Sweat Test

UKAS MEDICAL 7880 Accredited to ISO 15189:2012

Synonyms	
Clinical Indication	In cystic fibrosis there is a defect in the cystic fibrosis transmembrane conductance regulator (CFTR) gene on chromosome 7. This codes a transmembrane protein affecting chloride transport and giving rise to excessively viscous secretions. The disease shows an autosomal recessive pattern of inheritance, with a relatively high incidence of 1:2500 live births in white Northern European populations. Over 1000 mutations at this locus have been associated with cystic fibrosis, although some are very rare. The ΔF508 mutation accounts for about 70% of UK cases. The test is usually performed on young children with symptoms typical of cystic fibrosis, such as repeated respiratory infections, and/or exocrine pancreatic insufficiency. It is also undertaken if there is a family history of the disease, although if the genotype is known DNA studies may be appropriate.
Part of Profile / See Also	
Request Form	Combined Pathology manual Blood form or ICE request
Availability / Frequency of Analysis	The test is performed in the Paediatric Department at Southend Hospital by appointment only. **Southend patients:** Please telephone the POCT team on Ext 6612 for bookings. **Basildon patients:** Please telephone the Biochemistry Laboratory, Basildon Hospital, where BMS staff can book in patients using the internal joint booking form. Alternatively please telephone POCT team at Southend on 01702 435555 ext 6612. Email enquires can be sent to mse.poct.suhft@nhs.net Patients/carers will be in the department for about an hour.
Turnaround Time	Chloride will be measured within 3 days of collection.
Patient Preparation	It is not normally possible to test children under two months old, because of the physical difficulty of sweat collection. In children up to six weeks old, a blood immuno-reactive trypsin assay may be used to screen for cystic fibrosis.
Sample Requirements	
Specimen Type	Sweat
Volume	Minimum 20µl
Container	Micro cup
Reference Range & Units	**Normal** <40 mmol/L for children aged 6 months and older or <30mmol/L if less than 6 months of age. **Intermediate** 40 – 60 mmol/L for children aged 6 months and older or 30 – 60 mmol/L if less than 6 months of age.

	Elevated >60 mmol/L
Interferences	Sweat test should be deferred if patient on systemic corticosteroids. Sweat test should be deferred in subjects who are dehydrated, systematically unwell, oedematous, under Topiramate treatment or who have marked eczema covering potential stimulation sites. Chloride containing solutions cannot be used to clean the skin, nor local anaesthetic gel be applied.
Interpretation & Clinical Decision Value (if applicable)	The chloride levels in the sweat from affected individuals are high. Cystic fibrosis is unlikely with a sweat chloride level of <40 mmol/L. A chloride level of >60 mmol/L is consistent with a clinical diagnosis of cystic fibrosis. Abnormal results will be telephoned to the requesting Clinician. A confirmatory sweat test will be done if requested. A blood sample should be sent for DNA studies, and family studies may be required. Equivocal results (sweat chloride 40 - 60 mmol/L) should have a further sweat test performed, and if this is also equivocal DNA studies should be considered. Equivocal results may be seen in unaffected children, or those with atypical cystic fibrosis - i.e. caused by gene defects other than homogenous ΔF508 mutation. If the results do not seem appropriate for the clinical condition of the patient, please discuss with a Clinical Biochemist.
References	Guidelines for the Performance of the Sweat Test for the Investigation of Cystic Fibrosis in the UK, An Evidence Based Guideline, Second Version, March 2014.
Test code	SWCL
Lab Handling	Sample processed within the lab. Sample stored at 2 - 8°C