Endocrine Investigation Unit

Wolfson Diabetes & Endocrine Clinic

Adult growth hormone replacement

The aim of this leaflet is to provide you with some general information about adult growth hormone replacement and the routine for its management at Addenbrooke’s Hospital. It is intended as a broad overview of the subject to inform you, prior to your first visit, with the endocrine specialist nurse, who will answer any questions you may have and discuss the details of your growth hormone replacement plan.

What is growth hormone?

Growth hormone (or somatotrophin) is made in the pituitary gland and passes from there into the blood stream. Growth hormone (GH) has an effect on virtually all the bodies’ organs and is needed in gradually decreasing amounts from the early twenties onwards following its peak production during the years of most growth and bone development. As GH is a protein it would be digested if taken orally, therefore it is given by subcutaneous (just under the skin) injection once daily. GH is normally released in greater quantities at night. So in order to mimic the hormone’s natural release, it is advised that the injection is given in the evening.

Why do adults need growth hormone?

Although the body’s highest demand for GH is during childhood and puberty, it is required in decreasing amounts for the body to use fat for energy, protein building and general quality of life.

People deficient in GH may notice an increase in fatty tissue particularly around the waist, as lack of this hormone can affect the fat-to-muscle ratio.

GH plays a vital role in increasing and maintaining bone mass up to the age of 60. There is growing evidence that adults who have low levels of GH have an increased fracture rate.

Lack of GH causes changes to blood cholesterol concentrations as well as other factors in the blood, which have been shown to be associated with an increased risk of heart disease.

The psychological effects of lacking GH can be varied and in extreme cases debilitating. These effects are tested by the Quality of Life Assessment of Growth Hormone Deficiency in Adults (QoL-AGHDA) which must be completed by all adults proven to be GH deficient prior to start of replacement.
GH deficient adults may experience extreme tiredness, memory loss, lack of motivation and concentration, feelings of anxiety, depression or just general low mood. Some people complain of increased emotional outbursts, paranoia, reduced confidence, low self esteem and reduced sociability.

The benefits of replacing this hormone deficiency should be the reversal or protection from the effects listed above. The use of the QoL-AGHDA at the end of a trial of GH provides the basis for assessing if the trial has been beneficial.

Are there any side effects to GH replacement?

GH used today is synthetically produced ‘recombinant human Growth Hormone’ (rGH) but has an identical structure to the natural hormone. The doses used in replacement will be gauged to maintain GH levels in the appropriate range for each individual. Side effects include mild swelling of the hands and feet with occasional joint discomfort, or tingling in the fingers but these are usually temporary and settle with a dose reduction if persistent. Occasionally a mild headache will occur at the start of treatment but this also usually passes within a few days. Effects on blood pressure and blood glucose level can occur and will be monitored by your endocrinologist and endocrine nurse specialist.

How will my replacement be managed?

To qualify for a trial of rGH replacement you will have undergone dynamic testing within the Endocrine Investigation Unit, with either an Insulin Tolerance Test or a Glucagon Stimulation Test. Should the testing show you to be GH deficient your endocrine doctor will send a shared care protocol (SCP) document to your GP. You will also need to give your permission for the Care Commissioning Group (CCG) to access your personal clinical information to fully consider the application for funding of this hormone replacement.

The SCP document outlines the GH replacement routine and how the replacement will be managed. Your GP needs to sign this to ensure prescription for the GH will be continued once the trial period is complete. Once signed, your GP must return a copy of the signed penultimate page of the document to the endocrine nurse specialist.

Once the nurse receives the signed SCP she will book your first or ‘baseline’ visit. You will need to allow 45 minutes to 1 hour for this visit which will involve measurement of your height, weight, waist and hip, and blood pressure. You will also have some blood taken, including an ‘insulin like growth factor I’ (IGFI) sample, which will be used to titrate your rGH dose according to your age adjusted range.

Please note it is important that you are seen regularly during the nine month trial period to ensure you are having the appropriate dose and any concerns or issues are addressed.

You will be provided with an appointment schedule by your endocrine nurse specialist once you have let her know your first injection date.
You will be seen at one month for a single blood test, then at three, six and eight months, when you will have the measurements taken at baseline repeated. Should any dose change be made outside this schedule, an IGF1 blood test must be collected to assess the effect. It is possible that you will not perceive any benefit from this replacement until three to six months into your trial period, which is why it is important to continue for the full nine month trial period before making your final decision.

On completion of your GH trial period you will need to complete another AGHDA questionnaire. Should this show you have perceived a benefit from the replacement you will be entitled to continue according to National Institute of Clinical Excellence (NICE) guidelines. You will then need to be seen annually by your endocrine nurse and endocrine doctor and we try and arrange these appointments on the same day, however we can see you at six monthly intervals if you prefer.

We are a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:
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