MAYO CLINIC LABORATORIES

Test Definition: TRIG1

Triglycerides, Serum

Overview

Useful For
Managing atherosclerotic cardiovascular disease risk

Method Name
Colorimetric

NY State Available
Yes

Specimen

Specimen Type
Serum

Specimen Required
Collection Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Specimen Volume: 0.5 mL
Collection Container/Tube: Plastic vial
Collection Instructions:
1. Serum gel tubes should be centrifuged within 2 hours of collection.
2. Red-top tubes should be centrifuged and the serum aliquoted into a plastic vial within 2 hours of collection.

Forms
If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:
-Kidney Transplant Test Request
-Cardiovascular Test Request Form (T724)

Specimen Minimum Volume
0.25 mL

Reject Due To

Gross hemolysis	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	7 days	
	Frozen	90 days	

Clinical & Interpretive

Clinical Information

Triglycerides are oily lipids carried in the blood by lipoproteins. Triglycerides are primarily carried by very low-density lipoprotein (VLDL), chylomicrons, and remnant lipoproteins. Recent evidence supports triglycerides as an independent risk factor for atherosclerotic cardiovascular disease (ASCVD). Several conditions are associated with increased plasma triglycerides, including obesity, pregnancy, physical inactivity, excess alcohol intake, kidney disease, and diabetes. Elevated triglycerides are often associated with reduced high-density lipoprotein cholesterol, insulin resistance, hypertension, fatty liver disease, and increased waist circumference. In addition to cardiovascular risk, elevated triglycerides confer a risk for acute pancreatitis.

Reference Values

The National Lipid Association and the National Cholesterol Education Program have set the following guidelines for lipids in a context of cardiovascular risk for adults 18 years old and older:
TRIGLYCERIDES
Normal: <150 mg/dL
Borderline High: 150-199 mg/dL
High: 200-499 mg/dL
Very High: > or =500 mg/dL

The Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents has set the following guidelines for lipids in a context of cardiovascular risk for children 2 to 17 years old:
TRIGLYCERIDES
2-9 years:
Acceptable: <75 mg/dL
Borderline High: 75-99 mg/dL
High: > or =100 mg/dL
10-17 years:
Acceptable: <90 mg/dL
Borderline High: 90-129 mg/dL
High: > or =130 mg/dL
Reference values have not been established for patients who are younger than 24 months of age.
For SI unit Reference Values, see https://www.mayocliniclabs.com/order-tests/si-unit-conversion.html

Interpretation

Maintaining desirable concentrations of lipids lowers atherosclerotic cardiovascular disease (ASCVD) risk. Establishing appropriate treatment strategies and lipid goals require that blood lipid values be considered in context with other risk factors including, age, sex, smoking status, and medical history of hypertension, diabetes, and cardiovascular disease.

Triglycerides results of 500 mg/dL and above are severely elevated, increasing the risk of pancreatitis.

Triglycerides can be lowered by increasing physical activity, low-fat diet, weight loss, and/or triglyceride lowering pharmaceuticals.

Cautions

Result can be falsely decreased in patients with elevated levels of N-acetyl-p-benzoquinone imine (NAPQI, a metabolite of acetaminophen), N-acetylcysteine (NAC), and metamizole.

Consuming alcohol or fatty foods 24 hours prior to specimen collection can increase triglycerides.

Eating a meal 12 hours prior to specimen collection can increase triglycerides.

Consider repeat measurement of lipids prior to initiating or changing lipid therapy.

Clinical Reference

1. Grundy SM, Stone NJ, Bailey AL, et al: 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Circulation. 2019 Jun 18;139(25):e1082-e1143
2. Jacobson TA, Ito MK, Maki KC, et al: National Lipid Association recommendations for patient-centered management of dyslipidemia: Part 1-executive summary. J Clin Lipidol. 2014;8(5):473-488. doi: 10.1016/j.jacl.2014.07.007
3. Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents; National Heart, Lung, and Blood Institute. Expert panel on integrated guidelines for cardiovascular health and risk reduction in children and adolescents: Summary report. Pediatrics. 2011 Dec;128 Suppl 5(Suppl 5):S213-S256. doi: 10.1542/peds.2009-2107C

Performance

Method Description

This test uses a lipoprotein lipase from microorganisms for the rapid and complete hydrolysis of triglycerides to glycerol followed by oxidation to dihydroxyacetone phosphate and hydrogen peroxide. The hydrogen peroxide produced then reacts with 4-aminophenazone and 4-chlorophenol under the catalytic action of peroxidase to form a red dyestuff (Trinder endpoint reaction). The color intensity of the red dyestuff formed is directly proportional to the triglyceride concentration and can be measured photometrically.(Package insert: Triglycerides. Roche Diagnostics; 05/2024)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

1 day

Specimen Retention Time

1 week

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

Fees & 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 account representative. 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

84478

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
TRIG1	Triglycerides, S	2571-8

Result ID	Test Result Name	Result LOINC® Value
TRIG	Triglycerides, S	2571-8
INTC1	Fasting (8 HR or more)	87527-8