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Original Article

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Evaluation of Lipid Profile in Second and Third Trimester of Pregnancy

Obstetrics and Gynaecology Section

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ABSTRACT

Introduction: There is a change in energy usage along with accumulation of fat during different trimesters of pregnancy. Lipid physiology and pathophysiology during pregnancy has not been studied extensively in large population-based cohorts.

Aim: To study the levels of total cholesterol (TC), low-density lipoprotein (LDL), high-density lipoprotein (HDL), and triglycerides (TGs) during pregnancy and their changes in second and third trimester.

Materials and Methods: This prospective study was conducted at Mahatma Gandhi Mission Hospital, Navi Mumbai, India by enrolling antenatal cases from October, 2012 to October 2014. The study was conducted on 200 pregnant local women after taking an informed consent from patients to get enrolled in the study.

Statistical analyses were performed using Statistical Package for Social Sciences (SPSS) version 17. All reported p-values are two-tailed, and confidence intervals were calculated at the 95% level.

Results: The mean cholesterol levels in second and third trimester were 214.6±18.16 mg/dl and 242.65±20.44 mg/dl respectively. The mean triglyceride levels in second and third trimester were 188.68±20.88 mg/dl and 216.78±20.09 mg/dl respectively. The mean HDL – Cholesterol levels in second and third trimester were 49.13±6.15 mg/dl and 43.07±4.34 mg/dl respectively. The mean LDL – Cholesterol levels in second and third trimester were 92.41±18.94 mg/dl and 137.82±13.45 mg/dl respectively. The mean VLDL – Cholesterol levels in second and third trimester were 28.22±7.66 mg/dl and 36.27±6.72 mg/dl respectively.

Conclusion: This study helps in understanding baseline lipid parameters in the second and third trimester among pregnant women in India. Total Cholesterol, Triglycerides, LDL-Cholesterol, VLDL-Cholesterol increased in both second and third trimester. The increase is more in third trimester, when compared to second. HDL-Cholesterol is decreased in third trimester when compared to second trimester.

Keywords: Serum cholesterol, Serum HDL-cholesterol, Serum LDL-cholesterol, Serum triglycerides, Serum VLDL-cholesterol

INTRODUCTION

Pregnancy is known to create profound changes in the body. It not only increases demand for metabolic fuels for the foetal growth and development of its associated structures, but also causes hormonal changes in the body which may lead to changes in lipid profile during different trimesters of the pregnancy [1].

It has been noted that in first trimester, the maternal metabolic environment gets modified due to rise in serum levels of oestrogen, and progesterone followed by pancreatic beta-cell hyperplasia leading to increase in insulin secretion [2].

Hyperinsulinaemia leads to a decline in serum glucose level by increasing the peripheral utilisation of glucose followed by its storage in tissues in form of glycogen. It also increases the storage of fat while a decline in lipolysis has been noted as well [3].

During middle and last trimester maternal fuel adjustments occurs which leads to the sparing of glucose (for the foetus) and an increased concentration of fatty acids in plasma leading to GDM and HTN respectively. Freinkel had described these changes as "accelerated starvation", and "facilitated anabolism" [4].

GDM and HTN can contribute to maternal and foetal risk of developing peri and postpartum complications [5,6]. The third component of the metabolic syndrome associated with insulin resistance, i.e., dyslipidaemia, is a well-known cardiovascular risk factor.

However, lipid profile during second and third trimester of pregnancy has not been studied extensively in large population-based cohorts in developing countries like India. Serum levels of total cholesterol, triglyceride, high density lipoprotein and low-density lipoprotein during second and third trimesters of pregnancy and their changes with gestational age are not well described.

AIM

Hence, the present study was undertaken to find out whether there is any significant variation in the lipid profile during the second and third trimesters of a normal pregnancy and to establish a relation of pregnancy with its effects on lipid profile.

