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**Lab Dept:** Chemistry

**Test Name:** LACTATE

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***General Information***

**Lab Order Codes:** LACT

**Synonyms:** Lactic acid

**CPT Codes:** 83605 – Lactate (lactic acid)

**Test Includes:** Lactate concentration reported mg/dL.

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***Logistics***

**Test Indications:** Lactate is produced from pyruvate as an end product of glucose metabolism that is activated when a deficiency of oxygen leads to an accumulation of excess NADH. Lactate testing is used for the evaluation of metabolic acidosis, diabetic ketoacidosis and dehydration.

**Lab Testing Sections:** Chemistry

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

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 30 minutes

**Special Instructions:** It is recommended that the patient be fasting and rest for 2 hours prior to specimen draw. [See Collection](#)

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***Specimen***

**Specimen Type:** Whole blood, [See Collection](#)

**Container:** Arterial/Venous draws: Sims Portex® syringe (PB151) or Smooth-E syringe (956-463) are the preferred syringes for analysis

Capillary draws: Radiometer Clinitubes™ (least desirable specimen)

**Draw Volume:** 0.4 mL blood (arterial/venous), MIN: 0.14 mL (capillary), STP: 0.2 mL (capillary)

**Processed Volume:** 0.2 mL (arterial/venous) whole blood

<b>Collection:</b>	Arterial punctures are <b>preferred</b> . Venous samples drawn without a tourniquet will be accepted. <b>Immediately</b> remove all air from the syringe, cap tightly, mix by gentle inversion, and place in an <b>ice slurry</b> . Deliver specimens immediately to the lab for analysis.  Capillary samples can be used only when other collection methods are not available. Collect anaerobically, mix gently 20 times with a magnet, cap tightly, and place in an <b>ice slurry</b> . Deliver immediately to the laboratory for analysis.  NOTE: Neonatal samples may be mixed only by gentle inversion due to red cell fragility.
<b>Special Processing:</b>	Lab Staff: Analyze all lactate samples <b>immediately</b> . <b>Do Not</b> centrifuge. Analysis must occur within 15 minutes of collection. Specimen must be delivered to testing station on ice in original collection container. Lab staff responsible for testing should be notified immediately.
<b>Patient Preparation:</b>	None
<b>Sample Rejection:</b>	Mislabeled or unlabeled specimen; clotted specimen; delay in specimen testing more than 30 minutes after collection

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### ***Interpretive***

<b>Reference Range:</b>	4.5 - 19.8 mg/dL
<b>Critical Values:</b>	>45 mg/dL
<b>Limitations:</b>	Venous specimens drawn with a tourniquet, or capillary specimens may lead to falsely elevated Lactate levels.
<b>Methodology:</b>	Ion Selective Electrode (ISE)
<b>References:</b>	ABL800 FLEX Operator's Manual from software version 6.14, Publication: 201410, Edition: E, Code number: 994-909, <a href="http://www.radiometer.com">www.radiometer.com</a>  ABL90 FLEX Operator's Manual from software version 3.1xx, Publication 201403, Edition H, Code 995-656  Jacobs & DeMott Laboratory Test Handbook (2001) Lexi-Comp, Inc, Hudson, OH, 5th Edition  Tietz Textbook of Clinical Chemistry (1999) 3rd Edition, WB Saunders Company
<b>Updates:</b>	2/17/2005: Critical value previously listed as >40 mEq/L. 5/26/2015: Update to specimen storage. Must be transported on ice, etc.