NORTH CAROLINA NEWBORN SCREENING PROGRAM

Cystic Fibrosis (CF) Sweat Test Fact Sheet for Parents

Sweat Test

If you show symptoms of cystic fibrosis or your baby has a positive newborn screen for CF, a sweat test at a CF Foundation-accredited care center can help provide a CF diagnosis by measuring the concentration of salt in your or your baby's sweat. The test is painless and is the most reliable way to diagnose CF.

The Most Reliable Test

The sweat test is considered the most reliable for diagnosing cystic fibrosis. Sweat tests should be done at a CF Foundation-accredited care center, where guidelines are used to help ensure accurate results. The sweat test is performed by a trained technician and the results are evaluated in an experienced and reliable laboratory.

The sweat test can be done for anyone older than 48 hours. However, some infants may not make enough sweat to do the test. If an infant does not produce enough sweat the first time, the test should be repeated.

If your baby had a positive newborn screen (NBS) or you received a positive prenatal genetic test, it's important to schedule a sweat test as soon as possible once your newborn is between 48 hours and 10 days old. At the latest, babies with a positive NBS or prenatal genetic test should have a sweat test performed by the age of 4 weeks to ensure that any health issues or changes can be found early and treated quickly.

What To Expect During a Sweat Test

The sweat test measures the amount of chloride (a component of salt) in the sweat. There are no needles involved in this test. In the first part of the test, a colorless, odorless chemical (pilocarpine) and a little electrical stimulation is applied to a small area of the arm or leg to encourage the sweat glands to produce sweat. A person may feel tingling in the area, or a feeling of warmth. This part of the test lasts about five minutes.

The sweat is then collected on a piece of filter paper or gauze or in a plastic coil. This step lasts for 30 minutes. The collected sweat is then sent to a hospital laboratory to measure how much chloride is in the sweat -usually later the same day. The sweat test usually takes about an hour, but it may take longer. When you schedule the test, ask how long it will take and when you can expect to learn the results.

Preparing for a Sweat Test

There is no activity limit or special diet needed before the sweat test. However, you should not apply creams or lotions to the skin 24 hours before the test. You can continue all regular medications. These will have no effect on the test results. Babies should be fed their usual amount at their usual times.

Understanding Sweat Test Results

People with CF have more chloride in their sweat than people who do not have CF.

For a child who has CF, the sweat chloride test results will confirm the diagnosis by showing a high chloride level. A baby has to sweat enough to do the test. Full-term babies usually produce enough sweat by 2 weeks of age. The test should be done as soon as possible between 10 days and, at the latest, 4 weeks of age for babies who have had a positive NBS or prenatal genetic test.

Typically, sweat chloride values do not change from positive to negative or negative to positive, as a person grows older. Sweat test results also do not vary when a person has a cold or other brief illness. If a sweat test is done correctly, then results that are positive will show a high chloride level.

To understand what the sweat test results mean, a chloride level of:

- Less than or equal to 29 mmol/L = CF is unlikely regardless of age*.
- Between 30 - 59 mmol/L = CF is possible and additional testing is needed.
- Greater than or equal to 60 mmol/L = CF is likely.

*Although a sweat test result of less than 29 mmol/L makes CF unlikely, there are CF transmembrane conductance regulator (CFTR) mutations associated with sweat test results of less than 29 mmol/L.

When sweat chloride test results fall between the range of 30-59 mmol/L, the sweat test is usually repeated.
If your child had a positive NBS and has a sweat test of 30-59, you should consult with a CF clinician who can explain the results and recommend further testing.

Further testing may be recommended for those whose sweat test results fall into the intermediate range and whose genetic analysis detects unknown variants or that their CFTR genotype is undefined. If further testing is unavailable or found to be inconclusive, the diagnosis cannot be resolved, and the baby may be considered to have CF-related disorder. A positive NBS is not required for this classification.

NC DEPARTMENT OF
HEALTH AND HUMAN SERVICES

Where do I go for more information?

Use your phone's camera to scan the QR code below.

Cystic Fibrosis Foundation:
https://www.cff.org/

North Carolina Department of Health and Human Services
N.C. DHHS is an equal opportunity employer and provider
www.ncdhhs.gov

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