

# Sermorelin Q and A

Along with Dr. Richard F. Walker, Ph.D., R.Ph. of Applied Research in Aging, we answer some of the most frequently asked questions about Sermorelin.

**Q: What is Sermorelin?**

**A:** Sermorelin is a form of growth hormone releasing factor (GRF) that contains only the first 29 amino acids. The GRF that is produced by neurosecretory neurons in the brain contains 44 amino acids. In the 1970's, Nobel Laureates, R. Guilleman and A. Shalley found that only the first 29 amino acids are responsible for stimulating pituitary production and secretion of hGH. Therefore, the chemical name for Sermorelin is GRH 1-29 NH<sub>2</sub>.

**Q: Is Sermorelin the same as human growth hormone (hGH)?**

**A:** No, it is a growth hormone secretagogue, which means that it stimulates the pituitary gland to produce and secrete growth hormone. Sermorelin is a small peptide containing only 29 amino acids whereas hGH is a much larger molecule containing 191 amino acids.

**Q: I've seen ads for hGH releasers that don't require a prescription. Are these the same as Sermorelin?**

**A:** No, the OTC releasers are usually the amino acids L-arginine, L-glutamine, L-ornithine, glycine, L-dopa, as well as such substances as ornithine alpha-ketoglutarate and the herbs Macuna pruriens and Tribulus terrestris. While high doses of these compounds sometimes elicit release of hGH from the pituitary gland, the effect is non-specific. In other words, they create a general effect on brain activity, just as exercise does, that sometimes causes hGH to be released. However, the effect is intermittent and unreliable since it does not work through any receptor specific process on the pituitary gland. Also, high doses of amino acids can produce kidney problems presenting a risk for the regular use of such products. In contrast, Sermorelin initiates its action exactly the same as that used by naturally occurring growth hormone releasing hormone. Furthermore, it has an excellent safety profile with little side effects.

**Q: If hGH is effective in addressing adult growth hormone deficiency, why should I consider Sermorelin?**

**A:** For several reasons including the fact that it produces the same effects on body composition and other benefits of hGH, but in addition, its effects are regulated at the level of the pituitary gland by negative feedback and by release of somatostatin so that safety concerns associated with the hGH overdosing are minimized or completely avoided. Tissue exposure to hGH released by the pituitary under the influence of Sermorelin is episodic not "square wave" preventing tachyphylaxis by mimicking normal physiology. By stimulating the pituitary it preserves more of the growth hormone neuroendocrine axis that is the first to fail during aging. Pituitary recrudescence resulting from Sermorelin blocks the cascade of hypophyseal hormone failure that occurs during aging thereby preserving not only youthful anatomy but also youthful physiology. It provides the patient with all the benefits and more of hGH replacement therapy and furthermore, its off label use IS NOT prohibited by federal law.

**Q: Must Sermorelin be injected just as is required for hGH?**

**A:** Currently, the only method for effectively administering Sermorelin is by subcutaneous injection. However, because the molecule is much smaller than hGH, it may someday be possible to successfully administer it through the nasal mucosa using a spray formulation. This hypothesis is currently being tested.



**Q: Are the effective dosages of hGH and Sermorelin comparable?**

**A:** Although the molecules work at different sites in the body (hGH at the liver and Sermorelin at the pituitary), the amount of material needed to be effective in raising serum IGF-1 are approximately the same. hGH is generally prescribed in daily doses of one or two international units (IU), while Sermorelin is typically prescribed in doses of 200 micrograms per day.

**Q: Are the costs for hGH and Sermorelin comparable?**

**A:** No. Sermorelin is significantly less expensive than hGH. Furthermore, a vial of hGH usually lasts approximately 12 – 14 days. In contrast, based upon clinical information defining the effective dose for stimulation of the pituitary gland, one multi-dose vial will be sufficient to last for 15 days.

**Q: Often, the effects of hGH fade after several months of use. What causes that loss of potency and does it also occur for Sermorelin?**

**A:** Loss of hGH potency after about six months or more of continuous use is not unusual and is not due to inferior product. It is due to the fact that injection of hGH elevates blood levels of the hormone to unnaturally high values for several hours each day. Also, constant stimulation causes increased production of IGF-1 which also has more constant tissue exposure than under normal conditions. These factors causes target tissue receptors to “down regulate” in an attempt to prevent over stimulation by the unnatural exposure to hGH and IGF-1. Under physiological conditions, hGH is released from the pituitary gland in episodes that cause levels to increase and decrease many times throughout the day. Under such conditions, tachyphylaxis or down regulation does not occur since the tissues receptors get time to “rest” between each stimulatory event. In contrast to hGH, there is no loss of potency with Sermorelin because its action on the pituitary gland is modulated by feedback through somatostatin. This causes hGH to be released from the pituitary in episodes, rather than in “square wave” pharmacological presentation as occurs upon injection of the gene recombinant product. In addition, the pituitary gland up-regulates to stimulation by Sermorelin causing the gland to rejuvenate.

**Q: Does Sermorelin have any non-endocrine effects that may be useful in treating aging clients?**

**A:** Yes. There are many reports of data in peer-reviewed medical and scientific journals showing that GRF/Sermorelin also has a direct effect on the brain to promote non-REM slow wave sleep.

**Q: Is there a standard protocol for prescribing Sermorelin?**

**A:** Sermorelin is administered by injection once daily prior to bedtime. The time of injection is important because the additional GRF provided by Sermorelin complements that which naturally occurs during sleep and thereby facilitates the nocturnal release of hGH that is characteristic of youth. Dose selection should be suited for each person's individual needs. Sermorelin for injection is available in multi-dose vials containing sufficient product for 15 days of therapy.

