responsible for stimulating natural growth hormone production. Also known as growth hormone releasing factor and GRF 1-29, it is categorized as a growth hormone secretagogue, a compound which stimulates increased secretion of growth hormone from the pituitary gland.

Like the body's natural GHRH, Sermorelin works by binding to the growth hormone releasing hormone receptor (or GHRHr) in the anterior part of the pituitary gland. There, it works to stimulate greater production of GH, consequently provoking increases in production of endogenous IGF-1 as well. As it exerts its effects in an identical manner to GHRH, Sermorelin's positive effect on GH output is modulated by a negative feedback mechanism initiated by somatostatin, the endogenous hormone also known as growth hormone inhibiting hormone (GHIH). This has several positive effects, two of which are the prevention of extreme, unhealthy GH levels in the body and the mirroring of more natural patterns of fluctuation in GH concentrations.

Additionally, its natural action mechanism allows for the preservation of the hypothalamic-pituitary-somatotropic axis, preventing the shutdown of hormone production that typically accompanies direct replacement with hGH. Further, Sermorelin has also been shown to improve sleep quality, enhancing the duration of restorative slow wave sleep and amplifying sleep-related secretion of growth hormone while reducing production of cortisol (a catabolic stress hormone).

## WHAT ARE THE BENEFITS OF SERMORELIN

Sermorelin stimulates improved natural growth hormone production, resulting:

- increased muscle
- increased lean body mass
- decreased body fat
- enhanced recovery from injuries and training session
- deeper, more restful sleep
- enhanced flexibility and joint health
- improved overall health and wellness.

Enhanced growth hormone (GH) levels also stimulate greater production of Insulin-like Growth Factor 1 (IGF-1) in the body, further driving improvements in lean body composition with accelerated growth of muscle tissue and reduced body fat. Importantly, as Sermorelin stimulates the body's natural growth hormone output, none of the negative side effects often associated with synthetic hGH administration typically occur, including shutdown of natural growth hormone production, acromegaly, and carpal tunnel syndrome.

Suboptimal levels of growth hormone in the body can devastate an individual's athletic performance, functional capacity, and overall quality of life. Certainly, growth hormone is a crucial component in numerous physiological processes, with substantial influence in the facilitation of strength, energy,

flexibility, vitality, and overall well-being. With low growth hormone levels often comes a loss of muscle mass and strength, weaker bones, reduced exercise capacity, increased body fat, decreased stamina, poor recovery, and unrestorative sleep. Indeed, aging-related decline in growth hormone levels is responsible for many of the debilitating effects commonly experienced when getting older.

To increase growth hormone levels, Sermorelin stimulates the pituitary gland to produce greater amounts of natural GH. Critically, Sermorelin stimulates natural, endogenous production and is not simply synthetic hGH, a fact which offers several important advantages. First, overdoses are virtually impossible, as its effects are mediated with negative feedback by the body's own regulatory mechanisms. As a result, GH production is unable to reach dangerously high levels, and many of the previously mentioned negative side effects of synthetic hGH administration are avoided. Second, the body's own production of growth hormone is enhanced rather than shut down (as occurs with administration of exogenous hGH). Therefore, there is no risk of a hormonal crash upon cessation of Sermorelin administration. Third, there is also no likelihood of a diminishing response to administration as there is with hGH. This is due to Sermorelin's promotion of enhanced yet natural levels of growth hormone in the body. When administered, synthetic hGH causes growth hormone levels to spike and remain unnaturally constant, which can cause its effectiveness to diminish rapidly over time as the body becomes desensitized to its effects. In maintaining blood levels that more closely resemble the body's natural fluctuations, Sermorelin remains consistently effective at a given dose.

## **WHAT IS THE DIFFERENCE BETWEEN SERMORELIN AND GRF 1-29**

Sermorelin is often confused with Modified GRF 1-29, and vice versa. Although similar, these two peptides do have an important difference. Both peptides have a molecular structure comprised of 29 amino acids and possess comparable mechanisms of action (mimicking GHRH to stimulate endogenous GH production). However, Modified GRF 1-29 has been altered with changes to four specific amino acids in its chemical structure, changes intended to increase the peptide's stability during storage, transportation, and administration while enhancing its affinity for the GHRH receptor.

## **WHAT IS THE DOSAGE OF SERMORELIN**

**Amount per administration:** 200 to 1000mcg (0.25 to 1mg)

**Administration frequency:** 1 to 3 times daily

Sermorelin dosages commonly range from 200mcg (0.2mg) to 1000mcg (1mg) given 1 to 3 times daily. Generally, the peptide is either administered once daily before bed or split into 2 – 3 smaller doses spread throughout the day. Both approaches to administration can be effective and have been shown to elicit positive results in clinical studies.

Although Sermorelin has a relatively short half-life of 10 – 20 minutes, the peptide has been shown to stimulate an acute release of GH for 2 hours after administration. As a result, protocols delivering 3 daily doses of as little as 100mcg (0.1mg) per administration have been shown to cause a significant increase in GH and IGF-1 secretion. This type of protocol will commonly result in a more consistent GH level on a daily basis.

Still, protocols requiring once daily administration prior to bed are also highly effective as well as manifestly more convenient for the individual. Clinical studies have shown administration once daily before bed to induce a substantial increase in 12 hour nocturnal GH production as well as an overall increase in GH and IGF-1 levels. With this type of once-daily protocol, recommended individual dosages are commonly 10mcg (0.1mg) per kilogram (2.2 pounds) of body weight. For example, a 180 pound man would require approximately 810mcg (0.81mg) once daily. Further, studies have shown that maximal GH release is typically attained with a dosage of 10mcg/kilogram to a maximum of 20mcg/kilogram per day, with higher doses having diminished effectiveness.

## **WHAT ARE THE SIDE EFFECTS OF SERMORELIN**

Side effects of Sermorelin are generally mild and may include flushing, dizziness, headache, or pain at injection site immediately after administration. These typically clear up quickly and may lessen significantly in severity with continued administration. A more common side effect is sleepiness due to its impact on GH and cortisol levels as well as slow wave sleep (see “What is Sermorelin?” above). As a result, many protocols call for its administration prior to bed so as to mitigate any inconvenience this effect may cause. Importantly, Sermorelin may interact with glucocorticoid medication, so those who require it would be wise to consult their doctor prior to use.

## **WHY COMBINE IT WITH OTHER PEPTIDES**

Higher natural growth hormone levels can be attained with the combination of Ipamorelin with peptides like Mod-GRF or CJC-1295. These GHRH peptides possess complimentary mechanisms of action, affecting different receptors in the pituitary gland than Ipamorelin. As a result, when used in combination, higher growth hormone levels can be achieved. This can result in more performance enhancing effects such as faster muscle tissue growth and repair, better wound healing and recovery, and more rapid fat metabolism (fat loss), as well as even greater anti-aging effects.

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