MATERIALS AND METHODS

This was a prospective study conducted at Mahatma Gandhi Mission Hospital, Navi Mumbai, India. A total of 200 pregnant local women were enrolling who visited the hospital from October 2012 to 2014. Out of the 200 enrolled subjects, 10 of them developed gestational hypertension in late third trimester which was detected after 32nd week during followup. But these patients were also included. All the women signed informed consent form before being enrolled and were followed upto delivery at MGM Hospital. There were no drop outs neither any patient was lost to follow up.

A detailed history about present pregnancy, history of diabetes, renal disorders, thyroid disorders, family history regarding preeclampsia was taken before enrolling patients for the study. Subject's body mass index was calculated on enrolment and those who were obese were excluded from the study.

ORIGINAL ARTICLE

Accuracy of Non-Fasting Lipid Profile for the Assessment of Lipoprotein Coronary Risk

Safia Fatima, Aamir Ijaz, Tariq bin Sharif, Dilshad Ahmad Khan and Amer Siddique

ABSTRACT

Objective: To determine the diagnostic accuracy of non-fasting lipid profile in the diagnosis of hyperlipidemia, taking fasting lipid profile as gold standard, in adult population.
Study Design: Cross-sectional validation study.
Place and Duration of Study: Department of Chemical Pathology and Endocrinology, Armed Forces Institute of Pathology, Rawalpindi, from July to December 2014.
Methodology: One hundred seventy-five adult patients coming for fasting lipid profile were included; their non-fasting samples were taken on the next day. Patients on anti-cholesterol treatment and indoor patients were excluded. Total cholesterol (TC), high density lipoprotein-cholestrol (HDL-C), and triglycerides were measured by direct enzymatic colorimetric method by Modular p-8008. Low density lipoprotein-cholesterol (LDL-C) was calculated by Friedewald's formula, but when triglyceride was greater than 4.5 mmol/l, then LDL-C was measured directly by homogenous enzymatic colorimetric method. Non-HDL-C was calculated by simple equation, i.e. TC-HDL-C.
Results: Non-fasting lipid profile had 93% specificity , 51% sensitivity, 94% positive predictive value and 49% negative predictive value; and 65% accuracy with 7.28 positive likelihood ratio and 0.52 negative likelihood ratio. Non-fasting TC and non-HDL-C were significantly higher than fasting TC and non-HDL-C by mean difference of 0.2 mmol/l each with p=0.001 and p=0.004, respectively. Fasting and non fasting HDL-C are comparable to each other with mean difference of 0.01 mmol/l (p=0.745). Receiver operating curve (ROC) of non-fasting non-HDL-C showed 0.804 (95%CI (0.738-0.870), (p=0.000) area under the curve (AUC) indicating that it was a significant test for ruling out hyperlipidemia. Bland-Altmann plot showed a significant difference between non-fasting, non-HDL-C and fasting LDL-C and non-fasting, non-HDL-C -0.087540 with bias -0.00109; therefore, these cannot be alternative to each other.
Conclusion: Diagnostic accuracy of non-fasting lipid profile was found significantly higher than fasting lipid profile (p=0.004) for the assessment of lipoprotein coronary risk on the basis of non-HDL-C, which seemed to be significant test for ruling out hyperlipidemia.

Key Words: *Non-Fasting lipid profile. Lipoprotein coronary risk. High Density Lipoprotein Cholesterol (HDL-C). Non-HDL-C.*

INTRODUCTION

An acute myocardial infarction (MI) or acute coronary syndrome (ACS) is produced by lipoprotein coronary disease (LCD) in which the inner lining of coronary arteries which supply oxygenated blood supply to cardiac muscle, is deposited an atherosclerotic plaque that is actually a form of ischemic heart disease (IHD).[1] Dyslipidemia was considered the major risk factor of IHD, identified through various studies on conventional, non-traditional and novel risk factors of IHD.[1] Seven million deaths were reported within Asian and Middle-Eastern regions due to IHD in 2010; out of which, 38% were females while 46% were males.[2] There is 3.6 to 9.5% prevalence rate of IHD within Pakistan.[3]

