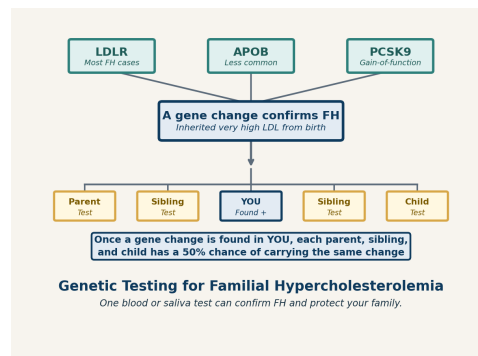


Genetic Testing for Familial Hypercholesterolemia (FH)

Which Genes, How the Test Works, and What Your Result Means

Familial hypercholesterolemia (FH) is an inherited condition that causes very high LDL ('bad') cholesterol from birth and early heart disease if untreated. A simple blood or saliva test can find the gene change behind it — confirming the diagnosis and letting your relatives be tested and protected early.



Online: <https://go.riasalimd.com/fh-genetic-testing-guide>

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Names & Terms You Will Hear

Term	Meaning
Familial Hypercholesterolemia (FH)	An inherited condition that causes very high LDL ('bad') cholesterol from birth. Untreated, it leads to early heart disease.
Genetic (DNA) Testing	A lab test that reads your genes to look for a change that causes FH. Done on a small blood draw or a saliva (spit) sample.
LDLR Gene	The LDL-receptor gene. A change here is by far the most common cause of FH — the great majority of identified cases.
APOB Gene	Makes the protein that LDL uses to dock on its receptor. A change here is a less common cause of FH.
PCSK9 (Gain-of-Function)	A change that makes the body destroy too many LDL receptors. This is the least common of the three main FH genes.
LDLRAP1 Gene	Linked to a rare recessive form of FH that needs a changed copy from BOTH parents. Most FH is not this type.
Polygenic High Cholesterol	Many small gene effects added together — not one big change. A negative single-gene test does NOT rule out a real inherited problem.
Pathogenic Variant	A gene change known to cause disease. This is a 'positive' result. It confirms FH.
Variant of Uncertain Significance (VUS)	A change found in your DNA that we cannot yet call harmful or harmless. It is NOT used to guide your care on its own.
Cascade Screening	Testing your parents, brothers, sisters, and children after a gene change is found in you. Each first-degree relative has a 50% chance.
MLPA (Deletion/Duplication Test)	A lab test that catches large missing or extra pieces of the LDLR gene that ordinary sequencing can miss.



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Term	Meaning
GINA	The Genetic Information Nondiscrimination Act. A U.S. law that bars health insurers and employers from using your genetic results.

Three things to know before you test:

- 1. Most FH comes from one of three genes** — LDLR (most common), APOB, or PCSK9; the lab also runs an MLPA test.
- 2. One positive result helps the whole family** — relatives can be tested for that exact change (cascade screening), the most effective way to find FH.
- 3. Your results are private** — the GINA law bars health insurers and employers from using them.



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Genetic Testing for Familial Hypercholesterolemia (FH)?

- Familial hypercholesterolemia (FH) is an inherited condition. It causes very high LDL ('bad') cholesterol from birth. Untreated, it raises the risk of heart attacks and strokes at a young age.
- Genetic testing for FH reads your DNA to look for the gene change behind it. The sample is a small blood draw or a saliva (spit) tube. It does not hurt your DNA. Results usually take a few weeks.
- Most FH comes from a change in one of three genes: LDLR (the LDL receptor — by far the most common), APOB, or PCSK9 (a 'gain-of-function' change). A rare recessive form involves LDLRAP1.
- The lab runs a gene panel (next-generation sequencing) of these genes. It also runs a test called MLPA to catch large missing or extra pieces of the LDLR gene that sequencing alone can miss.
- Not all inherited high cholesterol comes from one big gene change. Many people have a polygenic picture — many small gene effects added together. So a negative single-gene test does not rule FH out.
- Your result comes back in one of three ways: positive (a known disease-causing change was found), negative (none found), or VUS (a change was found but we are not sure it matters).
- A positive result does the most good for your family. Once the exact change is known, parents, siblings, and children can be tested for that one change. This is called cascade screening.
- FH is the condition; this guide covers the testing for it. To learn about FH itself — what it is and how it is treated — see Dr. Ali's Familial Hypercholesterolemia guide linked at the end.



