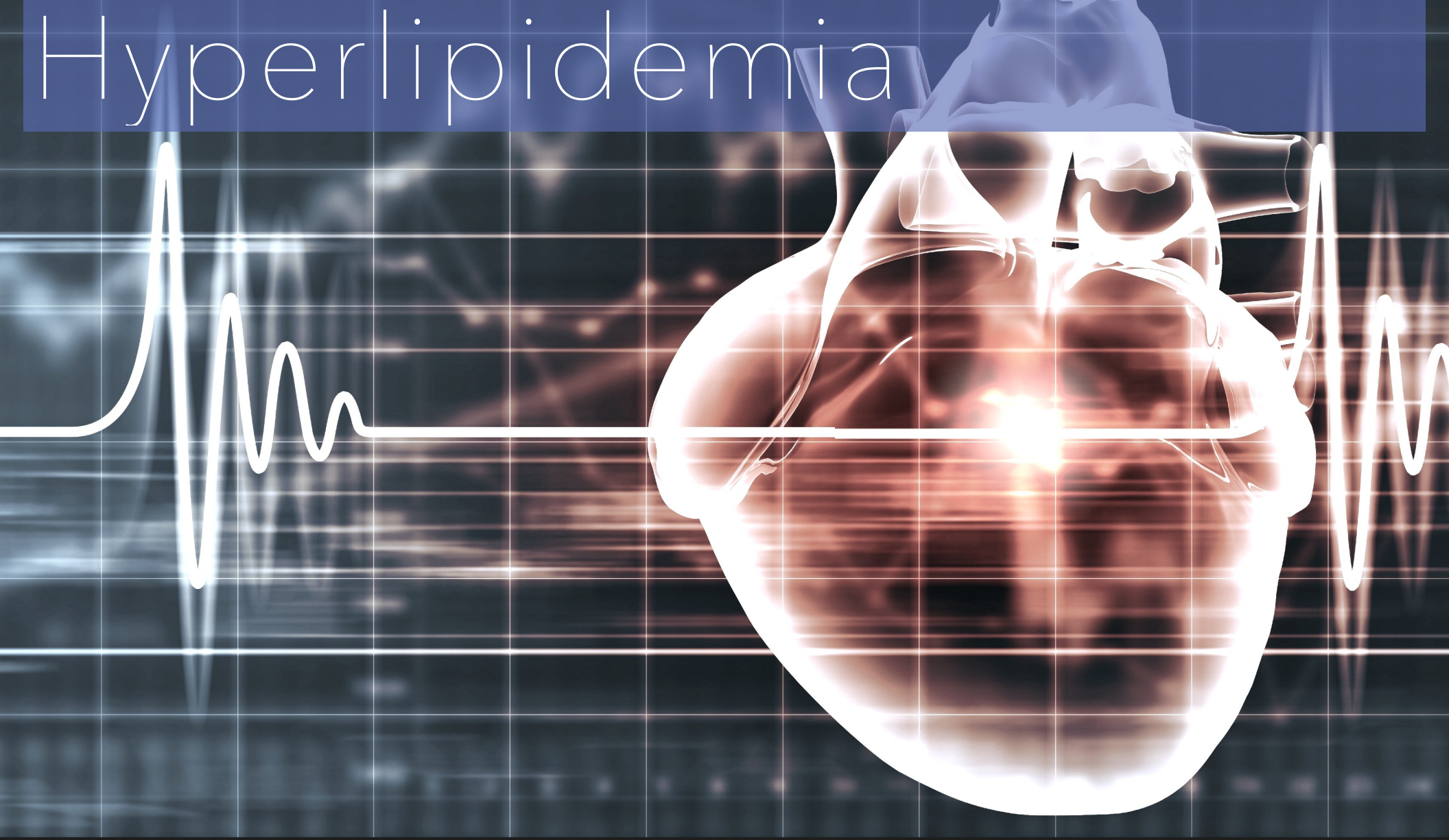
Hyperlipidemia



A Modern Approach to Elevated Cholesterol

CLOUD MEDICAL

One of the most common lab results for adults is an elevation of blood lipids.

This is usually not a reason to panic.

But it's an excellent opportunity to take stock of your overall health and implement a thoughtful and intelligent plan to move forward. Often patients and doctors alike spend a great deal of time and effort chasing lab numbers without taking the time to deeply process the implications. Elevated cholesterol is not usually an indication of a **disease state**, but rather a **risk factor** for a disease state.

Specifically, vascular disease, which can be completely silent for many years only to present suddenly with a heart attack or stroke.

The first question to ask is: what are the other risk factors for vascular disease, how many of them do I have, and how bad are they?

Before we get into all of that, it's important to recognize that elevated cholesterol (sometimes called hyperlipidemia or, more accurately, hypercholesterolemia) is ***not a particularly good risk factor*** for heart attacks and strokes. In fact approximately half of folks who end up having a heart attack actually have low or "normal" cholesterol, a fact which is astonishing to most people including medical professionals who have been taught to attack cholesterol numbers at all cost. In the conventional healthcare model, cholesterol is seen as the enemy, pure and simple, and there is of course a very convenient means of lowering it: various pharmacological drugs—the most common of which are the statins.