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Worldwide, one-third of people suffering from IHD was attributable to elevated cholesterol globally; and due to this reason, 2.6 million deaths occurred worldwide in 2008.[4] IHD is the most important threat for LCD in Pakistan with the prevalence of hyper-cholesterolemia of 30.6%, hyper-triglyceridemia of 30.1%, and low HDL-cholesterol of 48.6%.[3]

The screening test for hyperlipidemia traditionally requires a lipid profile, which is considered as the initial routine test that comprises of total cholesterol (TC), triglycerides (TG), high density lipoprotein cholesterol (HDL-C), and low density lipoprotein-cholesterol (LDL-C). It is considered as an integral component of risk prediction of IHD.[5-7] There were two main issues with lipid profiles; patient's convenience and sample collection in fasting state.[8-10]

The Framingham Heart Study showed that fasting sample having high sensitivity of 95% was considered as gold standard lipid test.[11] ATP III guidelines and the Canadian Cardiovascular Society (CCS) guidelines endorsed non-HDL-C as a secondary target for treatment of hyperlipidemia because it is not altered by non-fasting condition; and is calculated as:

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Original Research Article

Cord lipid profile comparison of newborns of hypertensive mothers

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ABSTRACT

Background: To compare the cord blood lipid profile of 100 newborn babies born to hypertensive (Group A) and normotensive mothers (Group B).
Methods: Total 100 newborns were taken, 50 born to hypertensive mothers and 50 to normotensive mothers. 5ml umbilical venous blood was collected, after clamping the cord, from placental side of the cord and sent to laboratory for centrifugation. Serum was analysed for lipid profile by spectrophotometry by siemens dimensional RxI- Total Cholesterol, Triglycerides, High density lipoprotein and Low density lipoprotein and Very low density lipoprotein. Comparison of the cord blood lipid levels in both the groups was done.
Results: Cord blood lipid profile was deranged in newborns of hypertensive mothers with Cord TC, TG and LDL being statistically significantly higher than the mean reference value and 95th centile. Cord blood of term newborns of hypertensive mothers had Cord TC TG and LDL being statistically higher whereas only Cord TC being statistically higher in preterm neonates of hypertensive mothers.
Conclusions: Cord blood lipid levels were significantly deranged in newborns of hypertensive mothers. This helps us in providing the target population at risk and cord blood lipid profile of newborn serving as an indirect guide for lifestyle modifications and helping in early intervention and prevention of future coronary heart disease.

Keywords: Atherosclerosis, Cord lipid profile, Hypertensive mother, Newborn screening

INTRODUCTION

Atherosclerosis is a major risk factor for coronary artery disease and consequent morbidity and mortality in adult life. The fetal programming and the 'fetal origins hypothesis' emphasize the profound and sustained impact of factors related to the fetal health including atherosclerosis on the process of chronic diseases in adulthood.[1,2]

Given the understanding that fetal lipid profile will show deranged results either due to genetic programming or due to prepartum and/or intrapartum stress, and that this deranged lipid profile can continue into adult life, it is wise to recognize such children at risk in the antenatal and postnatal period itself and give special attention to them in terms of life style modification to prevent development of future complications; particularly cardiovascular complications.[3]

In PE there is placental dysfunction leading to maternal endothelial dysfunction.[4] This maternal endothelial dysfunction contributes to the oxidative stress, dyslipidaemia and the inflammatory process in maternal circulation which is reflected in fetal circulation. Cord blood would be a feasible and simple method for detecting cholesterol level at birth. Neonatal lipids level could serve as a guide to know the physiological levels of lipids required for maintaining the normal bodily mechanisms.[5]

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measured by separating VLDL from all other lipoproteins using the preparative ultracentrifuge and subtracting directly measured HDL-C from the latter. Most countries around the world still use this formula in the clinical practice, as well as the 12-hour fast for the lipid profile.

