Overview

Useful For
Investigation of a variety of diseases involving the heart, liver, muscle, kidney, lung, and blood
Monitoring changes in tumor burden after chemotherapy, although, lactate dehydrogenase elevations in patients with cancer are too erratic to be of use in the diagnosis of cancer

Testing Algorithm
See Laboratory Screening Tests for Suspected Multiple Myeloma in Special Instructions.

Special Instructions
- Laboratory Screening Tests for Suspected Multiple Myeloma

Method Name
Photometric Rate

NY State Available
Yes

Specimen

Specimen Type
Serum

Necessary Information
Patient's age is required.

Specimen Required
Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Specimen Volume: 1 mL

Collection Instructions:
1. Serum gel tubes should be centrifuged within 2 hours of collection.
2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Reject Due To
Gross hemolysis  Reject

Specimen Minimum Volume
0.25 mL

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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Test Definition: LD
Lactate Dehydrogenase (LD), S

<table>
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<tr>
<th>Serum</th>
<th>Ambient (preferred)</th>
<th>7 days</th>
<th>Frozen</th>
<th>30 days</th>
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Clinical & Interpretive

Clinical Information
Lactate dehydrogenase (LD) activity is present in all cells of the body with highest concentrations in heart, liver, muscle, kidney, lung, and erythrocytes. Serum LD is elevated in a number of clinical conditions.

Reference Values
1-30 days: 135-750 U/L
31 days-11 months: 180-435 U/L
1-3 years: 160-210 U/L
4-6 years: 145-345 U/L
7-9 years: 140-290 U/L
10-12 years: 120-293 U/L
13-15 years: 110-283 U/L
16-17 years: 105-233 U/L
> or =18 years: 122-222 U/L

Interpretation
Marked elevations in lactate dehydrogenase (LD) activity can be observed in megaloblastic anemia, untreated pernicious anemia, Hodgkin disease, abdominal and lung cancers, severe shock, and hypoxia.
Moderate to slight increases in LD levels are seen in myocardial infarction (MI), pulmonary infarction, pulmonary embolism, leukemia, hemolytic anemia, infectious mononucleosis, progressive muscular dystrophy (especially in the early and middle stages of the disease), liver disease, and renal disease.
In liver disease, elevations of LD are not as great as the increases in aspartate amino transferase (AST) and alanine aminotransferase (ALT).
Increased levels of the enzyme are found in about one-third of patients with renal disease, especially those with tubular necrosis or pyelonephritis. However, these elevations do not correlate well with proteinuria or other parameters of renal disease.
On occasion a raised LD level may be the only evidence to suggest the presence of a hidden pulmonary embolus.

Cautions
Red blood cells contain much more lactate dehydrogenase (LD) than serum. A hemolyzed specimen is not acceptable. LD activity is 1 of the most sensitive indicators of in vitro hemolysis. Causes can include transportation via pneumatic tube, vigorous mixing, or traumatic venipuncture.
While increases in serum LD also are seen following a myocardial infarction, the test has been replaced by the determination of troponin.

Clinical Reference
**Performance**

**Method Description**
Lactate and NAD+, in the presence of lactate dehydrogenase (LD), are converted to pyruvate and NADH. The rate at which NADH is formed is determined by an increase in absorbance and is directly proportional to enzyme activity. (Package insert: Roche LDH reagent, Indianapolis, IN, November 1999)

**PDF Report**
No

**Specimen Retention Time**
1 week

**Performing Laboratory Location**
Rochester

**Fees & Codes**

**Test Classification**
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

**CPT Code Information**
83615