

# Steroid induced diabetes



Information for families

Great Ormond Street Hospital  
for Children NHS Foundation Trust

**This information sheet from Great Ormond Street Hospital (GOSH) explains the causes, symptoms and treatment of steroid induced diabetes, and where to get help.**

## **What is steroid induced diabetes?**

### **What are steroids?**

Steroids are hormonal chemical messengers that are produced naturally in the body by the adrenal glands (which are just above each kidney) and by the reproductive organs. Man-made versions of these hormonal substances are used to treat a wide range of illnesses and medical conditions.

They damp down the immune system so that, for instance, it does not fight a transplanted organ. Steroids are also used to treat auto-immune conditions, where the body starts to attack itself after mistakenly recognising its cells as the 'enemy'.

As well as damping down the immune system, very high doses of steroids may have other effects on the body, such as weight gain and thinning of the bones when taken for a long period of time. They may also affect how the body controls insulin.

## What is insulin?

Insulin is a hormone, which controls the concentration of glucose (sugar) in the blood. Insulin is released by beta-cells in the pancreas. Normally, the beta-cells release insulin in response to the concentration of glucose in the blood. Glucose is the body's energy source and the insulin transports the glucose into the cells where it is needed.

When there is a high concentration of blood glucose, the beta-cells release more insulin to allow the glucose to be absorbed from the blood. If there is a low concentration of glucose, the beta-cells release a much smaller amount of insulin or even switch off insulin production. This keeps the blood glucose concentration balanced and at the right level for the rest of the body to function normally.

## How do steroids induce or bring on diabetes?

Normally, the liver reduces the amount of glucose it releases in response to insulin. Steroids make the liver less sensitive to insulin so it carries on releasing glucose even if the pancreas is releasing insulin. Steroids also stop glucose being absorbed by muscle and fat in the body so it circulates in the blood stream. Steroids reduce the body's sensitivity to insulin and therefore more insulin is required to transport the glucose into the cells.

## What are the signs and symptoms of steroid induced diabetes?

The signs and symptoms of steroid induced diabetes are the same as for other types of diabetes. These can include:

- Dry mouth
- Thirst
- Increased urination (peeing)
- Feeling tired
- Weight loss

Some people can have high blood glucose concentrations without showing any symptoms. This is why it is important to have regular blood tests to measure the concentrations of glucose in the blood.

## How is steroid induced diabetes diagnosed?

Steroid induced diabetes is diagnosed with a finger prick test for a small sample of blood to look at the blood glucose concentration and this will be checked by your specialist team as an inpatient or outpatient. If your child or young person has a fasting blood glucose above 7 mmol/L or a random blood glucose above 11.1 mmol/L, they have diabetes.

## How is steroid induced diabetes treated?

Steroid induced diabetes is treated with insulin injections. Your child will need to check their blood glucose concentrations regularly and adjust their insulin dose if needed. Our Clinical Nurse Specialist for Diabetes will teach you and your child how to manage their diabetes.

Your child may have to adjust their diet as well to help manage their blood glucose concentrations. We will arrange for your child to see a Diabetes Specialist Dietitian to understand how best to manage diet and diabetes.

The specialist team monitoring your child's condition will also be involved, as adjusting the dose of steroids may improve blood glucose concentration.

## What happens next?

Some people find that when they have stopped taking steroids, their blood glucose concentrations return to normal. Your doctor will discuss with you whether there are alternative medicines your child could take to manage their condition.

## Further information

Call our **Clinical Nurse Specialist for Diabetes** on 020 7405 9200 ext. 1597 or Diabetes Specialist Dietitian on 020 7405 9200 ext. 5941

## Notes

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