

Triglycerides

WHAT ARE TRIGLYCERIDES?

Triglycerides are the main form of fat in the body. They are produced from the digestion and breakdown of fats in foods, as well as from the breakdown of other energy sources, such as carbohydrates. Triglycerides can be used as an immediate energy source or be stored for later use.

TRIGLYCERIDE REFERENCE RANGES

Levels below 150 mg/dL are considered desirable for adults. Triglyceride levels of 150 - 199 mg/dL are borderline high, while levels of 200 mg/dL and above are considered unhealthy (1).

TESTING RECOMMENDATIONS

The Adult Treatment Panel of the National Cholesterol Education Program (NCEP) recommends that all adults 20 years of age and over should have a fasting lipoprotein profile (total cholesterol, LDL cholesterol, HDL cholesterol, and triglyceride) once every five years to screen for coronary heart disease risk (2).

ELEVATED TRIGLYCERIDES

Elevated triglycerides are associated with increased risk of cardiovascular disease (3), type 2 diabetes (4), metabolic syndrome (5), hypothyroidism (6), and pancreatitis (7). Various factors can contribute to elevated triglycerides, including being overweight, physically inactive, excess alcohol consumption, poor diet, specific drugs (e.g. corticosteroids), smoking, and inherited genetic variations (8).

LOWERING TRIGLYCERIDES

A combination of losing weight, diet, and exercise may be beneficial for reducing high triglycerides. Specific changes include limiting carbohydrate, alcohol, and fat intake, and choosing healthier unsaturated fats instead of saturated and trans fats. Abstaining from smoking and exercising for at least 30 minutes each day are also beneficial (9).

TEST PROCEDURE

Correct specimen collection and handling is required for optimal assay performance. Maintenance of a stable diet for 2 weeks and fasting for 12 – 14 hours prior to specimen collection is required for accurate results

This test requires a blood sample from a finger prick. All supplies for sample collection are provided in this kit. First wash and dry hands. Warm hands aid in blood collection. Clean the finger prick site with the alcohol swab and allow to air dry. Use the provided lancet to puncture the skin in one quick, continuous and deliberate stroke. Wipe away the first drop of blood (as it may be contaminated with tissue fluid or skin debris). Massage finger to increase blood flow at the puncture site and hold in a position that gravity facilitates the collection of blood on the fingertip. Transfer the blood to the blood collection card or blood collection tube (microtainer).

Avoid squeezing or 'milking' the finger excessively. If blood flow stops, perform a second skin puncture on another finger, if more blood is required.

Dispose of all sharps safely and return sample to the laboratory in the provided prepaid return shipping envelope.

Upon receipt at the laboratory, the blood sample is analyzed by the fully automated Alinity c Triglyceride assay on the Alinity ci series analyzer. This assay determines triglyceride levels using the glycerol phosphate

oxidase methodology, where the concentration of triglycerides in the blood sample is proportional to the absorbance of a specific dye produced in the final step of a complex multi-step analysis.

TEST INTERPRETATION

This assay will provide an accurate triglyceride level for the tested blood specimen. Normal triglyceride levels in serum are < 150 mg/dL, borderline high levels are 150 – 199 g/dL, high levels are 200 – 499 mg/dL, and very high levels are ≥ 500 mg/dL. These values were obtained from the Alinity c Triglyceride package insert (10), which follows recommendations from the National Cholesterol Education Program (NCEP) Adult Treatment Panel III Report (1).

DISCLAIMERS/LIMITATIONS

These results should be interpreted in conjunction with other laboratory and clinical information.

Additional testing is recommended if triglyceride levels are inconsistent with clinical evidence.

Correct specimen collection and handling is required for optimal assay performance.

Interferences from medication or endogenous substances may affect results.

Females taking estrogens or high estrogen oral contraceptives may have increased triglyceride levels.

Triglycerides may be elevated during pregnancy.

REFERENCES

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