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**Lab Dept:** Other Fluids

**Test Name:** SWEAT CHLORIDE

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***General Information***

**Lab Order Codes:** SWCL

**Synonyms:** Iontophoresis

**CPT Codes:** 89230 x2 – Sweat collection by iontophoresis  
82438 x2 – Chloride; other source

**Test Includes:** Chloride concentration in sweat reported in mEq/L from duplicate collection sites.

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***Logistics***

**Test Indications:** The analysis of sweat for increased electrolyte concentration is used to confirm the diagnosis of cystic fibrosis. The sweat test occurs in three phases: sweat stimulation, sweat collection and sweat chloride analysis.

**Lab Testing Sections:** Chemistry

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Monday – Friday

Minneapolis Collection times: 1000, 1045, 1130 and 1300

St. Paul Collection times: 0900 - 1300

**Turnaround Time:** 1 day

**Special Instructions:** Call Children's Hospitals and Clinics Laboratory to schedule testing.  
**Specimens must be collected by trained laboratory staff.**

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***Specimen***

**Specimen Type:** Fluid - Sweat

**Container:** Wescor Macroduct collection device (SS-032)

**Draw Volume:** >15 uL sweat

**Processed Volume:** 10 uL sweat

**Collection:** Sweat specimens are collected in duplicate from two different sites using the Wescor Macroduct collection device. Laboratory staff must collect these specimens. Contact the laboratory regarding questions on collection procedures. The collection process requires 45-60 minutes to complete.

**Special Processing:** N/A

**Patient Preparation:** Each patient being considered for sweat collection should be: >48 hours old, well-hydrated, clinically stable, free of acute illness, not receiving mineralocorticoids, not on oxygen by open delivery, and should not be receiving bromide or iodide (as this interferes with chloride).

**Sample Rejection:** Sweat collection yielding <15 uL of specimen within the 30 minute collection window; patients on bromide or iodide; mislabeled or unlabelled specimens; single collection

**Interpretive**

**Reference Range:**

<b>Sweat Chloride (mEq/L):</b>	<b>Interpretation:</b>
<b>Newborns &lt;6 months:</b>	
0 – 29 mEq/L	Negative – A normal sweat chloride cannot be used as the sole criterion for exclusion of a diagnosis of cystic fibrosis.
30 - 59 mEq/L	Borderline – Borderline results, recommend repeat in 30 to 60 days.
≥60 mEq/L	Positive – Consistent with a diagnosis of cystic fibrosis.
<b>Note:</b> Values ≥30 mEq/L will be called to the Cystic Fibrosis Clinic Director and ordering physician.	
<b>Children &gt;6 months:</b>	
0 – 39 mEq/L	Negative – A normal sweat chloride cannot be used as the sole criterion for exclusion of a diagnosis of cystic fibrosis.
40 – 59 mEq/L	Borderline – Borderline results, recommend repeat in 30 to 60 days.
≥60 mEq/L	Positive – Consistent with a diagnosis of cystic fibrosis.

**Note:** Values  $\geq 40$  mEq/L will be called to the Cystic Fibrosis Clinic Director and ordering physician.

**Critical Values:** N/A

**Limitations:** N/A

**Methodology:** Pilocarpine Iontophoresis/Titration

**References:** Direction Circular Digital Chloridometer Chloride Standard insert for 442- 5066, 4/96

Clinical and Laboratory Standards Institute (2009) C34-A3 – Sweat Testing: Sample Collection and Quantitative Chloride Analysis; Approved Guideline – Third Edition (ISBN 1-56238-713-8), 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087

Digital Chloridometer Instruction Manual (1997)

LeGrys, Vicky A (1996) Sweat Testing for the Diagnosis of Cystic Fibrosis: Practical Considerations J Pediatr 129:892- 7

Guidelines for Diagnosis of Cystic Fibrosis in Newborns through Older Adults, Cystic Fibrosis Foundation Consensus Report, August 2008

**Updates:** 8/19/2009: Updated collection times, revised normal ranges. Critical value previously listed as  $\geq 40$  mEq/L.  
3/3/2011: Collection time update for St. Paul, previously listed as 0830 – 1330.