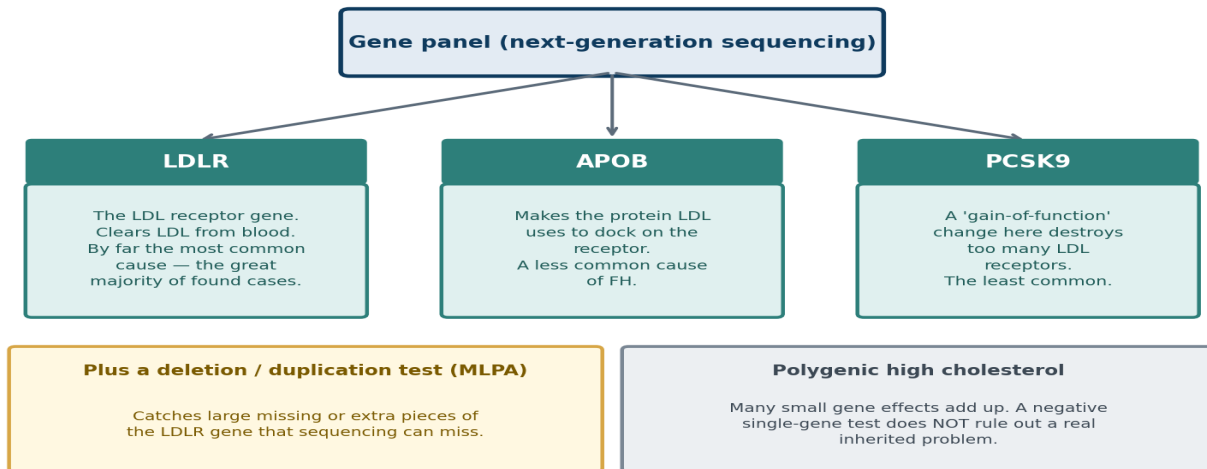
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What the FH Gene Test Looks For



What the FH gene test looks for. The panel reads the three main FH genes — LDLR (the most common cause), APOB, and PCSK9 (a gain-of-function change) — using next-generation sequencing. A separate MLPA test catches large missing or extra pieces of the LDLR gene. Polygenic high cholesterol (many small effects) means a negative single-gene test does not rule out a real inherited problem. Source: 2018 JACC expert-panel consensus; MedlinePlus Genetics.

The FH genes: what each does and how common it is

Gene	What a change does	How common in FH
LDLR	Breaks the LDL receptor that clears LDL from the blood	By far the most common — the great majority of found cases
APOB	Changes the protein LDL uses to dock on its receptor	A less common cause
PCSK9 (gain-of-function)	Makes the body destroy too many LDL receptors	The least common of the three main genes
LDLRAP1	Linked to a rare recessive form (needs a change from both parents)	Rare
No single gene found (polygenic)	Many small gene effects add up to high LDL	A meaningful share of clinically-definite FH



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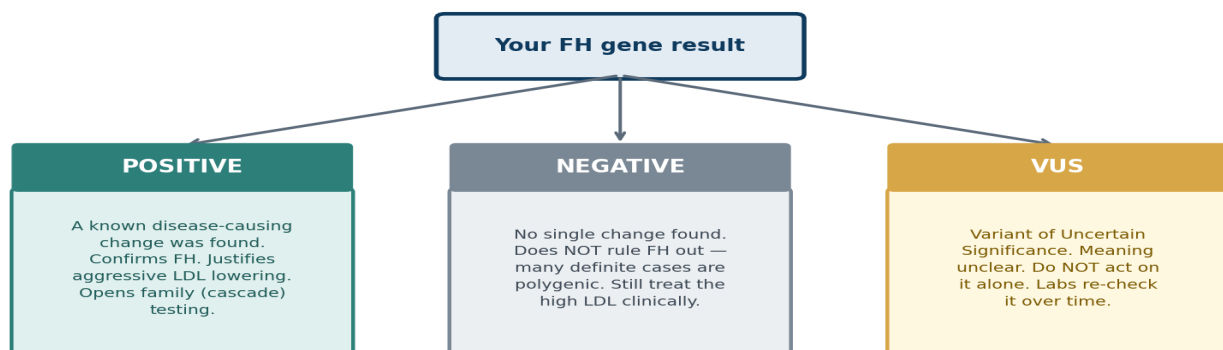


