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**Lab Dept:** Chemistry

**Test Name:** OXYGEN DISSOCIATION P50, RBC

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***General Information***

**Lab Order Codes:** O2D

**Synonyms:** Oxygen Dissociation, p50, Erythrocytes; Hemoglobin Oxygen Affinity; Oxyhemoglobin Dissociation; O2 Affinity

**CPT Codes:** 82820 – Hemoglobin - oxygen affinity

**Test Includes:** Oxygen dissociation, p50, erythrocytes reported in mm Hg.

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***Logistics***

**Test Indications:** Useful for identifying hemoglobin variants associated with polycythemias or cyanotic and hypoxic disorders.

**Lab Testing Sections:** Chemistry - Sendouts

**Referred to:** Mayo Medical Laboratories (Mayo Test: P50B)

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

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 1 - 3 days, daily

**Special Instructions:** Specimen must arrive at Mayo within 72 hours of collection. See [Collection](#) below. Obtain special tube(s) from the laboratory.

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***Specimen***

**Specimen Type:** Whole blood

**Container:** Green top (Na Heparin) tube, available from lab

**Draw Volume:** 5 mL (Minimum:1 mL) blood for both patient and control specimens

**Processed Volume:** Same as Draw Volume

<b>Collection:</b>	Routine venipuncture  <b>Note:</b> Lab <b>must also send</b> a control specimen from a normal, unrelated person who is a non-smoker. Refrigerate. Label clearly on outermost label " <b>Normal Control</b> ".
<b>Special Processing:</b>	Lab Staff: * <b>Do Not</b> centrifuge, refrigerate immediately *Send both patient and control samples in their original collection container. <b>Do Not</b> transfer to other tubes. *Make sure each are labeled appropriately distinguishing the patient and the control samples. *Rubberband the patient and control samples together. *Store and ship at refrigerated temperatures. * <b>Must</b> arrive at Mayo within 72 hours of collection. Specimens <b>must not</b> be frozen. Forward promptly.
<b>Patient Preparation:</b>	None
<b>Sample Rejection:</b>	Frozen specimens; specimens other than Na heparinized whole blood; mislabeled or unlabeled specimens

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### ***Interpretive***

**Reference Range:** Patients:  $\geq 12$  months: 24 - 30 mm Hg  
  
Note: Reference values have not been established for patients who are  $< 12$  months of age.

**Critical Values:** N/A

**Limitations:**

- To ensure valid results, the specimen must not be  $> 72$  hours old.
- The shipping control specimen is required to adequately interpret these cases, as temperature extremes can impact the integrity of the specimen and give falsely altered results.

**Resulting cautions:**

- P50 results will be reported if the shipping control is normal. The shipping control is necessary for ensuring valid results. If the specimen is compromised, such as during transport, this often results in an abnormal result in both the control and specimen.
- If the shipped control is abnormal and the p50 results are within normal range, the results will be reported; however, a comment will be added to the report indicating that the shipping control was not entirely satisfactory.
- The test will be cancelled if the patient specimen and shipping control are both abnormal.

**Methodology:** Hemox-Analyzer Measures and Plots O<sub>2</sub> Saturation

**References:**

[Mayo Medical Laboratories](#) December 2017