Before filling a prescription, especially a long-term medication, it's very important to gauge the likely **benefit** (of the desired outcome) with the likely **risk** (of possible side effects).

True Cost of Treatment

Statin medications are extraordinarily good at lowering cholesterol—just about anyone can drop 100 points or more after just a few weeks on a moderately dosed statin. However, for people who have not already suffered a heart attack, making the cholesterol numbers "look pretty" does not necessarily translate into ***outcomes***. And when you're interested in things like living a long life full of vitality (and not spending a lot of time in operating rooms getting a bypass) then ***optimal outcomes*** is what you want. So you want to know how likely it would be that lowering your cholesterol with a medication would translate to a decreased risk of actually suffering a heart attack or stroke. And those statistics are far less compelling for the widespread use of statin drugs.

The best way to evaluate the outcomes of a medication is to calculate the "Number Needed to Treat", or NNT. This takes all of the scientific data that is available from all of the various published research trials and computes a numerical ratio of how many

patients need to take a particular medication for a single person to benefit. The best NNT is 1. This would mean that anyone taking the drug will have the desired beneficial outcome. An NNT of 2 means that 2 people need to be given the drug for 1 of them to have the desired outcome (in other words, the treatment is effective 50% of the time), an NNT of 10 means that 10 people would need to be treated for 1 of them to benefit…and so on. The thing to really keep in mind with NNT's is what is the outcome you are looking at. For statins the NNT is very low (good) for lowering the cholesterol number. But if you wish to know the NNT of using statins to prevent a heart attack or a stroke you might be shocked to find that it is over 100. This means that 100 patients need to be treated with a statin for just one of them to be spared having a heart attack. In women without prior history of heart attack, it is about 150. Stated another way, the medication appears to have a less than 1% chance of helping a patient attain the stated goal (no heart attack). But on the flip side, you may say that a ***heart attack is worth doing everything on earth*** to prevent, even if the intervention has less that 1% chance of being effective. But in order to come up with the best personalized approach for you, it is also crucial to know the other side of the equation: NNH or "Number Needed to Harm".

Another way to say NNH is "the likelihood of experiencing significant sideffects". For statins there has been mounting concern about muscle problems (ranging from minor aches to more severe inflammation called myositis and even the rarest and most extreme form called rhabdomyolysis), insulin resistance leading to diabetes, liver inflammation, increased risk of dementia, and other possible adverse reactions.

Ok…back to heart disease and stroke. So what are the other risk factors? Let's organize them into two categories: basic and advanced.

BASIC RISK FACTORS

- Smoking
- High Levels of Unmanaged Stress
- Family History of Vascular Disease
- High Blood Pressure
- Obesity
- Sedentary Lifestyle
- High Inflammatory Marker (hsCRP)
- High Uric Acid
- High Cholesterol
- High Blood Sugar (Glucose & Hba1c)

ADVANCED RISK FACTORS

- Elevated small dense Lipoproteins
- Elevated serum homocysteine
- Elevated fasting serum insulin
- APOE and MTHFR gene variants
- High Arachidonic Acid : Omega3 ratio
- Low serum EPA & DHA
- Evidence of Carotid Plaque (on CIMT)
- Advanced Vascular Age (on CIMT)
- Evidence of Coronary Plaque (EBCT)
- Abnormal Electrocardiogram (EKG)

What is My Risk?

In order to calculate your likelihood of developing heart disease, you should start with an assessment of your basic risk factors. If you have more than three basic risk factors and are over the age of 35, we recommend obtaining additional testing. It is common for insurance companies to consider any advanced cardiovascular testing to be "unwarranted, unnecessary, and unreimbursible". Fortunately, unlike a nuclear stress test which exposes patients to enormous doses of radiation and costs thousands of dollars, most of these advanced diagnostics are safe and reasonably priced. Here is a list of several additional tests to consider:

CARDIOMETABOLIC PANEL

A battery of over 25 markers in your blood which analyze the density of LDL and lipoproteins, the ratios of inflammatory mediators and anti-inflammatory fatty acids such as DHA and EPA, as well as an in-depth assessment of how your body is handling glucose.

CAROTID SCAN (CIMT)

A dynamic ultrasound-based study of the great arteries in your neck which can determine not just whether you have plaque beginning to deposit in your arteries, but how much. As well as a calculation of your vascular age based upon arterial elasticity and compliance. This test can visualize both soft plaque as well as hard calcified plaque.

CORONARY ARTERY SCAN

A static, low radiation, CT imaging study of the vessels which provide blood flow to your heart muscle. This test provides highly accurate measurement of the amount of hard calcified plaque in your coronary arteries.

CARDIOGENOMIC TEST

An assessment of genetic markers specifically related to cardiovascular disease risk.

EKG

An assessment of the electrical conduction system of your heart.

What is My Optimal Plan?

These tests can be used to help you establish a more accurate cardiovascular risk profile from which a sophisticated risk reduction program can be developed and personalized for your individual needs. Whether or not using statin therapy ends up being the best approach for you, at Cloud Medial we are dedicated to helping you optimize your cardiovascular health from big picture view.

By the way, here is an interesting recent article which gives us a peek into the future on the topic of risk factors of cardiovascular disease…and just about everything else.