Cystic Fibrosis Trust

The sweat test

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The sweat test is a test used to diagnose cystic fibrosis (CF). This factsheet explains how the test works, why it is used and what the results mean.

What is the sweat test?

The sweat test measures the amount of salt (usually measured as chloride) in sweat. This is done by collecting a small amount of sweat from the arm, or sometimes the upper part of the leg.

Why is it used?

Cystic fibrosis (CF) is caused by changes (variants) in a gene that controls the movement of chloride across cell membranes. This results in higher amounts of chloride (as salt) in sweat compared with those who do not have CF. The sweat test is used to help make, or rule out, a diagnosis of CF where there is a family history or a possibility of CF.

Screening for CF has been part of the national newborn blood spot screening programme (also known as the heel prick test) since 2007. All newborns are offered this screening at five days old. This means that most children with CF are diagnosed shortly after birth. A positive screening result, or 'CF suspected', suggests that a baby may have CF. A sweat test is needed to confirm or exclude the diagnosis.

Sometimes, the sweat test is used in children or adults without a family history of CF, to look for the cause of frequent chest infections, unexplained diarrhoea, and not putting on weight or growing normally. This is usually to exclude a diagnosis of CF. In adults, the sweat test is also helpful to investigate bronchiectasis (a lung condition), infertility (difficulty in getting pregnant), and pancreatitis (a condition where the pancreas becomes swollen).

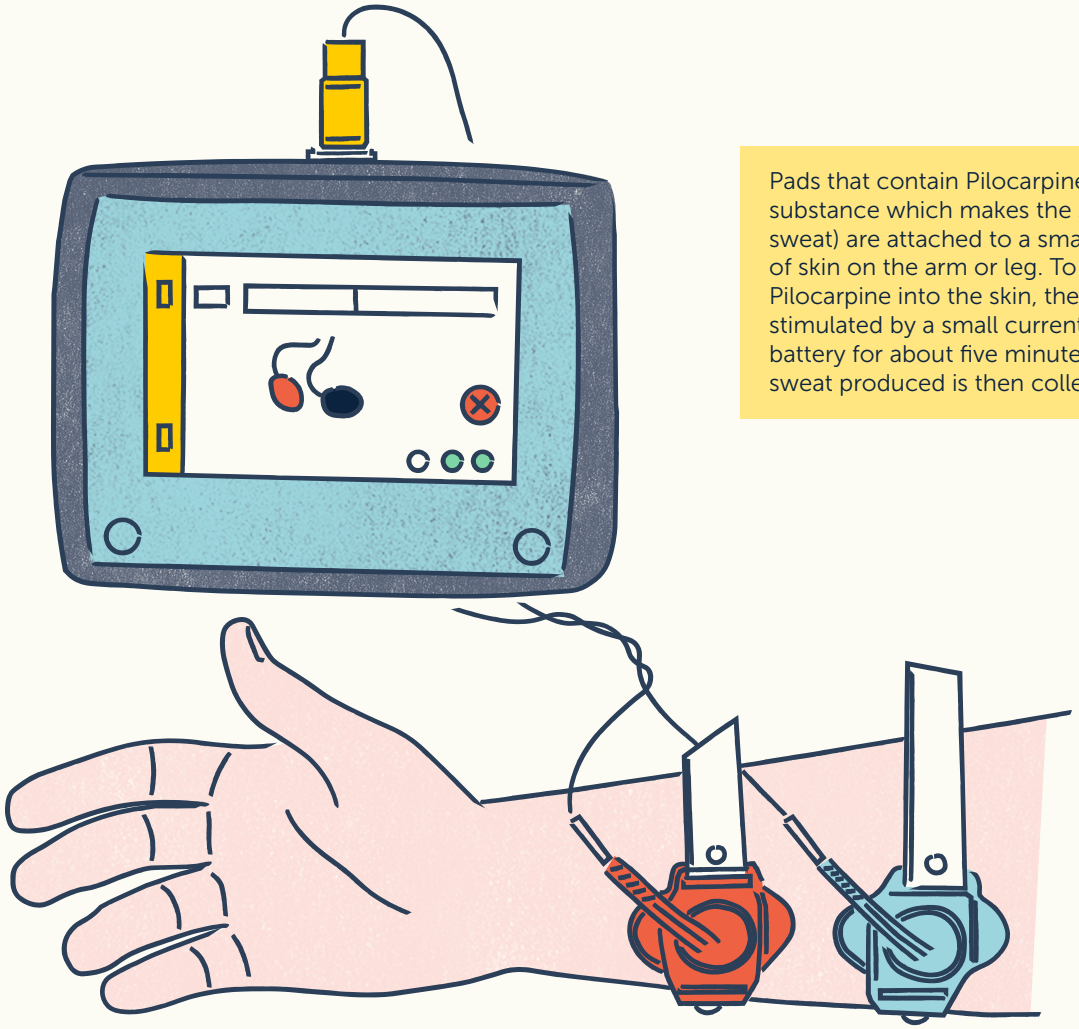
How is the test performed?

