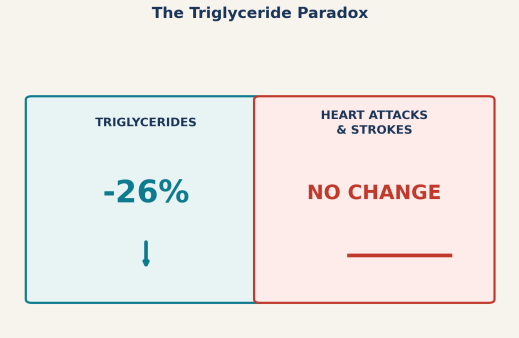
Understanding Fibrates: Fenofibrate and Gemfibrozil

A triglyceride pill family, and why a falling number did not mean a safer heart

Triglycerides fell 26% in the largest modern fibrate trial. Heart attacks and strokes did not. A pill can move a lab number without moving your risk.



Online: https://go.riasalimd.com/fibrates-guide

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Names & Terms You Will Hear

Term	Meaning
Fibrates	The common name for this whole drug family.
Fibric acid derivatives	The chemical family name for fibrates. You may see this on a pharmacy handout.
PPAR-alpha agonists	The mechanism-based name. It describes how fibrates work: they turn on PPAR-alpha, a switch inside liver cells.
Fenofibrate	Brand names have included Tricor, Lipofen, Antara, Fenoglide, Lofibra, and Triglide, plus generic versions. Brand availability changes over time; ask your pharmacist which product you have.
Fenofibric acid	The active form your body turns fenofibrate into. Sold on its own as Trilipix or Fibricor.
Gemfibrozil	Brand name Lopid. Widely available as a generic.
Bezafibrate and ciprofibrate	Older fibrates used in Europe and elsewhere. Neither is sold in the United States.
Clofibrate	The first fibrate, brand name Atromid-S. Withdrawn from the U.S. market after its own outcome trial (see Why It Matters).
Pemafibrate	Brand name Parmodia. A newer, more selective fibrate-type drug used in Japan. Not approved for use in the United States.
SPPARM-alpha	Short for 'selective PPAR-alpha modulator,' the technical name for pemafibrate's drug class.
Triglycerides (TG)	A type of fat carried in your blood, and the main target of fibrate therapy. See our separate Triglycerides guide for a full explanation.
Hypertriglyceridemia	The medical term for high triglycerides.

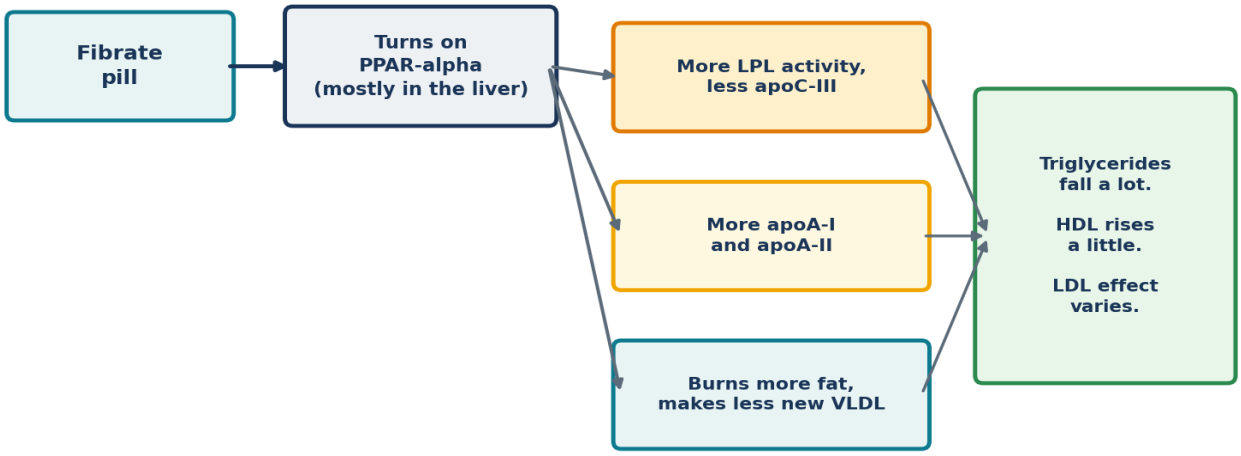
Term	Meaning
Severe or very severe hypertriglyceridemia	Very high triglycerides, generally 500 mg/dL or higher and especially over 1,000 mg/dL, the range where pancreatitis risk becomes the main concern.

