

Water deprivation test

Information for patients

This leaflet answers some of the questions you may have about having a water deprivation test. It explains the purpose of the test and the side effects you may have during the test. This leaflet also explains what you can expect when you come to hospital. If you have any other questions or concerns, please speak to the doctors or nurses caring for you.

What is a water deprivation test?

This is a test used to find out if you are producing enough of a hormone called anti-diuretic hormone (ADH) from your pituitary gland. The pituitary gland is a small, pea-sized gland located below the brain. It produces a lot of the body's hormones. Hormones are chemical signals that help control and regulate processes in the body. ADH is a hormone released by the pituitary gland that works on the kidneys to regulate the amount of urine that is produced.

This test measures how your kidneys respond when you don't have anything to drink and is used to diagnose a rare condition called diabetes insipidus. Diabetes insipidus can cause excessive thirst and large amounts of urine to be excreted by your body. People with this condition are unable to conserve water, meaning too much fluid leaves the body. This can be due to a lack of anti-diuretic hormone (ADH) production by their pituitary gland. In rare cases it can be caused by kidney disease.

Why do I need this test?

You need this test to investigate the cause of your symptoms and work out why you are feeling thirsty or passing a lot of urine. We use this test to see whether you might have a condition called diabetes insipidus. This is a disorder in which your kidneys are unable to retain water, so you produce large volumes of urine which makes you to feel very thirsty. This may be caused by a problem with your pituitary gland or your kidneys.

What are the benefits?

This test will help us find out the source of your problem and to differentiate, or rule out, diabetes insipidus from other problems.

What are the risks?

A cannula (tiny plastic tube) will be inserted into a vein in your arm or hand using a needle. The cannulation process is similar to that of a blood test. Associated risks with cannulation or a blood test may include:

- multiple punctures to locate veins
- bleeding from puncture site
- bruising
- haematoma (blood build up under the skin)
- fainting or feeling lightheaded
- infection (a slight risk any time the skin is broken)
- phlebitis (inflammation of the vein)

Keeping pressure on the puncture site for a few minutes after the needle is removed will help to reduce bruising.

There is a risk of dehydration during the test and you may experience hunger, thirst and headaches. The nursing staff will monitor you throughout the test and liaise with the endocrine doctors as required.

Are there any alternatives?

There is no alternative to this test to determine the cause of your symptoms (excessive thirst and/or passing a lot of urine). It is important for us to know whether you have diabetes insipidus, and if you do, whether the condition is due to a pituitary problem or a kidney problem. The findings of the test will allow you and your doctor to manage your condition.

Do I need to prepare for my test?

Avoid alcohol and drinks containing caffeine, including tea and coffee, from 6pm the evening before the day of your test.

If you are taking medication such as DDAVP (Desmopressin) or if you are taking water tablets (diuretics) such as spironolactone, bendroflumethiazide, furosemide or any other water tablets, you should stop taking these tablets the evening before the test.

On the day of your test you may eat a light breakfast and have a drink before 6.30am. You may take your usual medications, apart from the medications mentioned above, before you come in for your test. From 6.30am onwards you should have nothing to eat or drink.

Please bring all of your medication with you.

What happens before my test?

Your blood pressure will be taken and the nurse will ask you about your regular medications.

What happens during my test?

A small, thin tube called a cannula will be inserted into a vein in your arm or hand. This allows your nurse to take blood samples directly from the cannula without further use of needles. When the cannula is inserted the first blood sample will be taken. You will be asked

to give the first urine sample and you will be weighed. You will not be allowed to eat or drink during the test. Smoking is also not allowed during the test as this will affect the results.

Every two hours you will be weighed and you will be asked to empty your bladder. This urine is carefully measured and a sample sent to the laboratory for analysis. Blood samples are also taken at this time and sent to the laboratory for analysis. It is very important that you do not drink anything during the test, even if you feel very thirsty, as we would be unable to interpret the results.

The results of your blood and urine samples will be reviewed throughout the test. The results determine whether the test can be completed or if it is appropriate to progress to the second part of the test. The second part of the test involves having an injection of antidiuretic hormone called desmopressin into the skin. If appropriate, this is usually given at around 4pm, after which time you will be able to eat and drink. After the injection, blood and urine samples will be collected for two more hours.

How long does the test take?

The test is a whole day test and should start as early as practically possible. Your appointment will be booked for 8.30am.

The test usually lasts six to ten hours. You are able to eat and drink during the last two hours of the test, as long as the nursing staff have confirmed you can do so.

The length of the test depends on the results of the blood and urine samples taken during the test. The results are reviewed as soon as they are given to us by the laboratory. If we discover early on that you do not have diabetes insipidus, then the test will not take too long.

What happens after my test?

When the test has finished, your cannula will be taken out and you will be given something to eat and drink before you go home.

You should be able to do normal activities and you will be allowed to drive home.

Results will be reviewed by the endocrine team. They will either be sent to you by letter or, in some cases, discussed on the phone or with you at your next clinic appointment. We will also send a letter to your GP. This may take up to six weeks.

If the results show that you require treatment with anti-diuretic hormone, you will receive a call within a few days of the results being available about starting the treatment.

Caution

It is important that you do not drink too much after receiving the desmopressin injection. The injection causes concentration of urine and if you drink excessively, you may develop an imbalance of salt levels in your blood. This may lead to feeling ill and disorientated. We advise that you do not drink more than one litre (about two pints) of fluids after the test until midnight to prevent this. You may drink your choice of fluids.

Contact

If you have any queries or concerns please contact the Programmed Investigation Unit (PIU).

Tel: 020 3299 3034 or 020 3299 1385. Opening hours: 8am to 6pm, Monday to Friday.

Sharing your information

We have teamed up with Guy's and St Thomas' Hospitals in a partnership known as King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas'. To make sure everyone you meet always has the most up-to-date information about your health, we may share information about you between the hospitals.

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. The PALS office is located on the ground floor of the Hambleton Wing, near the main entrance on Bessemer Road - staff will be happy to direct you.

PALS at King's College Hospital, Denmark Hill, London SE5 9RS

Tel: **020 3299 3601**

Email: **kch-tr.palsdh@nhs.net**

You can also contact us by using our online form at **www.kch.nhs.uk/contact/pals**

If you would like the information in this leaflet in a different language or format, please contact PALS on **020 3299 1844**.