

## 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.

### Specimen Minimum Volume

0.25 mL

### Reject Due To

Gross hemolysis	Reject
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## Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Ambient (preferred)	7 days	
	Frozen	30 days	
	Refrigerated	48 hours	

## Clinical and 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: 160-370 U/L

4-6 years: 145-345 U/L

7-9 years: 143-290 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

Tietz Textbook of Clinical Chemistry. Fourth edition. Edited by CA Burtis, ER Ashwood, DE Bruns. Philadelphia, WB Saunders Company, 2006, pp 601-603

## Performance

### Method Description

Lactate and NAD<sup>+</sup>, 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

### Day(s) Performed

Monday through Sunday

### Report Available

Same day/1 to 3 days

### Specimen Retention Time

1 week

### Performing Laboratory Location

Rochester

## Fees and Codes

### Fees

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact [Customer Service](#).

### 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



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**LOINC® Information**

Test ID	Test Order Name	Order LOINC Value
LD	Lactate Dehydrogenase (LD), S	14804-9

Result ID	Test Result Name	Result LOINC Value
LD	Lactate Dehydrogenase (LD), S	14804-9