# Clinical Chemistry

## lipid profile

# lipid profile

**Lipid profile** or *lipid panel* is a panel of blood tests that serves as an initial screening tool for abnormalities in lipids, such as cholesterol and triglyceridesThe results of this test can identify certain genetic diseases and can determine approximate risks for cardiovascular disease, certain forms of pancreatitis, and other diseases. Lipid panels are ordered as part of a physical exam, along with other panels such as the complete blood count (CBC) and basic metabolic panel (BMP)

The lipid profile test is a combination of tests conducted together to check for any risks of coronary heart disease, or as a preventive measure to check any risks depending on factors like eating habits, diet, stress, exercise and life-style related. A typical lipid profile includes the following tests:

- High density lipoprotein cholesterol (HDL-C) - " good cholesterol"
- Low density lipoprotein cholesterol (LDL-C) -" bad cholesterol"
- LDL/HDL Ratio (calculated values)
- Triglycerides
- Very low density lipoprotein cholesterol (VLDL-C)

sing these values, a laboratory may also calculate:

- Very low-density lipoprotein (VLDL)
- Cholesterol:HDL ratio

The lipid profile tests are of 7 types:

- Total lipids
- Serum total cholesterol
- serum HDL cholesterol
- Total cholesterol/HDL cholesterol ratio
- Serum triglycerides
- Serum Phospholipids
- Electrophoretic fractionation to determination percentage of
    - (a) Chylomicrons
    - (b) LDL
    - (c) VLDL

- (d) HDL

total cholesterol

Total cholesterol/HDL Ratio (calculated values)

Lipids are the fats and fatty substances that are stored in your blood and tissues and are used by the body as a source of energy. While lipids help keep the body functioning normally, lipid disorders, like high cholesterol, might lead to life-threatening conditions like heart attacks, strokes, or coronary artery disease.

A lipid profile test or lipid panel is performed to measure:

- Total cholesterol level
- hdl cholesterol (good cholesterol)
- LDL cholesterol (bad cholesterol)
- Triglyceride levels

Recommendations for cholesterol testing come from the Adult Treatment Panel (ATP) III guidelines, and are based on many large clinical studies, such as the Framingham Heart Study.

For healthy adults with no cardiovascular risk factors, the ATP III guidelines recommend screening once every five years.[1] A lipid profile may also be ordered at regular intervals to evaluate the success of lipid-lowering drugs such as statins.

In the pediatric and adolescent population, lipid testing is not routinely performed. However, the American Academy of Pediatrics and the National Heart, Lung, and Blood Institute (NHLBI) recommend that children aged 9–11 be screened once for severe cholesterol abnormalities. This screening can be valuable to detect genetic diseases such as familial hypercholesterolemia that can be lethal if not treated early.

Traditionally, most laboratories have required patients to fast for 9–12 hours before screening. However, studies have questioned the utility of fasting before lipid panels, and some diagnostic labs routinely accept non-fasting samples.

Typically the laboratory measures only three quantities: total cholesterol; HDL; Triglycerides. From these three data LDL may be calculated. According to Friedewald's equation:

- LDL = Total cholesterol - HDL - Triglycerides/5

Other calculations of LDL from those same three data have been proposed which yield some significantly different results.

VLDL may be defined as the total cholesterol that is neither HDL nor LDL. Then Friedewald's equation mentioned above yields:

- VLDL = Triglycerides/5

The alternative calculations mentioned above may yield significantly different values for VLDL.

# When do you expect results?

24 to 36 Hours

# why get tested?

The lipid profile test is needed to check for dyslipidaemia symptoms, it is also carried out to check adults and children who are risk prone to high blood cholesterol value and triglycerides. This happens because of development of diabetes, high blood pressure or a heart disease. This lipid profile test is also conducted as a follow up to evalute the treatment undergone and diet control programme.

Your doctor might ask you to get a lipid profile done as a regular part of a health exam. The results from this test might be used to prevent, monitor, or diagnose various medical conditions. It may also be performed to evaluate the success of various treatments, or the effectiveness of drug therapies or lipid-lowering lifestyle changes.