The single most important safety line in this guide: never combine gemfibrozil with a statin. Gemfibrozil blocks how your liver clears statins. Statin levels in your blood climb sharply. So does the risk of serious muscle damage, called rhabdomyolysis. **Fenofibrate is the fibrate to use if you also take a statin.** It does not share this danger.

What Are Fibrates?

- Fibrates are pills that mainly lower triglycerides, a type of fat in the blood. They raise HDL, the 'good' cholesterol, a little. Their effect on LDL, the 'bad' cholesterol, is smaller and can vary.
- Two fibrates are used in the United States today: fenofibrate and gemfibrozil. Fenofibrate is also sold as its active form, fenofibric acid.
- They work by turning on a switch inside liver cells called PPAR-alpha. This is a type of nuclear receptor. That is why fibrates are also called PPAR-alpha agonists.
- Turning on PPAR-alpha raises an enzyme called lipoprotein lipase. This enzyme breaks down triglyceride-rich particles in the blood. PPAR-alpha also lowers a protein called apoC-III, which normally blocks that enzyme.
- PPAR-alpha also tells the liver to burn more fat for fuel. It makes fewer new triglycerides. It releases fewer triglyceride-rich particles into the blood.
- The net result is usually a large drop in triglycerides and a modest rise in HDL. LDL changes vary, and can even rise when triglycerides start out very high.
- Fibrates are not statins. They are a separate drug family with a different main job: managing triglycerides, not lowering LDL.

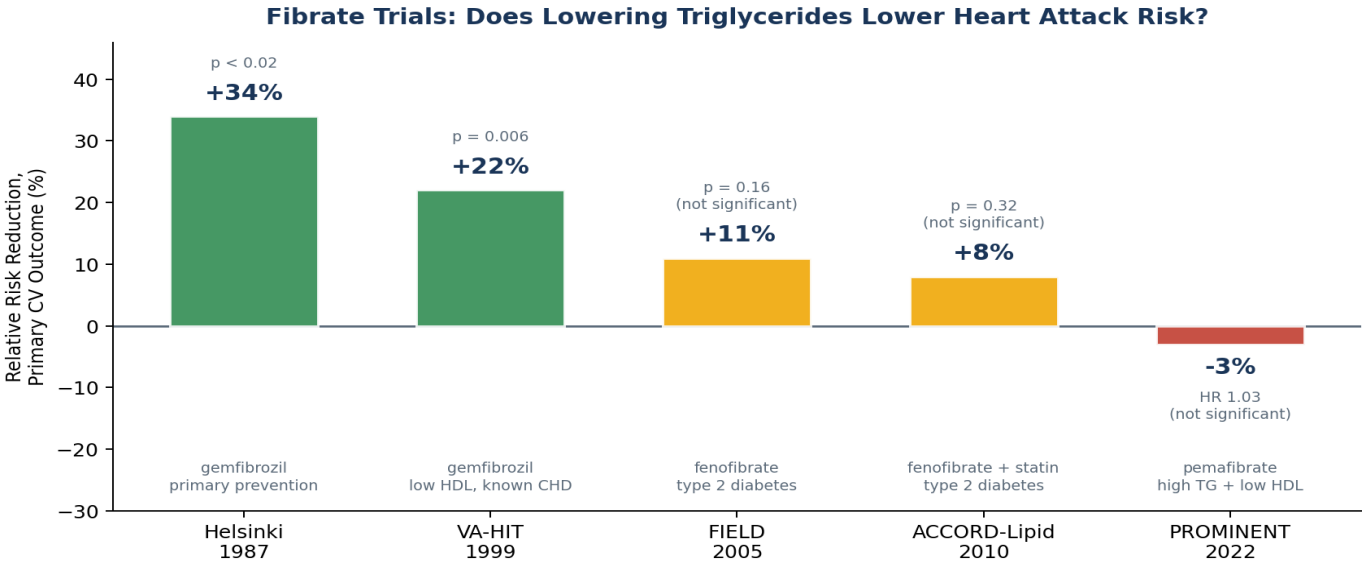
How Fibrates Work: One Switch, Several Downstream Effects



Fibrates activate PPAR-alpha, mostly in the liver. That one switch drives three downstream effects. Together, they lower triglycerides, raise HDL a little, and leave LDL's direction unpredictable. (Schoonjans, Staels, Auwerx 1996.)

