

## Patient information

### Adult Growth Hormone Replacement Therapy

#### Diabetes and Endocrinology Department

Adult growth hormone deficiency is caused by a low level or lack of production of growth hormone. This hormone is normally produced by the pituitary gland at the base of the brain and is needed to help maintain a healthy body. Growth hormone deficiency is diagnosed by undergoing special blood tests, which you usually have if your pituitary function is being assessed.

**All patients are different, but common symptoms of growth hormone deficiency include:**

- Excessive tiredness, sometimes with a strong need to sleep during the day.
- Lack of interest in life in general, including hobbies and occupation.
- Reduced memory and concentration.
- Impaired quality of life, measured using a questionnaire designed for patients with growth hormone deficiency.
- Increase in weight with more fat around the abdomen.
- Decrease in muscle mass leading to reduced stamina and strength.
- Higher risk of illness due to cardiovascular disease (heart attacks and strokes).
- Higher risk of broken bones due to loss of bone strength (osteopenia / osteoporosis).
- Abnormalities in the fats (lipids / cholesterol) in the blood which can also lead to increased risk of heart attack or stroke.

**Why should I take growth hormone replacement?**

**Treatment with growth hormone will help to:**

- Reduce body fat especially around your abdomen.
- Keep blood cholesterol level within normal range.
- Reduce the risk of illness due to cardiovascular disease (such as heart attacks and stroke).
- Build up muscle and so increase your stamina and strength.

- Reduce the risk of broken bones.
- Improve your sense of wellbeing and regain an interest in life with a return to work and hobbies.
- Reduce your feelings of excessive tiredness.
- Improve quality of life.

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

Growth hormone is given by injection under the skin (subcutaneous) using an injection pen device and needle. You will be taught how to use the injection pen device and needles so that you can give your own injection each day (usually mid to late evening). If you cannot manage the injections on your own, it is possible for us to teach a family member so they can help you.

The needles you will be using are thin and short, and the injections should be painless or at worst feel like a scratch.

You will need to use a different injection site every day to prevent one area becoming sore. You should use a new needle for every injection. All needles will need to be disposed of in a 'sharps bin'.

### **How do I get my growth hormone?**

All prescriptions of growth hormone are issued through the Royal Liverpool University Hospital. The endocrine specialist nurses will arrange your appointments with them, timed so that you do not run out of growth hormone.

When you start growth hormone you will be given / have delivered to you a starter kit containing a supply of needles and a sharps disposal bin, depending which device you choose to use.

Full sharps disposal bins can be collected by your local council environmental services department depending on where you live. Your endocrine nurse will advise you about this.

### **How much growth hormone will I be taking?**

Natural growth hormone levels vary throughout life but are known to reduce with age. Replacement doses of growth hormone are started low, at 0.2mg per day.

The endocrine specialist nurses will review you every four to six weeks initially to check your response to the treatment, monitor any side effects and to adjust the dose of growth hormone as needed. After the first three months you will be reviewed regularly, but less often. You can expect at least six appointments in the first year of treatment.

### **What are the side effects of growth hormone replacement therapy?**

Side effects are unusual and tend to be related to higher doses of growth hormone. You may have minor swelling of the hands and feet, with occasional joint discomfort when you first start growth hormone. It can also affect your blood sugar levels so this will be monitored at your clinic visits.

Most of the side effects are temporary and should reduce and stop altogether with time. It is important that you tell your endocrine specialist nurse if you have these or any other unusual effects after you start growth hormone therapy.

### **How long do I need to take growth hormone replacement therapy for?**

Growth Hormone is not a life preserving hormone and not everybody who is deficient benefits from growth hormone replacement. We follow NICE guidance which has been specifically compiled around this replacement. If you meet the NICE criteria you will undergo a nine month trial.

At the end of this trial, the continuation of growth hormone replacement depends on your response which is measured by changes in a quality of life questionnaire. If you are eligible, this is a condition that requires the growth hormone to be replaced on a daily basis for life.

### **When will I notice the benefits of growth hormone?**

The benefits of growth hormone therapy can take time to become noticeable. Within three to six months you should start to see changes in your body composition as fat is lost and muscle mass increases.

You should also start to notice an improvement in your quality of life and general wellbeing with increased interest in socialising, hobbies and work. However, it can take up to a year before you see the full benefit of growth hormone therapy.

### **What will happen when I see the nurse?**

When you see the endocrine specialist nurse, you will have your weight measured and your blood pressure will be taken. This helps us to monitor the changes in fat and muscle within your body. Blood tests will also be taken to ensure you are taking the correct dose of growth hormone.

We will assess your quality of life score before you start treatment. Over the next three months we will monitor you closely by measuring your blood levels of growth hormone markers. We may need to adjust your growth hormone dose so that we make sure you are getting the right amount, this will depend on your blood results.

When you have had a stable dose for six months (usually nine months after starting treatment) we will recheck your Quality of Life score. This is important as this lets us know if growth hormone is working for you.

If you continue on growth hormone, you will be seen every 6 months and issued with a growth hormone prescription. Once a year you will have a general health check that will include blood tests for cholesterol, blood sugar and for levels of any other hormone replacement medication you may be taking.

### **Is there an alternative treatment?**

There is no alternative treatment and the only method of replacing growth hormone is by injection.

## **What will happen if I don't have this treatment?**

Without growth hormone you will continue to have all the symptoms of growth hormone deficiency.

You may feel tired and need to sleep during the day, memory and concentration may be poor, you may lose interest in life in general and find mixing with others difficult. The risks of illness from cardiovascular disease or of thinning of bones will continue and you will find your muscle strength weakens.

## **Feedback**

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

## **Further Information**

**Please feel free to contact the Endocrine Specialist Nurses with any questions you may have. There is an answer machine where you can leave your name and contact details. We will return all calls.**

### **The Endocrinology Specialist Nurses**

**Tel: 0151 706 2417**

**Text phone number; 18001 0151 706 2417**

### **Useful addresses:**

**National Support Office  
The Pituitary Foundation  
86 Colston Street  
Bristol  
BS1 5BB  
Tel: 0117 370 1320**

**Email: [helpline@pituitary.org.uk](mailto:helpline@pituitary.org.uk)  
[www.pituitary.org.uk](http://www.pituitary.org.uk)**

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