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Why It Matters

- FH is common but badly under-diagnosed. Many people who have it never find out until a heart attack. A gene test can confirm it early, so treatment can start years sooner.
- A positive result backs strong treatment. It tells your doctor this is true inherited FH, not ordinary high cholesterol — so strong LDL lowering, started early, is the right plan.
- The biggest payoff is for family. Once your gene change is known, each first-degree relative can be tested for that one change. Cascade screening is the most effective way to find hidden FH.
- Finding and treating affected relatives prevents heart attacks. A child or sibling who tests positive can start protection long before any damage is done.
- A negative single-gene test does not mean you are safe. A meaningful share of clearly-definite FH has no findable single change. You still treat the high cholesterol you can measure.
- Testing guides care; it rarely replaces it. Your LDL number, your family history, and your exam still matter. The gene result adds certainty and opens the door to family testing.

What Your FH Gene Result Means — and What to Do Next



What your result means. **POSITIVE**: a known disease-causing change confirms FH, justifies aggressive LDL lowering, and opens cascade family testing. **NEGATIVE**: no single change found — does NOT rule FH out (often polygenic); still treat the high LDL clinically. **VUS**: a change of uncertain meaning that is NOT acted on alone. Colors here are neutral on purpose.

Source: ClinGen FH variant curation; 2018 JACC consensus.



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A POSITIVE Result: A Known FH Change Was Found

- A positive result means the lab found a gene change already known to cause FH — in LDLR, APOB, or PCSK9. It confirms the diagnosis, even if your LDL was borderline.
- It justifies early, aggressive LDL lowering. The plan is usually a high-intensity statin, often plus ezetimibe, and a PCSK9 inhibitor or inclisiran when needed — plus lifestyle.
- It opens the door to cascade screening. Now your relatives can be tested for the exact same change. Each first-degree relative has a 50% chance of carrying it.
- It is good news, not a sentence. FH is very treatable. Starting treatment early — especially in children and young adults — prevents most of the heart risk.
- Keep your lab report. It names the exact gene and change. Relatives and future doctors need that exact name to test for the same change.
- Your care team and counselor make a clear, lifelong plan: which medicines, what LDL goal, and when to involve family. You are not facing it alone.



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A NEGATIVE Result: No Single Change Was Found

- A negative result means the lab did not find a known disease-causing change in the FH genes it checked. That can be reassuring — but it must be read in context.
- It does NOT rule FH out. A meaningful share of clinically-definite FH has no findable single change, often because the cause is polygenic — many small gene effects.
- Your doctor still treats the high cholesterol you can measure. If your LDL and family history point to FH, you are treated as if you have FH, gene change or not.
- A negative result is most powerful when a relative's change is already known. If you test negative for the family's exact change, you usually do not carry the family's FH.
- Cascade screening of relatives by gene test is less useful when no single change was found. In that case, relatives are screened with cholesterol blood tests instead.
- Ask your counselor what your negative result means for you specifically. The answer depends on your LDL, your family, and whether a family change was already identified.



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A VUS: A Change of Uncertain Meaning

- VUS stands for 'variant of uncertain significance.' The lab found a gene change, but there is not yet enough evidence to call it harmful or harmless.
- A VUS is NOT used to guide your care. Guidelines are clear: doctors should not start or change treatment based on a VUS alone, and should not use it to test relatives.
- Most VUS results are later found to be harmless. Labs re-check them over time as more is learned. A small number are eventually re-classified as disease-causing.
- Your treatment still follows your cholesterol numbers and family history. If those point to FH, you are treated for FH regardless of the VUS.
- It is normal to feel unsettled by a VUS. A genetic counselor can explain why it does not change your plan and what to watch for as labs learn more.
- Ask to be kept informed. If your VUS is re-classified in the future, your care team can reach out and update your plan.



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Risk Factors

Some patients are more likely to develop this condition. Knowing your risk helps your care team take extra precautions.