In the last decades, many articles have shown low correlation between LDL-C measured by the Friedewald formula and the LDL-C values obtained by other methods.[2,3] This is particularly true when analyzing plasma-containing high triglycerides (>200 mg/dL) and those with low LDL-C concentrations. Methods for the direct measurement of LDL-C were created using immunochemical methods that removed other lipoprotein species. Many laboratories adopted them in the practice, mainly when the triglycerides concentration is >400 mg/dL and the Friedewald formula is well documented to be inaccurate. These direct assays are available in the market, on the other hand, they show high variability between the different systems, which also harm the comparison between the Friedewald results.[4]

The need to have fasting plasma so that the triglyceride: cholesterol ratio is more faithfully representative of VLDL, not diluted by chylomicrons is another problem with the Friedewald calculation. The food pattern varies from country to country and has changed considerably in the last years. Nowadays, the nutritionists recommend a balance of nutrients and more frequent small meals.[5] Requiring 8 to 12 hours of fasting is a significant demand on patients. In the evaluation of the effect of fasting time on the lipid profile, there are many publications evidencing that the total cholesterol and the high-density lipoprotein cholesterol (HLD-C) are not significantly affected by the duration of fasting, only, the triglycerides (15%–20%) and, consequently, the LDL-C by the Friedewald formula.[6]

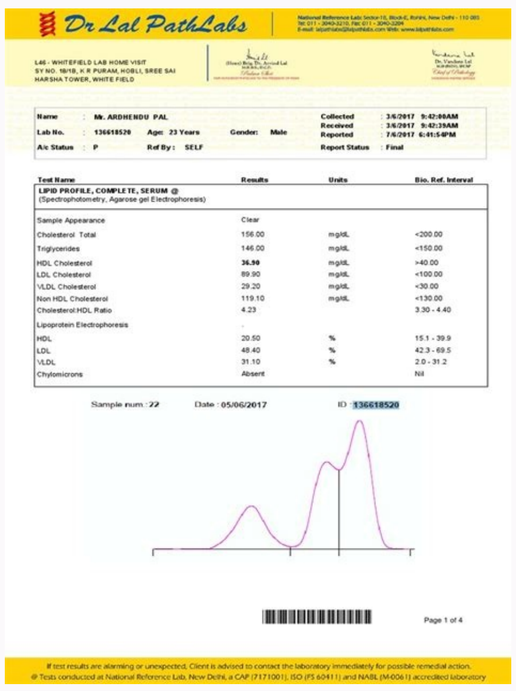
Elevated lipids, particularly LDL-C, provide one of the major causative risk factors for myocardial infarction, and the reduction in the levels of atherogenic lipoproteins is a proven way to decrease cardiovascular events.[7] The greater the reduction of these particles the greater the impact on prevention. Even isolated hypertriglyceridemia is associated with higher cardiovascular risk, thought to be explained in part by the presence of the circulating remnants of VLDL and larger numbers of smaller LDL particles in such patients.[8]

The measurement of postprandial triglycerides has been more strongly correlated with prevalence of vascular disease raising the question as to whether the triglyceride measurement in the fasting state may be misleading. Having no food for 12 hours may not reflect our habitual metabolic state? Denmark was the first country to allow the collection without mandatory fasting, and since April 2016, many in the scientific community adopted the same practice.[9] Why keep the Friedewald formula to produce the LDL-C calculation because it does not reflect the real LDL-C and the remnant concentrations. We may be underestimating the concentrations of the most atherogenic particles in our patients.

Lipid profile, the world needs to change

Dear Editor,

In 1972, William Friedewald published a formula that allowed estimation of the low-density lipoprotein cholesterol (LDL-C) concentration in human plasma by measuring the total plasma cholesterol and subtracting the separately measured high-density lipoprotein cholesterol (HDL-C) and an estimate of the cholesterol in very low–density lipoproteins (VLDL).[1] The latter was based on the average ratio of cholesterol to triglycerides in plasma to be 1 part by weight of cholesterol to every 5 parts of triglyceride. The assumption was that virtually all plasma triglyceride was contained in VLDL. Using data from some 400 patients, with a spectrum of lipid values, they demonstrated that this gave good agreement with LDL-C