Why It Matters

- Fibrates are the oldest lipid-lowering drugs still in use. They came before statins. Their story teaches a key lesson: a lab number improving is not the same as a longer, healthier life.
- The first fibrate, clofibrate, was tested in the 1960s and 1970s. This was the WHO Cooperative Trial. Clofibrate lowered cholesterol. But the treated group had 25% more deaths overall, from many causes that were never explained. Clofibrate was later pulled from the U.S. market.
- Gemfibrozil looked much better at first. The Helsinki Heart Study (1987) tested it in healthy men with high cholesterol. Coronary events dropped 34%. VA-HIT (1999) tested it in men who already had heart disease and low HDL. Heart attacks and coronary deaths dropped 22%. Both trials came before statins were standard care.
- Once statins became routine, the question changed. Does adding a fibrate on top of standard care prevent more heart attacks? Three major trials tested this directly.
- FIELD (2005) tested fenofibrate in almost 10,000 people with diabetes. It missed its main goal. Events fell only 11%, and that was not statistically proven. Part of the reason: more people in the placebo group started a statin during the study.
- ACCORD-Lipid (2010) added fenofibrate to a statin in people with diabetes. Again, no overall benefit. Events fell only 8%, not statistically proven. One small group, people with both high triglycerides and low HDL, seemed to do better. But that finding fell just short of proof. It needed a cleaner test.
- PROMINENT (2022) was that cleaner test. It studied pemafibrate in exactly the group ACCORD-Lipid pointed to. Triglycerides fell a lot, by 26%. Heart attacks, strokes, and cardiovascular deaths did not change at all.
- The lesson: triglycerides can fall a lot without heart attack risk falling at all. This does not mean every triglyceride drug is useless. Icosapent ethyl is a different kind of drug. It proved a real benefit in its own large trial, called REDUCE-IT. Each drug needs its own proof. A better lab number is not enough on its own.



Five fibrate-class trials, in order. Early trials, run without background statin therapy, were positive. Later trials added a fibrate on top of modern therapy. There, the benefit shrank, then disappeared. Every figure here is independently verified against the published trial.

The punchline: PROMINENT was the largest, most rigorous fibrate trial ever run. It tested pemafibrate in the exact patients earlier trials pointed to: people with diabetes, high triglycerides, and low HDL. Triglycerides fell 26%. Heart attacks, strokes, and cardiovascular deaths did not fall at all. ApoB, a marker of artery-clogging particles, rose instead of falling. Lowering a triglyceride number is not the same goal as lowering heart risk. Proving one does not prove the other.

Risk Factors

Certain things raise your triglycerides, and with them, the chance you will need a fibrate.

Risk Factor	Why It Increases Risk
Poorly controlled diabetes	High blood sugar drives the liver to make more triglyceride-rich particles. It also slows how fast they clear from the blood.
Obesity, especially around the belly	Extra fat tissue raises triglyceride production. It also lowers the activity of the enzyme that clears them.
Heavy alcohol use	The liver turns alcohol into triglycerides. Even a few drinks can spike levels in someone prone to high triglycerides.
An underactive thyroid (hypothyroidism)	Thyroid hormone helps clear triglycerides from the blood. Too little of it lets levels climb.
Kidney disease	Reduced kidney function changes how the body handles triglyceride-rich particles. It can raise levels.
Certain other medicines	Estrogen pills, tamoxifen, steroids, and some other drugs can raise triglycerides as a side effect. A fibrate may be added on top of these causes, not instead of fixing them.
A family tendency toward high triglycerides	Some families carry genes that make triglycerides run high. Levels can even reach the range where pancreatitis becomes a real risk.