Risk Factor	Why It Increases Risk
Very high untreated LDL cholesterol	An untreated LDL around 190 mg/dL or higher in an adult — or 160 mg/dL or higher in a child — is a strong clue for FH and a common reason to test.
Family history of very high cholesterol	FH runs in families. High cholesterol in a parent, sibling, or child raises the chance you carry the same gene change.
Early heart attack or stroke in the family	A heart attack or stroke before about age 55 in men or 65 in women, in you or a close relative, points toward inherited FH.
Signs of cholesterol buildup	Cholesterol bumps in the tendons (such as the Achilles), bumps on the skin, or a pale ring around the eye in a young person are signs of FH.
A relative with a known FH gene change	If a relative's exact change is already known, your test is simple, fast, and very accurate — we look for that one change only. Each first-degree relative has a 50% chance of carrying it.
A child of a parent who has FH	Children of an affected parent can be screened early. Finding FH in childhood lets treatment begin while the arteries are still healthy.
An FH score from your doctor	Doctors use scoring tools — the Dutch Lipid Clinic Network points and the Simon Broome rules — to gauge how likely FH is and whether a gene test will help.

How doctors score the suspicion for FH.

Two tools gauge how likely FH is before a gene test: the **Dutch Lipid Clinic Network (DLCN)** point score and the **Simon Broome** rules (definite or possible FH). They add up your LDL level, your family history of high cholesterol and early heart disease, and signs like tendon cholesterol bumps. A high score means a gene test is well worth it.



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Treatment Options

- **Start with your doctor or a genetic counselor.** They review your LDL numbers, your family tree, and any physical signs. They explain what the test can and cannot tell you, cover privacy and the GINA law, and help you decide. The choice is yours.
- **Give a sample: blood or saliva.** Most tests use a small blood draw; some use a saliva (spit) or cheek-swab sample. Both read the same DNA. Results usually take a few weeks to come back.
- **The lab runs a gene panel plus MLPA.** Next-generation sequencing reads the FH genes (LDLR, APOB, PCSK9, and sometimes LDLRAP1). A separate MLPA test catches large missing or extra pieces of the LDLR gene that sequencing can miss.
- **A positive result confirms FH and shapes treatment.** It justifies early, aggressive LDL lowering — usually a high-intensity statin, often plus ezetimibe, and a PCSK9 inhibitor or inclisiran when needed — plus lifestyle steps. Treatment is lifelong.
- **Cascade screening is the big payoff.** Once your change is known, relatives can be tested for that one change. Those who carry it start treatment early. Those who do not are usually reassured and spared extra worry.
- **A negative result is read in context.** It does not rule FH out — many definite cases are polygenic, with no single findable change. Your doctor still treats the high cholesterol you can measure, based on your LDL and your history.
- **A VUS is not acted on.** A 'variant of uncertain significance' is not used to make decisions. Labs re-check these over time; some are later called harmless, a few become known causes. Your counselor keeps you posted.
- **Treat children and young adults early.** Catching FH young, before plaque builds, makes treatment far more powerful. A child who tests positive can be protected for life.



Giving the sample. Most FH gene tests use a small blood draw like this one, taken from a vein in the arm; some labs use a saliva (spit) or cheek-swab sample instead. Both read the same DNA. Image: CDC/Amanda Mills, Public Health Image Library #13480 (Public Domain).



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Comfort Measures at Home (No Medication Needed)

These simple steps support healing and ease symptoms. Use them alongside any medication your doctor prescribes.

- Bring your family history to the visit. Write down which relatives had high cholesterol or early heart attacks, and at what age. A family tree is one of the most useful tools your team has.
- Ask about cost and coverage up front. Panel testing often runs from a couple hundred to several hundred dollars. Many plans cover it when your high LDL and family history are on file. Ask for an estimate.
- Ask about sponsored or no-cost testing. Some genetics labs and FH programs offer free or sponsored testing for eligible patients. Your clinic's genetic counselor or the lab can tell you if you qualify.
- Know your privacy rights. GINA stops health insurers and employers from using genetic results. It does NOT cover life, disability, or long-term-care insurance, so ask your counselor about timing.
- Keep a copy of your result. Save the lab report. It names the exact gene and change. Relatives and future doctors need that exact name to test for the same change.
- Tell your relatives if you test positive. A short, kind message lets them get tested and protected. Your counselor or doctor can give you a family letter to share.
- Keep up your heart-healthy habits. A gene result does not replace a good diet, exercise, not smoking, and your prescribed medicines. Those still lower your risk.