Dr Lal PathLabs

L46 - WHITEFIELD LAB HOME VISIT
SY NO. 18/1B, K R PURAM, HOBLI, SREE SAI
HARSHA TOWER, WHITE FIELD

Name : Mr. ARDHENDU PAL
Lab No. : 136618520 Age: 23 Years Gender: Male
A/c Status : P Ref By : SELF

Collected : 3/6/2017 9:42:00AM
Received : 3/6/2017 9:42:35AM
Reported : 7/6/2017 6:41:54PM
Report Status : Final

Test Name	Results	Units	Bio. Ref. Interval
LIPID PROFILE, COMPLETE, SERUM @ (Spectrophotometry, Agarose gel Electrophoresis)			
Sample Appearance	Clear		
Cholesterol Total	156.00	mg/dL	<200.00
Triglycerides	146.00	mg/dL	<150.00
HDL Cholesterol	**36.90**	mg/dL	>40.00
LDL Cholesterol	89.90	mg/dL	<100.00
VLDL Cholesterol	29.20	mg/dL	<30.00
Non HDL Cholesterol	119.10	mg/dL	<130.00
Cholesterol:HDL Ratio	4.23		3.30 - 4.40
Lipoprotein Electrophoresis	-		
HDL	20.50	%	15.1 - 39.9
LDL	48.40	%	42.3 - 69.5
VLDL	31.10	%	2.0 - 31.2
Chylomicrons	Absent		Nil

Page 1 of 4

If test results are alarming or unexpected, Client is advised to contact the laboratory immediately for possible remedial action.
@ Tests conducted at National Reference Lab, New Delhi, a CAP (7171001), ISO (IS 6411) and NABL (M-0061) accredited laboratory

How to analyze lipid profile report. How to check lipid profile report. How to read lipid profile test. How do you read lipid profile results.