In adults, it is recommended that even people with no risk factors for heart disease should get a fasting lipid profile performed every four to six years. If other risk factors are present, it is recommended that the test be performed more frequently. One of the major risk factors for a number of diseases and medical conditions is a high level of low-density lipoprotein (LDL) cholesterol.

Apart from this, other risk factors include:

- Smoking

- Being overweight
- Unhealthy diet
- Being physically inactive or not getting enough exercise
- If you are a male of 45 years or more or a female who is 50-55 years or more
- If you are suffering from hypertension
- Having a family history of premature heart diseases
- Pre-existing heart diseases
- If you've had a heart attack
- Having diabetes or pre-diabetes

Having high HDL is considered as a "negative risk factor". Having high levels of HDL allow for the removal of one risk factor.With children and adolescents, it is recommended to get routine lipid profiles done.

# reason to take lipid profile test

Dyslipidaemia symptoms

- Headache, Jaw pain, toothache
- Difficulty in breathing
- Nausea, vomiting, and/or general epigastric (upper middle abdomen) discomfort
- Heartburn and / or indigestion
- Hypertension
- General malaise
- Pain, fullness, and/or squeezing sensation of the chest
- Sweating
- Arm pain (common in the left arm, but may be either arm)
- Upper back pain

# preparations needed for lipid profile test

Requires Fasting

Fasting samples needs to be collected after a minimum 12-14 hour overnight fasting status. Clear fluids like water can be consumed during this period. Do not consume beverages like tea, coffee and milk in the morning until specimen collection is completed.

In case of diabetics on oral or injectable hypoglycemic agents, please consult your physician about continuing with these medications prior to specimen collection."

You will be required to take a number of precautions before the test is performed. You should:-

- Not eat high-fat foods the night before
- Not drink alcohol, and
- Not exercise strenuously before your test

Your doctor might ask you to fast before the test, which means that you cannot eat or drink anything except water for 9 to 12 hours before the test.

You are usually allowed to take your medicines in the morning of the test, with water. While fasting is not always necessary, it might be recommended. Your doctor can inform you about any additional precautions that you need to take before the test. Make sure you inform them about:

Any health symptoms or problems you're having

- Family history of heart health
- Medications and supplements you're taking

## what does the test detect?

Cholesterol levels are measured in milligrams (mg) per deciliter (dL) of blood. The lipid profile normal values are as follows:

- LDL: 70 to 130 mg/dL (the lower, the better)
- HDL: more than 40 to 60 mg/dL (the higher, the better)
- Total cholesterol: less than 200 mg/dL (the lower, the better)
- Triglycerides: 10 to 150 mg/dL (the lower, the better)

If your results are outside the normal range, you might be at a higher risk of strokes, heart diseases, etc. On receiving abnormal results, our doctor may order some additional tests like a blood glucose test for diabetes, or a thyroid test to see if you have an underactive thyroid.

## sample required?

Specimen type: Serum (Blood Sample) ,

Specimen collection procedure : Venipuncture - Collection of blood from a vein, usually from the arm.

# lipid profile test cost

The lipid profile test prices vary from one pathological lab to another. However, the lipid profile test cost is usually not too exorbitant and is easily affordable. The lipid profile test cost offered at home also differ from traditional pathological labs.

# how can we help?

You can now easily get lipid profile test done at the comfort of your home. We offer the best in class at home healthcare services that includes a host of healthcare services right from doctor's consultation to nurse care to lab tests and other bunch of health services. We also offer great lipid profile test price.

So if you are looking for reliable and quality lipid profile test at home, then look no further and book with us to experience truly efficient healthcare service and friendly healthcare professionals.

# Understanding results of Lipid Profile

| Reference Range | Interpretation |
|---|---|
| Total cholesterol | less than 200 mg/dL (lower numbers are better) |
| HDL: "good cholesterol" | greater than 40 - 60 mg/dL (higher numbers are better) |
| VLDL | 2 - 38 mg/dL |
| LDL: "bad cholesterol" | 70 - 130 mg/dL (lower numbers are better) |
| Triglycerides | 10 - 150 mg/dL (lower numbers are better) |