
Lab Dept: Hematology

Test Name: OSMOTIC FRAGILITY

General Information

Lab Order Codes: OSFM

Synonyms: RBC Fragility; Erythrocyte Fragility; Incubated Osmotic Fragility

CPT Codes: 85557 – Osmotic fragility, RBC; incubated

Test Includes: Percent hemolysis of red blood cells for unincubated specimens placed in 0.50 g/dL concentration of NaCl and incubated specimens (37°C for 24 hours) when tested in NaCl concentrations of 0.60, 0.65 and 0.75 g/dL.

Logistics

Test Indications: Useful for suspected hereditary spherocytic hemolytic anemia.

Lab Testing Sections: Hematology - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: 9064/FRAG)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 2 – 5 days (performed Monday – Saturday, reported Monday - Friday)

Special Instructions: Indicate patient's date of birth on request form. Specimen must arrive at reference lab within 96 hours of draw.

Specimen

Specimen Type: Whole blood

Container: Lavender top (EDTA) tube

Draw Volume: 5 mL (Minimum: 2 mL) blood

Processed Volume: Same as Draw Volume

Collection: A trauma-free blood collection required

Special Processing: Send 5 mL EDTA blood refrigerated. Specimen should remain in original collection container. **Do not** transfer blood to another tube. **Do not** centrifuge.

Also, send a 5 mL fresh EDTA whole blood specimen from a normal, untreated person at the same time, refrigerate and Label as **normal control**, indicate sex of the person from whom the control was drawn on the specimen label.

Do Not freeze.

Patient Preparation: None

Sample Rejection: Clotted; frozen; mislabeled or unlabeled specimen; gross hemolysis

Interpretive

Reference Range:

0.50 g/dL NaCl (unincubated)	Males: 0.0 – 47.8% hemolysis
	Females: 0.0 – 31.1% hemolysis
0.60 g/dL NaCl (incubated)	Males: 18.7 – 67.4% hemolysis
	Females: 10.9 – 65.5% hemolysis
0.65 g/dL NaCl (incubated)	Males: 4.4 – 36.6% hemolysis
	Females: 0.2 – 39.3% hemolysis
0.75 g/dL NaCl (incubated)	Males: 0.8 – 9.1% hemolysis
	Females: 0.0 – 10.9% hemolysis
Interpretation: Increased lysis in 3 or more concentrations of sodium chloride indicates red cell fragility.	

Critical Values: None

Limitations: Infrequently, other hemolytic disorders may be associated with positive results, as in patients with congenital nonspherocytic hemolytic anemia due to G-6-PD or pyruvate kinase deficiency.

Patients with an immunohemolytic anemia, or who have recently received a blood transfusion may also have increased RBC lysis.

Methodology: Osmotic Lysis

Contraindications: Recent transfusion

References:

[Mayo Medical Laboratory Web Page](#) August 2013

Updates:

11/6/2006: Updated reference ranges.