Cost, coverage, and free testing.

FH panel testing often runs from a couple hundred to several hundred dollars. Many plans cover it when your high LDL and family history are on file. Some labs and FH programs offer **no-cost or sponsored testing** for those who qualify. Prices and coverage vary, so your genetic counselor or the lab can give an estimate and check your plan.



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Risks, Benefits, and Alternatives

Every choice has trade-offs. Use this table to start the shared decision conversation.

Option	Risks	Benefits	Alternatives
FH gene testing (after counseling)	Can return a VUS that brings worry without a clear answer. A negative result can be misread as 'all clear.' Out-of-pocket cost if insurance does not cover it.	Confirms FH, justifies aggressive early treatment, and unlocks cascade testing of relatives. Can prevent heart attacks in family members found early.	Diagnose FH on clinical grounds alone (LDL, family history, exam, DLCN or Simon Broome score) and treat without a gene test.
Cascade screening of relatives	Relatives must decide whether to know. Some feel anxious while waiting. A positive result means lifelong treatment.	Finds hidden FH in relatives before any heart damage. Targeted single-change test is simpler and cheaper. The single most effective way to find FH.	Screen relatives with a cholesterol blood test only, without gene testing. Less precise; may miss carriers whose LDL looks borderline.
Genetic counseling	Adds a visit before testing. Rarely raises hard questions about family and future plans.	Helps you make an informed choice, understand your result, check coverage, and protect your privacy. Reduces confusion.	Order testing without counseling — not advised; raises the chance of a misread result and missed family screening.
Acting on a VUS	A VUS is uncertain. Treating it like a real cause can lead to needless worry or testing of relatives.	None proven. Guidelines say a VUS should NOT change your care or be used to test family.	Wait and watch. Labs re-classify VUS results over time. Your counselor will update you.



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Option	Risks	Benefits	Alternatives
No gene testing	May miss a confirmed FH diagnosis and the chance to protect relatives through cascade screening.	No cost, no chance of a VUS, no privacy questions to weigh. You can still be treated for high cholesterol.	Treat based on LDL and family history, and screen relatives with cholesterol blood tests. A reasonable path when testing is not available.



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Common Misconceptions

Myth	Reality
"A genetic test will change my DNA."	It will not. The test only reads your DNA to look for a change. It is a blood draw or a saliva tube. Nothing is added or altered. Your genes stay exactly as they are.
"A negative test means I do not have FH."	Not always. A meaningful share of clearly-definite FH has no findable single change — often because it is polygenic. Your doctor still treats the high cholesterol you can measure.
"If the test is positive, I am doomed."	The opposite. A positive result means we know exactly what is going on and can treat it hard and early. FH is very treatable. People who treat it can live long, healthy lives.
"A VUS means I have FH."	No. A 'variant of uncertain significance' is a change we cannot yet call harmful or harmless. Guidelines say it should NOT change your care. Most VUS results are later found to be harmless.
"My insurance can drop me if I test positive."	A U.S. law called GINA bars health insurers and employers from using your genetic results to deny coverage or a job. Ask your counselor about life and disability insurance, which GINA does not cover.
"Only I need to be tested."	Once a change is found in you, each first-degree relative has a 50% chance of carrying it. Cascade screening tests them all — and it is the most powerful step after an FH diagnosis.
"Genetic testing is too expensive for me."	Panel testing often runs a few hundred dollars, many insurers cover it when criteria are met, and some labs and FH programs offer no-cost or sponsored testing. Ask before you assume.



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Myth	Reality
"A gene test replaces my cholesterol checks."	It does not. Your LDL number still guides treatment day to day. The gene result adds certainty and opens family testing — it works alongside your regular cholesterol checks, not instead of them.



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Possible Complications

Knowing what can go wrong helps you spot problems early. Most complications are uncommon, especially with treatment.

Where / What	What Can Happen
Uncertain result (VUS)	A change is found, but its meaning is unknown. This can cause worry. A good counselor explains that a VUS should not change your care, and that it may be re-classified later.
False reassurance	A negative result may be read as 'no FH' when FH is still possible — for example a polygenic cause. Your doctor reads the result alongside your LDL number and family history.
Emotional impact	Learning you carry an FH change — or that you passed it on — can be stressful. Counseling and support help. Knowing also brings the power to treat early and protect family.
Family stress	Results affect relatives, not just you. Some may not want to know. Sharing a result is a personal choice; a counselor can help you approach it gently.
Insurance gaps	GINA protects health insurance and employment, but not life, disability, or long-term-care insurance. Timing of those policies is worth discussing before you test.
Cost and coverage surprises	Prices and coverage vary. Ask your clinic's genetic counselor or the lab for an estimate and a coverage check before testing, and ask about sponsored programs.

