

**THE EFFECTS OF HUMAN GROWTH HORMONE
REPLACEMENT THERAPY ON BODY
COMPOSITION AND IGF-1 LEVEL
IN THE HEALTHY ELDERLY
POPULATION**

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ABSTRACT

With the increasing interest and concern on health and 'healthy aging', more patients start to seek for medical advice and treatment to possibly prevent, delay, or even treat the signs and symptoms that inevitably comes with age. The quality of life of an elderly person above the age of 60 years is debatable as their medical health issues are said to exponentially increase after the age of 70 years old. The human body goes through many changes during aging. Growth hormone levels circulating in the blood are related to a person's body composition which results in a decrease in lean body mass as the growth hormone level decreases with age. The use of replacement human growth hormone (hGH) has been questionable in its use for aesthetic medicine as anti-aging therapy. This study was aimed to review the evidences of the efficacy of using hGH replacement therapy to affect the body composition by increasing the lean body mass and IGF-1 levels circulating in the blood, as well as to determine the safety profile of the treatment when used on patients. This study was a structured review of 6 articles which met the inclusion and exclusion criteria during the literature search on databases. All articles were considered to have high quality according to the assessment scores. All studies showed an increase in IGF-1 and GH levels after hGH administration. One study showed that the GH levels reached a plateau after 6 months of hGH treatment where the IGF-1 level remained in the normal range, and did not increase despite the continuous hGH therapy for an additional 6 months. Amongst the 6 articles reviewed, 4 studies showed that the increase in IGF-1 levels directly leads to the increase in lean body mass and decrease in fat tissues, while 2 of the studies showed no changes in body composition after hGH therapy. All 6 articles reported similar side-effects from hGH treatment such as peripheral edema, arthralgia, carpal tunnel syndrome, new heart murmurs, transient atrial fibrillation, and alopecia. It can be concluded from the articles reviewed that using hGH therapy for the purpose of improving body composition still remains debatable with 2 studies showing its ineffectiveness. Furthermore, caution should be taken when planning for hGH replacement therapy as the treatment is accompanied by multiple side-effects. This structured review can provide doctors with a summary of the clinical evidences of GH therapy in its use in anti-aging.