

## **Family Medicine Clerkship - Plain Language Summary**

**Title:** ApoB and ApoA1: A new way to look at cholesterol!

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### **Plain Language Summary:**

There is a new, more accurate way of measuring your cholesterol. Instead of looking at both HDL and LDL cholesterol, the new standard will be looking at just one number called the ApoB/ApoA1 ratio. If you have high cholesterol or are on cholesterol medication, ask your doctor about this test.

Heart attacks are the leading cause of death in both men and women worldwide. They may seem to strike out of the blue to healthy people, but there is in fact an underlying cause. People who suffer heart attacks have a disease of the coronary arteries, the blood vessels that supply blood to the heart muscle. As we age, damage occurs slowly to the inside of these vessels. They develop inflammation, and the fats that circulate in our blood can build up in the walls of these vessels. These deposits of fat are called “plaques.” The vessels become hard and inflexible, and their inside gets smaller so that less blood can flow through. This process is called atherosclerosis. When atherosclerosis gets bad enough, the vessel can totally shut down or be easily blocked off. This means that the muscle of the heart does not get oxygen and can die. This is what happens in a heart attack.

The major risk factors for atherosclerosis are smoking, lack of exercise, a poor diet low in fruits and vegetables, alcohol use, high blood pressure, and obesity. The other risk factor is cholesterol. Cholesterol is a chemical that is used in your body to make the walls of all of your cells and many other things. We take some cholesterol in from the food we eat and some is produced in the liver. This means that both diet and the body’s natural programming affect the cholesterol level. You have probably heard about cholesterol from your doctor, as well as how you can reduce it by decreasing intake of eggs, red meat and animal fats and increasing fiber and vegetables. If you struggle with high cholesterol, it is likely that you already take a cholesterol lowering medication.

When discussing cholesterol, we talk about “good” (HDL) and “bad” (LDL) cholesterol. Bad LDL cholesterol is responsible for moving cholesterol from your gut and your liver to the rest of your body, including your veins and arteries. Good HDL cholesterol particles bring cholesterol back to the liver for disposal. We measure the amounts of LDL and HDL cholesterol to determine your risk for heart attack. In addition to looking at the amount of each kind of particle, we can also look at proteins within the particles. ApoB is associated with LDL (bad) and ApoA1 is associated with HDL (good). These proteins help hold the particles together. They are also the way that the body sorts out which particle is which. Dividing the number of ApoB by ApoA1 gives you your score. Although LDL and HDL have been used for years, it turns out that ApoB/ApoA1 gives a more accurate idea of your heart attack risk. This is also easier, since there is only one number to keep track of.

### **Additional Resources:**

[http://www.heart.org/HEARTORG/Conditions/Cholesterol/Cholesterol\\_UCM\\_001089\\_Su\\_bHomePage.jsp](http://www.heart.org/HEARTORG/Conditions/Cholesterol/Cholesterol_UCM_001089_Su_bHomePage.jsp)

<http://www.nhlbi.nih.gov/health/public/heart/chol/wyntk.pdf>

[http://www.heart.org/HEARTORG/Conditions/Cholesterol/PreventionTreatmentofHighCholesterol/Drug-Therapy-for-Cholesterol\\_UCM\\_305632\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/Cholesterol/PreventionTreatmentofHighCholesterol/Drug-Therapy-for-Cholesterol_UCM_305632_Article.jsp)

**Key Words:**

Cholesterol  
Heart attack  
Heart disease  
ApoB  
Lipids

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