Your privacy and the GINA law.

The Genetic Information Nondiscrimination Act (GINA) is a U.S. law. It bars **health insurers** from using your genetic results to deny coverage or raise your premium, and bars **employers** from using them in hiring or firing. GINA does **not** cover life, disability, or long-term-care insurance — so ask your counselor about the timing of those policies before you test.



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Points to Know

If you remember nothing else, remember these key points.

- FH is an inherited condition that causes very high LDL from birth. Genetic testing reads your DNA from blood or saliva to find the change behind it. It does not change your genes.
- Most FH comes from a change in LDLR (most common), APOB, or PCSK9. A rare recessive form involves LDLRAP1. The lab also runs MLPA to catch large missing pieces of the LDLR gene.
- Doctors suspect FH when untreated LDL is around 190 mg/dL or higher in adults (160 or higher in children), with a family history of high cholesterol or early heart attacks, or physical cholesterol deposits.
- Results come in three forms: positive (a known change found — confirms FH), negative (none found — does NOT rule FH out; may be polygenic), and VUS (uncertain — not acted on alone).
- A positive result justifies early, aggressive LDL lowering: a high-intensity statin, often plus ezetimibe, and a PCSK9 inhibitor or inclisiran when needed. Treatment is lifelong; start it early.
- Cascade screening is the biggest payoff. Once your change is known, relatives get a simple, targeted, cheaper test. Each first-degree relative has a 50% chance of carrying it.
- Costs vary — often a few hundred dollars; many plans cover it, and some programs offer no-cost testing. GINA protects your health insurance and job, but not life or disability.
- A genetic counselor guides the whole process and helps with cost, coverage, privacy, and family testing. Testing is your choice and is almost never urgent.



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When to Call Us - and When to Call 911

If you are not sure, call. We would rather hear from you twice than miss a real problem.

- **Call 911** for chest pain, sudden weakness or trouble speaking, or trouble breathing. FH raises the risk of early heart attack and stroke. Do not drive yourself.
- **Call our office (727-943-5200)** if your untreated LDL is around 190 mg/dL or higher, or your child's is 160 or higher. We can check whether FH testing makes sense for you.
- **Call us** if a close relative was found to have FH or a known FH gene change. We can arrange a simple, targeted test for that exact change.
- **Call us** if a parent, sibling, or child had a heart attack or stroke at a young age, or very high cholesterol. Family testing may help find FH early.
- **Call us** if you notice cholesterol deposits — bumps on tendons or skin, or a pale ring around the eye in a young person. These can be physical signs of FH.
- **Call us** if you have an FH gene result you do not understand. We will go over it with you, or connect you with a genetic counselor.
- **Call us** if you have FH and want your children or other relatives screened. Finding and treating FH early prevents heart attacks.

Office: (727) 943-5200

See also: companion guides from Dr. Ali.

[Familial Hypercholesterolemia \(the condition\)](#) · [Genetic Testing for Heart Conditions](#) · [Inherited Heart Conditions](#) · [Statin Therapy](#) · [PCSK9 Inhibitors](#).



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Trusted Resources

The links below are the trusted resources Dr. Ali used to write this guide and that he recommends you visit for more information. Each is a clickable link in the digital version and a Short.io tracked URL on the printed version.

