

Treatment with Medications

The Spine and Growth Hormone

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Human Growth hormone (HGH) is a powerful chemical produced in the body. It is released in cycles, often associated with our circadian rhythm. It has a powerful impact on all tissues of the body. It facilitates the growth, repair and remodeling of bodily tissues. The levels of circulating HGH tends to peak while we are younger and begins to slowly decrease as we grow older. Growth hormone has a profound impact on the supportive tissues of the spine. It influences the turnover of tissues well as the remodeling of bone and collagen as well as the hypertrophy of muscle. Any time the spine is injured or supportive tissues are comprised a healing process takes place. The process is influenced by many factors including the presence of anabolic hormones such as testosterone, insulin and growth hormone.

The release of HGH is greatly influenced by the amount of sleep and one's exercise routine. Growth hormone release is typically highest during the first part of the night (early phase of sleep), which is why restful sleep is so important. When we shorten our [sleep](#) period, we blunt the effect of growth hormone, thus limiting our capacity for muscle growth and recovery.

Exercise is probably the largest contributor to growth hormone release. Exercise affects the release of growth hormone release through a variety of different mechanisms such as:

- Nerve Input
- Direct stimulation by catecholamines
- Lactic & nitric oxide
- Changes in acid-base balance

Different types of exercises impact the HGH in different ways. Resistance training offers is the most effective method for inducing growth hormone release. This is often referred to as exercise induced growth hormone release abbreviated EIGR. The major factors that determine how much of an increase is induced is the load and frequency of exercise. When heavier loads are lifted at a greater frequency (less rest time) this results in greater release of growth hormone. Resistance exercise which incorporates large

muscle groups at once tends to elicit the greatest growth hormone release as more total muscle fibers are called into play. This form of training can be incorporated into a spinal exercise regime. Core stabilization exercise involves resistance training of large muscle groups including the gluteal muscles of the hip region. Endurance training does not have quite the same impact although, the release of growth factor remains influenced by the intensity, duration, frequency as well as the type of exercise performed. A shorter bout of exercise performed for 10 to 15 minutes several times per day has a greater effect on HGH release than prolonged endurance activities.

As we age, we tend to lose muscle mass and increase our fat depots. A higher level of circulating growth hormone tends to reverse this process, increasing lean muscle tissue and decreasing body fat. Human growth hormone has many positive influences on the body including the turnover of muscle, bone and collagen, to the regulation of selective aspects of metabolic function including increased fat metabolism and the maintenance of a healthier body composition.

In situations where deficiency has been documented, a physician may prescribe supplemental hormones such as testosterone or growth hormone. When these hormones are used inappropriately, serious side effects may occur. Hormones should never be taken without the close supervision of a qualified physician.