

Mixed Methods Research: A Guide to the Field (Mixed Methods Research Series)

Familial combined hyperlipidemia (mixed hyperlipidemia) is a genetic disorder causing high cholesterol, triglycerides, and other lipids in the blood. It can contribute to heart disease and early heart attacks. In Western countries, familial combined hyperlipidemia affects an estimated 1 percent of the population, making it the most common inherited lipid disorder. High lipid levels linked to mixed hyperlipidemia typically begin in the teenage years. Diabetes, hypothyroidism, obesity, and alcohol use disorder can worsen the condition. We explain more about this condition, including:

causes

risks

what to expect from treatment

Causes of familial combined hyperlipidemia This type of hyperlipidemia is passed down through families via genes. However, scientific research is ongoing into the specific genes that cause this disorder. The research is complex because the characteristics of mixed hyperlipidemia overlap with those of metabolic syndrome. This syndrome is not genetically determined and is more widespread. But new statistical and genetic research techniques are helping scientists understand the causes of mixed hyperlipidemia. If one of your parents has mixed hyperlipidemia, you have a 50 percent chance of inheriting the genetic risk of the disorder, according to a Kaiser Permanente report. And if both of your parents have it, you might inherit what doctors call a "double dose," which can cause more serious medical problems earlier in life.

Diagnosing familial combined hyperlipidemia Doctors usually take note of familial combined hyperlipidemia when blood tests indicate high lipid levels. You may not have any physical symptoms. But knowing your family history of heart disease or hyperlipidemia will help your doctor make a diagnosis. Genetic research is progressing. Medical professionals may someday develop a genetic test for mixed hyperlipidemia and treatment that targets the genes involved "but these are not yet available. Your doctor will need to perform a blood test to make a diagnosis. The test determines the lipid levels in your blood. The following results indicate that you may have familial combined hyperlipidemia: lower-than-average HDL cholesterol levels

higher levels of LDL cholesterol, triglycerides, and apolipoprotein B100 The blood test requires fasting for 9 to 12 hours before the test. That means you cannot eat or drink anything except water. Your doctor will also ask you about any medications and supplements you usually take and tell you whether you can take these before the test. There is a current debate among medical professionals as to whether people truly need to fast before this blood test. At present, they recommend fasting, but this might change. Some doctors may use a carotid ultrasound as a diagnostic tool, as it's not expensive or invasive. Plus, it can help predict your risk of future heart attacks or stroke.

Treatment Mixed hyperlipidemia is an inherited disorder with no complete cure. The goal of treatment is to reduce your risk of heart disease and its complications. Your treatment plan will depend on: your age at diagnosis

how high your lipid levels are

whether you have any symptoms, such as chest pain The first step in treatment is typically your healthcare professional recommending some lifestyle adaptations that will support your health by helping reduce your cholesterol levels. They may also prescribe medications. Making lifestyle changes For many people, lifestyle changes alone can help reduce cholesterol and triglyceride levels. To help reduce your risk of heart disease, your doctor may suggest eating a low fat diet, maintaining a moderate body weight, and getting regular exercise, alongside other measures. However, if you have familial mixed hyperlipidemia, your healthcare professional will recommend interventions for managing your cholesterol levels. Quitting smoking Smoking increases the risk of heart disease. If you smoke, quitting tobacco may be challenging, but it can be done. It's important for reducing your risk for health problems later in life. Some methods for smoking cessation include: Nicotine replacement therapy. This treatment aims to replace nicotine from tobacco with other delivery methods like nicotine skin patches, inhalers, or gums. By gradually reducing intake without smoking, a person can eventually phase out the urge to smoke.

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Smoking cessation drugs like bupropion (Zyban) can help ease cravings and withdrawal symptoms. Some alternative therapies. Some people who look to quit smoking use hypnosis, acupuncture, or meditation to reduce cravings. Maintaining a healthy body weight Obesity is a risk factor for heart complications. If you have familial combined hyperlipidemia, striving to maintain a moderate body weight can help reduce your risk of heart problems later in life. It's important to maintain a calorie deficit if weight loss is your goal. This means using more calories than you consume. If necessary, seek consultation with a dietitian for help planning a nutrient-dense diet or getting information about available weight management programs like WW, formerly Weight Watchers. Exercising If you're new to exercising, it's suggested that you start off with 15 minutes of moderate exercise per day. A recommended goal is at least 150 minutes of physical activity per week, even if you split your workout into segments like 10-minute intervals. It can be helpful to find something that you like to do, which might include: walking

swimming

biking

dancing

a gym workout

gardening The most helpful way to make exercise sustainable is finding a routine that you'll enjoy and stick to. Eating a nutrient-rich, low fat diet A low fat diet can lessen your risk of heart disease due to hyperlipidemia, according to the American Heart Association . A 2020 review also suggests that a low carb eating plan, such as a keto diet, can be effective in lowering both your weight and triglycerides while increasing HDL. But a keto diet might not be sustainable long term, so it's a good idea to speak to a dietitian if you're planning to pursue low carb eating. Other ideas for a balanced, nutritious diet include: limiting your intake of fast food and maximizing fresh foods

incorporating more lean fish in your diet

making more food at home, so that you have more control over ingredients and portion sizes

trying a Mediterranean-style diet There are many resources that can help you plan healthy menus that work with your lifestyle. Medication If your cholesterol levels remain high after lifestyle changes, your doctor may prescribe medication. There are several drugs that can help. Each works differently to help manage your cholesterol levels. They may include: Statins. These are usually a first-line treatment. These drugs block the substance your liver uses to make cholesterol.

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These drugs limit the amount of dietary cholesterol you absorb. Injectable drugs. Certain injectable medication can help the liver lower the cholesterol level in your blood. You may experience side effects after taking a particular medication or combination of drugs. For instance, some people cannot tolerate statins. If this is the case, your doctor will work with you to find another drug option. Your doctor will monitor your treatment progress with regular lab tests. They may also monitor the effect of the medications on your liver function. New information about possible treatment is still coming out. If you have mixed hyperlipidemia, talk with your doctor regularly about research updates.

Outlook Your outlook when you have mixed hyperlipidemia depends on: how early you received diagnosis

how you respond to the prescribed treatment plan

how well you stick to the plan Without treatment, mixed hyperlipidemia increases your risk of an early heart attack or stroke. But by implementing lifestyle measures and taking medication as prescribed, your lipid levels can return to a healthy range.

Reference

[Applied Qualitative Research Design: A Total Quality Framework Approach](#)

[Career Advice for Young Scientists in Biomedical Research: How to Think Like a Principal Investigator](#)