

# **Growth Hormone Deficiency in Young Adults**

## **Series 7**



## **Patient's Guide**

**Average Readability Leaflet**

## **Growth Hormone Deficiency in Young Adults - Series 7 (Revised August 2006)**

This leaflet was produced by Fernando Vera MSc and Prof Gary Butler at the Institute of Health Sciences, University of Reading, Reading, UK (August, 2006). Some portions of the text were extracted or modified from the Growth and Growth Disorders Booklet Series (Third edition, 2000)\* and may be used in conjunction with these as they provide a choice of leaflets providing the same information, but for people of different ages and reading abilities. The numbering sequence in each series is the same for easy cross-reference. The original leaflet series can be also obtained from the links given at the end.

All illustrations were created and produced by Fernando Vera MSc.

This leaflet is part of the Hormone Disorders Leaflet Series. The following are also available:

- Series N 3.** Puberty and the Growth Hormone Deficient Child.
- Series N 4.** Precocious Puberty
- Series N 5.** Emergency Information for Children with Cortisol and GH Deficiencies and those Experiencing Recurrent Hypoglycaemia.
- Series N 6.** Congenital Adrenal Hyperplasia
- Series N 7.** Growth Hormone Deficiency in Young Adults.
- Series N 10.** Constitutional delay of growth and puberty
- Series N 11.** Multiple Pituitary Hormone Deficiency
- Series N 12.** Diabetes Insipidus
- Series N 13.** Craniopharyngioma
- Series N 14.** Intrauterine Growth Retardation or Small Gestational Age
- Series N 15.a.** Hyperthyroidism
- Series N 15.b.** Hypothyroidism
- Series N. 16.** Type 2 Diabetes and Obesity

The development of these leaflets was funded (as a service to medicine) by Serono-Merck Ltd, Bedfont Cross, Stanwell Road, Feltham, Middlesex TW14 8NX, UK. Additional help was provided by the Child Growth Foundation ([www.childgrowthfoundation.org](http://www.childgrowthfoundation.org)).

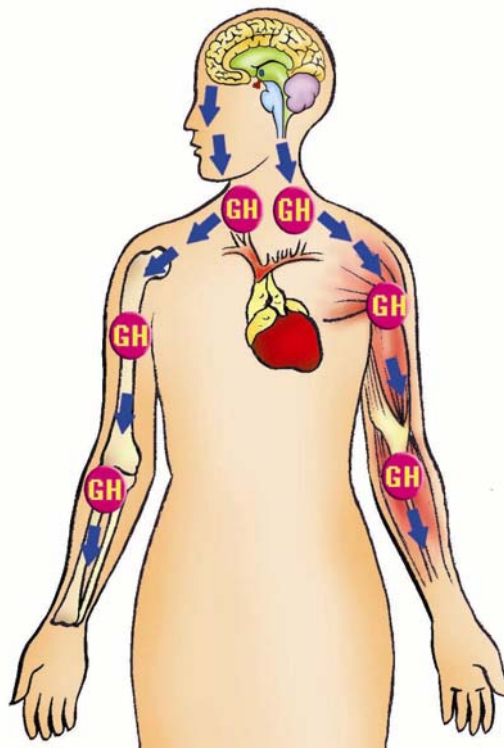
\*Written by Dr Richard Stanhope (Gt. Ormond Street/Middlesex Hospital, London) and Mrs Vreli Fry (Child Growth Foundation)

## Introduction

This leaflet aims to provide information about whether growth hormone replacement therapy should be continued into adulthood. It's mainly for those who received growth hormone treatment in childhood and/or adolescence. However, it may also help those individuals who have become deficient in growth hormone as adults for various medical reasons.

## What is Growth Hormone?

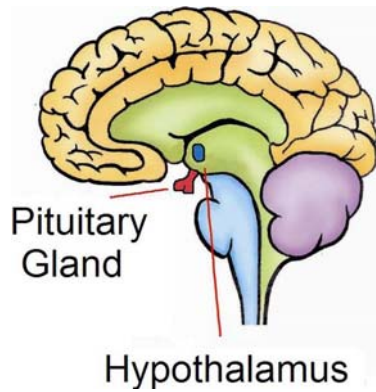
Hormones are messengers used around the body to produce an effect. The role of growth hormone is to control the growth of bones, muscles and organs. It's produced in the pituitary gland in the brain and released into the bloodstream.



