Doncaster and Bassetlaw
Teaching Hospitals
NHS Foundation Trust

# The Sweat Test

**The sweat test is 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, in a small baby.

## Why is it used?

In people with cystic fibrosis there is a problem in the transport of chloride across cell membranes. This results in higher concentrations of chloride (as salt) in sweat compared to those who do not have cystic fibrosis. The sweat test is one of the methods we use to help make, or exclude, a diagnosis of cystic fibrosis.

Screening for cystic fibrosis is part of the national newborn blood spot screening programme. The sweat test is performed in those babies suspected of having cystic fibrosis as part of the follow up of the screening process.

It may also be performed to look for possible causes of the illness in children who have normal screening results and no family history of cystic fibrosis but who are having lots of chest infections, unexplained diarrhoea, or are not putting on weight or growing normally. In these circumstances the test is often used to exclude a diagnosis of cystic fibrosis.

It is also helpful in investigating adults with problems like bronchiectasis, infertility and pancreatitis – and in such cases the adult will go through the same process as a child would.

## How is the test performed?

The test will be carried out in the Children's Outpatients Department or in the Children's Ward by a specially trained member of staff from the laboratory.

A sample of sweat is collected by a process referred to as iontophoresis. A small area of skin cleaned with water, and two gels or special pads are attached.

These gels contain a substance called Pilocarpine, which will make the skin sweat. In order 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 does no harm and does not hurt. Following stimulation, the area may be visibly pink/red.

The gels/pads are then removed, the skin is cleaned and a small collecting device is placed onto the arm or leg and secured with a Velcro strap. The device contains a coiled tube into which the sweat is collected. The device will be kept in place for at least 20 minutes, but for no longer than 30 minutes.

During this time your child will be allowed to play, although care must be taken not to dislodge the device. Following collection the sweat is then taken to the laboratory for analysis.

You should expect the appointment to last for around one hour. 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.

A minimum volume of sweat is required for the test. Occasionally it is necessary to repeat the test if insufficient sweat has been collected, or if there has been some contamination.

This does not necessarily mean that your baby or child is more likely to have Cystic Fibrosis. However, sometimes a borderline chloride result is obtained, and a repeat test will be necessary.

## The result of the sweat test

The sweat is analysed on the day of collection and results are normally available later that same day. The test can help your doctor to decide what is wrong, but they will also rely on the 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, as part of the follow up from the screening results. This will usually be within 24 hours.

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

## Further information

If you have any specific queries regarding the test and what to expect, please contact the Paediatric secretaries on 01302 642288.

The Cystic Fibrosis Trust provides information about cystic fibrosis through factsheets, leaflets and other publications. Most publications can be downloaded from their website (www.cysticfibrosis.org.uk/publications) or ordered using their online publications order form.

Alternatively, to order hard copies of their publications you can telephone the CF Trust on 020 3795 1555 or e-mail publications@cysticfibrosis.org.uk.

If you would like further information about cystic fibrosis please contact: Cystic Fibrosis Trust, 2nd Floor One Aldgate, London, EC3N 1RE, or contact their helpline on 0300 373 1000.

**References:** Cystic Fibrosis Trust Factsheet, 2016 and Guidelines for the Performance of the Sweat Test for the Investigation of Cystic Fibrosis in the UK 2nd Version: An Evidence Based Guideline, 2014.

## Patient Advice & Liaison Service (PALS)

The team are available to help with any concerns, complaints or questions you may have about your experience at the Trust. Their office is in the Main Foyer (Gate 4) of Doncaster Royal Infirmary. Contact can be made either in person, by telephone or email.

## The contact details are:

**Telephone:** 01302 642764 or 0800 028 8059

**Email:** dbth.pals.dbh@nhs.net