A small area of skin on the arm or leg is cleaned with water, and two gels or special pads are attached. These gels/pads contain a substance called Pilocarpine, which will make the skin sweat. To get the Pilocarpine into the skin, the area is stimulated by a small current from a battery for about five minutes. This may produce a tingling sensation but is not harmful and does not hurt.

The gels/pads are removed and the skin is cleaned. A small coil device or a piece of special paper is placed onto the arm/leg. Sweat is collected into the coil or on the paper for about 20–30 minutes. The sweat is then taken to the laboratory for analysis. The whole test usually takes about 30 minutes.

The area of the arm or leg which was stimulated may stay red for a few hours after the test, but this is normal and nothing to worry about. The test is very safe and the risk of any problems is extremely small.

Occasionally it is necessary to repeat the test if not enough sweat has been collected or there was a problem with the test. This does not necessarily mean that you, or your child, are more likely to have CF. Sometimes, the test needs to be repeated because of a borderline chloride result (when the result does not clearly show a high or normal level of salt in the sweat).



Pads that contain Pilocarpine (a substance which makes the skin sweat) are attached to a small area of skin on the arm or leg. To get the Pilocarpine into the skin, the area is stimulated by a small current from a battery for about five minutes. The sweat produced is then collected.

The result of the sweat test

You will usually receive the result of the test within a few days from the doctor who requested the test. The result can help your doctor to make a diagnosis, but they will also rely on symptoms and the results of other tests.

If your baby is being tested because of a newborn screening test result, arrangements will be made for the sweat test result to be explained to you by a doctor in your CF clinic. This is part of the follow up from the screening results and will usually be within 24 hours.

If you have any questions or concerns about why this test is being performed, you should ask your doctor. You should not telephone the laboratory for results: laboratory staff are not allowed to give out results on the telephone, as they may not know the background for a specific patient.

"The process of the sweat test was explained to me and I understood what would happen but I was still worried about it. I was scared that it would be painful and I would embarrass myself by finding what was meant to be a simple test difficult. All tests are hard mentally as there is the anticipation of the results. However it wasn't a big deal at all and it didn't hurt. It just left a little pink sweaty circle on my forearm which went away before I got back to the car park. I was 29 when I had my test, but if my toddler daughter was going to have this test now, I wouldn't be worried about the process. I'd be more concerned about remembering to take things with me to distract her and keep her busy."

Claire, person with CF

Further information

Find more information resources about living with cystic fibrosis at **cysticfibrosis.org.uk/information**.

Our Helpline is open 10am – 4pm Monday to Friday. It's available to anyone looking for information or support with any part of cystic fibrosis, a listening ear, or just to talk things through.

How to reach us:
- Call **0300 373 1000** or **020 3795 2184**
- Email **helpline@cysticfibrosis.org.uk**
- Chat with us on **Facebook**, **Twitter** or **Instagram**
- Message us on WhatsApp on **07361 582053**

Visit **cysticfibrosis.org.uk/helpline** for more information.

We welcome your feedback on our resources.

You can also ask for this resource in large print or as a text file. Email **infoteam@cysticfibrosis.org.uk**.

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Cystic Fibrosis Trust

Cystic Fibrosis Trust is the charity uniting people to stop cystic fibrosis. Our community will improve care, speak out, support each other and fund vital research as we race towards effective treatments for all.

We won't stop until everyone can live without the limits of cystic fibrosis.

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