Normally, growth hormone levels are high during childhood and reach a peak during the adolescent growth spurt. The levels then progressively decrease during adult life and in middle age the levels become much lower when compared with younger people. However, even these low levels of hormone play an important role during adulthood.

## What Is Growth Hormone Deficiency (GHD)?

In early childhood, **Growth hormone deficiency (GHD)** occurs when the brain fails to produce adequate levels of growth hormone. This is usually due to problems in either in the **hypothalamus** or the **pituitary gland**, which are parts of the brain involved in growth hormone production.



GHD in childhood will continue into adolescence and adulthood. Many of the symptoms of GHD in adulthood are subtle and individuals don't realise that some of the problems they have are related to GHD. Only when a trial of replacement hormone therapy is given, does the improvement in general health become apparent.

### How does GHD affect young adults?

Many young adults with GHD experience poor muscle strength and difficulty in carrying out normal physical activities. They are frequently aware of a general lack of energy, which affects academic life, work and other daily activities.



### What are the benefits of Growth Hormone treatment in adult life?

There are several benefits listed below. Some are less noticeable than others but equally important in your daily living:

- **General well being:** Adults with GHD have been shown to have more than the usual number of signs of a poor quality of life. These include reduced vitality, poor general health and poor coping abilities. These symptoms can improve or even disappear during growth hormone therapy.

- **Hypoglycaemia (low blood sugar):** Adults with GHD often experience symptoms of low blood sugar. These include irritability, excessive sweating at night and waking up with a headache. Growth hormone therapy can often prevent the occurrence of this condition.
- **Weight control:** Weight gain can be a frequent problem for individuals with GHD. Growth hormone treatment itself will not result in weight loss. It will, however, alter the distribution of body fat and reduce from the abdominal area.
- **Bone quality:** Growth hormone is important for building up the strength of bones. Individuals with GHD may develop osteoporosis (brittle bones). Preventing this is an important reason for continuing growth hormone treatment into adult life.
- **Cardiovascular disease:** Adults with GHD have a higher risk of illness from heart disease. Long-term treatment with growth hormone may decrease this risk.
- **Blood cholesterol:** Adults with GHD prematurely develop disease of the major blood vessels. Treatment with growth hormone may lower this risk.
- **Psychological problems:** Adults with GHD have a high incidence of anxiety and depression. There is evidence that growth hormone therapy has a beneficial effect on well-being and general performance.

### **Do all adults with GH benefit from treatment?**

Not all adults with GHD experience problems. As a result, not everyone will benefit from treatment. Your team of specialists will determine if treatment is appropriate for you.

### **What is the dose of growth hormone required?**

The dose given is based on measuring the rise of the hormone IGF-1 in your blood. The dose of growth hormone will then be adjusted to get the IGF-1 into the normal range. In some adults, mild side effects may include swelling of the ankles and raised blood pressure. A slight reduction in your dose will cause these effects to disappear.

### **How is growth hormone given?**

The only method of administering growth hormone is by injections. These are injected just under the skin in the thighs, upper arms or abdomen. The doses are given daily, usually in the evening.



## What are other sources of useful of information?

The goal of this leaflet was to provide a basic overview of GHD in adults. Further information can be found in the following sources:

- **European Society for Paediatric Endocrinology**  
ESPE Secretariat, BioScientifica  
Euro House 22 Apex Court Woodlands, Bristol BS32 4JT - UK  
Telephone No: + 44 (0) 01454 642208  
Internet: <http://www.eurospe.org/>
- **British Society for Paediatric Endocrinology and Diabetes**  
BSPED Secretariat, BioScientifica  
Euro House 22 Apex Court Woodlands, Bristol BS32 4JT - UK  
Telephone No: + 44 (0) 01454 642208  
Internet: <http://www.bsped.org.uk/>
- **Child Growth Foundation**  
2 Mayfield Avenue, Chiswick London W4 1PW UK.  
Telephone +44 (0) 20 8995 0257  
Internet: <http://www.childgrowthfoundation.org/>

You can also consult your doctor or nurse for additional information in your local area.