- [MedlinePlus Genetics — Familial Hypercholesterolemia \(NIH\)](#) - Federal plain-language page on FH, its genes (LDLR, APOB, PCSK9, and LDLRAP1), and how it is inherited.
- [Family Heart Foundation — Genetic Testing and FH](#) - Patient advocacy resource on FH genetic testing, cascade screening of relatives, and sponsored or no-cost testing programs.
- [NHGRI — Genetic Discrimination and the GINA Law](#) - Official explanation of GINA: what it protects (health insurance and jobs) and what it does not (life, disability, long-term care).
- [Find a Genetic Counselor \(NSGC\)](#) - Search tool from the National Society of Genetic Counselors to locate a certified genetic counselor near you.
- [MedlinePlus — What is Genetic Counseling? \(NIH\)](#) - Explains what a genetic counselor does and how a counseling visit helps before and after testing.
- [Cleveland Clinic — Familial Hypercholesterolemia](#) - Plain-language overview of FH — its cause, diagnosis, and treatment.
- [Familial Hypercholesterolemia — Companion Guide](#) - Dr. Ali's guide to the FH condition itself — what it is, how it is diagnosed, and how it is treated.
- [Genetic Testing for Heart Conditions — Companion Guide](#) - Dr. Ali's broader guide to cardiac genetic testing — how the testing process works for inherited heart conditions in general.
- [PCSK9 Inhibitors — Companion Guide](#) - Dr. Ali's guide to PCSK9-inhibitor and inclisiran injections, a key treatment when statins alone do not get FH LDL to goal.
- [Statin Therapy — Companion Guide](#) - Dr. Ali's guide to statins, the first-line, lifelong LDL-lowering treatment for FH.



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Sources Used to Build This Guide

Every recommendation in this guide is grounded in one or more of the studies, guidelines, or trusted resources below. Short links are tracked so Dr. Ali can see which references patients are reading; nothing personally identifying is captured.

- [AHA Scientific Statement — The Agenda for Familial Hypercholesterolemia \(Gidding 2015\)](#) [Guideline]
AHA scientific statement on FH diagnosis, the role of genetic testing, and cascade screening of relatives
- [JACC Scientific Expert Panel — Clinical Genetic Testing for Familial Hypercholesterolemia \(Sturm 2018\)](#) [Guideline]
FH Foundation / convened expert panel guidance on when and how to use FH genetic testing (LDLR, APOB, PCSK9), how to interpret positive vs negative vs VUS results, and how a single-gene negative does not exclude FH
- [Dutch Lipid Clinic Network & Simon Broome Diagnostic Criteria for FH \(NCBI Bookshelf\)](#) [Guideline]
The two clinical scoring systems (DLCN points, Simon Broome definite/possible) that doctors use alongside genetic testing to score how likely FH is
- [NHGRI — Genetic Discrimination & the GINA Act](#) [Patient-Education]
Explains the Genetic Information Nondiscrimination Act (GINA) protections — and the life/disability/long-term-care gap — that patients ask about before agreeing to FH genetic testing
- [ClinGen FH Variant Curation Expert Panel — LDLR/APOB/PCSK9 Gene Curation](#) [Guideline]
Authoritative variant-classification framework for the three FH genes; explains pathogenic vs variant-of-uncertain-significance (VUS) results
- [MedlinePlus Genetics \(NIH/NLM\) — Familial Hypercholesterolemia](#) [Patient-Education]
Federal plain-language reference confirming the FH genes (LDLR most common; APOB, PCSK9; LDLRAP1 in the rare recessive form) and inheritance pattern
- [Family Heart Foundation — Genetic Testing and Familial Hypercholesterolemia](#) [Patient-Education]
Patient-facing FH advocacy resource on genetic testing, cascade screening of relatives, and sponsored / no-cost testing programs for eligible patients
- [MedlinePlus \(NIH/NLM\) — What is Genetic Counseling?](#) [Patient-Education]
Explains the genetic counselor's role before and after FH testing, including coverage, privacy, and family-testing discussions



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About This Guide

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Reviewer note: Reviewed Cleveland Clinic, Mayo Clinic, AHA, NIH MedlinePlus, and the Family Heart Foundation, against the 2018 JACC expert-panel consensus on FH genetic testing and the 2015 AHA FH scientific statement. This guide adds: a three-gene (LDLR/APOB/PCSK9) panel + MLPA + polygenic diagram; a positive/negative/VUS result-meaning map with severity-neutral colors; a cascade family-tree; plain-language cost, insurance, sponsored-program, and GINA sections most patient pages omit; and cross-links to Dr. Ali's FH-condition, statin, and PCSK9 guides.

Disclaimer

This guide is for educational purposes only and does not replace medical advice from your physician. Recommendations may not apply to every patient. Always follow the specific instructions of Dr. Ali and your care team. In an emergency call 911 or go to the nearest emergency department.



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