Medically Reviewed by James Beckerman, MD, FACC on July 16, 2020 Your health care provider may send you for cholesterol tests, either as a part of a standard check-up or because they suspect you may be at risk for developing heart disease. But do you know what the cholesterol test results actually mean? Read on to learn how to interpret the numbers.Cholesterol is a waxy, fat-like substance. Your liver makes all the cholesterol your body needs. But you take in more cholesterol from certain foods, such as those from animals. If you have too much cholesterol in your body, it can build up in the walls of your arteries (as "plaque") and eventually harden. This process, called atherosclerosis, actually narrows the arteries, making it harder for blood to travel through the vessels. Unfortunately, high cholesterol doesn't cause symptoms. In later stages of atherosclerosis, though, you may suffer angina -- severe chest pain from lack of blood flow to the heart. If an artery gets totally blocked, a heart attack results. A routine blood cholesterol test is a far better way of finding out what your cholesterol level is.In addition to measuring the total cholesterol in your blood, the standard cholesterol test (called a "lipid panel") measures three specific kinds of fat:Low-density lipoproteins (LDL). This is the "bad cholesterol," the main cause of plaque build-up, which increases your risk for heart disease. In general, the lower the number, the better. But LDL cholesterol is only one part of a larger equation that measures a person’s overall risk of having a heart attack or stroke. For years, guidelines focused on specific target numbers for individuals to achieve to lower their risk. The most recent guidelines focus on a person’s overall risk and, based on that risk, recommend a certain percentage of LDL reduction as one part of a strategy for preventing serious heart and vascular problems.High-density lipoproteins (HDL). This is the "good cholesterol." It transports bad cholesterol from the blood to the liver, where it is excreted by the body. Your HDL is another part of the equation that identifies the risk of a cardiovascular event. In general, the higher the number the better, although, as with LDL, the emphasis has shifted from specific target numbers to strategies for reducing the overall risk.Triglycerides. Another type of fat in the bloodstream, triglycerides are also linked to heart disease. They are stored in fat cells throughout the body.If you have a lipoprotein profile, it's important to look at all the numbers from the cholesterol test, not just the total cholesterol number. That's because LDL and HDL levels are two primary indicators of potential heart disease. Use the information below to interpret your results (with the help of your doctor, of course). This will help you get a better idea about your risk for heart disease.Total blood cholesterol level:High risk: 240 mg/dL and aboveBorderline high risk: 200-239 mg/dLDesirable: Less than 200 mg/dLLDL cholesterol levels:190 mg/dL and above represents a high risk for heart disease and is a strong indicator that the individual can benefit from intensive treatment, including lifestyle changes, diet, and statin therapy for reducing that risk.For LDL levels that are equal to or less than 189 mg/dL, the guidelines recommend strategies for lowering LDL by 30% to 50% depending on what other risk factors you have that can affect the health of your heart and blood vessels. HDL cholesterol:High risk: Less than 40 mg/dL for men and less than 50 mg/dL for womenTriglycerides:Very high risk: 500 mg/dL and aboveHigh risk: 200-499 mg/dLBorderline high risk: 150-199 mg/dLNormal: Less than 150 mg/dLIf your doctor recommends a "non-fasting" cholesterol test, the lab will look only at your total cholesterol (and sometimes your HDL) numbers. For that test, you merely need to show up at the lab and have some blood drawn. If your doctor suggests a "fasting" cholesterol test (also called a "lipid profile"), the lab will analyze your levels of LDL, HDL, triglycerides, and total cholesterol. For that test, you will need to fast nine to 12 hours before the blood test.Sometimes a doctor will ask you to do a non-fasting cholesterol test first. Depending on the results, they may then send you back for the more complete lipid profile.After reviewing your blood test, The doctor will also consider other risk factors you might have for heart disease, including:Your family historyAgeWeightRaceGenderDietBlood pressure and whether or not you’re being treated for high blood pressureActivity levelSmoking statusHistory of diabetesEvidence of elevated blood sugarsThen, your doctor will talk with you about your level of risk and the potential benefit to be derived by taking steps that include changes in your level of activity and diet as well as using medication to improve your cholesterol levels in order to reduce your overall risk.The National Cholesterol Education Program recommends adults age 20 years or older have a cholesterol test every five years. People who are at risk for heart attack or heart disease or who have a family history of either should be checked more often. © 2020 WebMD, LLC. All rights reserved. View privacy policy and trust info Top results Abnormally high cholesterol levels may not give you any symptoms, so a blood test is the best way to check whether you have high cholesterol. Read more on myDr website Why and when to get tested for cholesterol Read more on Pathology Tests Explained website Why and when to get tested for LDL cholesterol Read more on Pathology Tests Explained website Understanding what blood cholesterol is and how to control it can help you reduce your risk of heart disease and other serious conditions. Read more on Heart Foundation website Why and when to get tested for triglycerides Read more on Pathology Tests Explained website The lipid profile is a group of tests that are often requested together to determine risk of developing cardiovascular disease (heart disease, stroke and related diseases); and to monitor the treatment of conditions that can cause blockage of blood vessels (atherschlerosis, sometimes known as “hardening of the arteries”). Read more on Pathology Tests Explained website Why and when to get tested for HDL cholesterol Read more on Pathology Tests Explained website Why and when to get tested for direct LDL C Read more on Pathology Tests Explained website What are five pathology tests you're likely to have in your life Read more on Know Pathology Know Healthcare website Amniocentesis is a test that can be done in pregnancy. It is possible to tell from the test whether the fetus has certain birth defects. Read more on myDr website Cholesterol testing (or lipid testing) checks your levels of good and bad cholesterol to see if you need lifestyle changes or medicine to keep you healthy. Cholesterol is a type of fat your body makes. There are different types of cholesterol. You need a small amount of cholesterol to make hormones and cells, but too much of the wrong kind of cholesterol can be bad for you. High levels of the 'bad' cholesterol can clog up your blood vessels, which can lead to heart attacks or strokes. Read more about cholesterol. New Zealand guidelines for blood cholesterol levels are as follows.Your cholesterol levels give information about your overall health and your risk of cardiovascular (heart) disease, such as a heart attack or stroke. Talk to your healthcare provider about your results. They will look at your other cardiovascular disease risk factors, such as your age, gender, blood pressure and whether you smoke or have diabetes, before deciding what needs to happen next.Stopping smoking, eating a healthier diet and being more active lower your risk of heart disease. If your risk is high enough, you might need to take medicines to lower your cholesterol levels. High Cholesterol Lipid profile, lipoprotein profile What is this test? This group of tests measures the amount of cholesterol and other fats in your blood. Cholesterol and triglycerides are lipids, or fats. These fats are important for cell health, but they can be harmful when they build up in the blood. Sometimes they can lead to clogged, inflamed arteries, a condition call atherosclerosis. This may keep your heart from working normally if the arteries of your heart muscle are affected. This panel of tests helps predict your risk for heart disease and stroke. A lipid panel measures these fats: Total cholesterol LDL ("bad") cholesterol HDL ("good") cholesterol Triglycerides, another type of fat that causes hardening of the arteries Why do I need this test? You may need this panel of tests if you have a family history of heart disease or stroke. You may also have this test if your healthcare provider believes you're at risk for heart disease. These are risk factors: High blood pressure Diabetes or prediabetes Overweight or obesity Smoking Lack of exercise Diet of unhealthy foods Stress High total cholesterol If you are already being treated for heart disease, you may have this test to see whether treatment is working. What other tests might I have along with this test? Your healthcare provider may also order other tests to look at how well your heart is working. These tests may include: Electrocardiogram, or ECG, which tests your heart's electrical impulses to see if it is beating normally Stress test, in which you may have to exercise while being monitored by ECG Echocardiogram, which uses sound waves to make pictures of your heart Cardiac catheterization. For this test, a healthcare provider puts a tube into your blood vessels and injects dye. X-rays are then done to look for clogs in the arteries of the heart Your provider may also order tests for high blood pressure or blood sugar, or glucose. What do my test results mean? Test results may vary depending on your age, gender, health history, the method used for the test, and other things. Your test results may not mean you have a problem. Ask your healthcare provider what your test results mean for you. Results are given in milligrams per deciliter (mg/dL). Here are the ranges for total cholesterol in adults: Normal: Less than 200 mg/dL Borderline high: 200 to 239 mg/dL High: At or above 240 mg/dL These are the adult ranges for LDL cholesterol: Optimal: Less than 100 mg/dL (This is the goal for people with diabetes or heart disease.) Near optimal: 100 to 129 mg/dL Borderline high: 130 to 159 mg/dL High: 160 to 189 mg/dL Very high: 190 mg/dL and higher The above numbers are general guidelines, because actual goals depend on the number of risk factors you have for heart disease. Your HDL cholesterol levels should be above 40 mg/dL. This type of fat is actually good for you because it lowers your risk of heart disease. The higher the number, the lower your risk. Sixty mg/dL or above is considered the level to protect you against heart disease. High levels of triglycerides are linked with a higher heart disease risk. Here are the adult ranges: Normal: Less than 150 mg/dL Borderline high: 150 to 199 mg/dL High: 200 to 499 mg/dL Very high: Above 500 mg/dL Depending on your test results, your healthcare provider will decide whether you need lifestyle changes or medicines to lower your cholesterol. Your results and targets will vary according to your age and health. If you have high blood pressure or diabetes, you're at higher risk of having heart disease. You may have to take medicine to get your cholesterol and triglyceride levels even lower. How is this test done? The test is done with a blood sample, which is drawn through a needle from a vein in your arm. Does this test pose any risks? Having a blood test with a needle carries some risks. These include bleeding, infection, bruising, and feeling lightheaded. When the needle pricks your arm or hand, you may feel a slight sting or pain. Afterward, the site may be sore. What might affect my test results? Being sick or under stress, and taking certain medicines can affect your results. What you eat, how often you exercise, and whether you smoke can also affect your lipid profile. How do I prepare for the test? You may need to not eat or drink anything but water for 12 to 14 hours before this test. In addition, be sure your healthcare provider knows about all medicines, herbs, vitamins, and supplements you are taking. This includes medicines that don't need a prescription and any illicit drugs you may use.

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