Treatment Options

- Fenofibrate is the fibrate to reach for if you take, or will take, a statin. It does not share gemfibrozil's dangerous statin interaction.
- Gemfibrozil is usually taken twice a day, before meals. Because of its statin interaction, it is mainly used alone, in people not taking a statin.
- Fenofibrate is usually taken once a day. The exact dose depends on which product your prescriber chooses. Different fenofibrate products are not always the same milligram for milligram.
- Before starting, your care team checks kidney function, liver enzymes, and a baseline lipid panel. The dose may be lowered, or the drug avoided, if kidney function is significantly reduced.
- A follow-up lipid panel, plus liver and kidney labs, is usually rechecked within a few months of starting.
- If you also take warfarin, tell your care team. Fibrates can strengthen warfarin's effect. Your INR, a blood-thinning test, may need closer monitoring.
- Active liver disease and active gallbladder disease are reasons to avoid fibrates. Tell your care team about any history of either.
- Diet, less alcohol, weight loss, and blood sugar control lower triglycerides too. This is true whether or not you also take a fibrate.

Triglyceride Tiers: What Actually Changes Treatment



The number that actually changes what your care team recommends. Below 200 mg/dL, a fibrate is not indicated. From 200 to 499, statins and lifestyle lead instead. At 500 and above the goal shifts to preventing pancreatitis, and above 1,000 a fibrate is first-line for that. Preventing pancreatitis is a separate goal from protecting your heart.

Comparing the Fibrates: Availability, Statin Safety, and Notes

Agent	US Availability	Combine With a Statin?	Kidney (Renal) Note	Other Notes
Fenofibrate (and fenofibric acid)	Yes. Brand and generic; several brand names over the years.	Yes. This is the fibrate to use with a statin.	Dose lowered or avoided with significant kidney impairment.	Usually once daily. Fenofibric acid (Trilipix, Fibricor) is the same active drug.
Gemfibrozil	Yes. Generic only.	DO NOT COMBINE WITH A STATIN.	Dose adjusted for kidney impairment.	Usually twice daily, before meals. Mainly used alone.
Pemafibrate	No. Approved in Japan, not the United States.	Studied on top of a statin in PROMINENT. No heart-protection benefit was shown even so.	Not applicable; not US-marketed.	The most rigorously tested fibrate-class drug for heart protection, and the one that most clearly showed none.
Bezafibrate, ciprofibrate, clofibrate	No. Not currently marketed in the United States.	Not applicable.	Not applicable.	Clofibrate (Atromid-S) was the original fibrate; its own trial is why this guide's history section exists.

Tier 1: Normal to Borderline-High (Under 150 to 199 mg/dL)

- This is the range most adults are in. It is the target for every triglyceride treatment.
- A fibrate is not indicated here. No trial shows that starting one at this level helps.
- Diet, alcohol limits, weight, and exercise are the whole treatment plan at this tier.
- If triglycerides climb toward 200 despite these steps, your care team reassesses.

Tier 2: High (200 to 499 mg/dL)

- This is the range FIELD, ACCORD-Lipid, and PROMINENT actually studied. Each added a fibrate on top of standard care.
- A statin leads treatment here, chosen for your overall heart risk, not a fibrate.
- Adding a fibrate at this tier has not been proven to prevent more heart attacks or strokes in most people.
- Lifestyle change stays powerful at this tier. It can bring levels down a lot on its own.

Tier 3: Very High (500 mg/dL and Above)

- This is where the goal changes. Above 500 mg/dL, and especially above 1,000, the main worry is acute pancreatitis. This is a sudden, dangerous swelling of the pancreas.
- The Endocrine Society's guideline says a fibrate should be first-line treatment at this severe tier.
- This is a different goal from heart attack prevention. A fibrate is prescribed here to prevent pancreatitis, whether or not it also helps your heart.
- Strict alcohol avoidance and a very low fat diet are also part of treatment here, alongside medication.

Comfort Measures at Home (No Medication Needed)

These lifestyle steps lower triglycerides directly, sometimes enough on their own. Use them alongside any fibrate your doctor prescribes.

- Cut back on alcohol. Alcohol turns directly into triglycerides in the liver, and even a few drinks can spike levels.
- Cut back on added sugar and refined carbohydrates (white bread, white rice, sweets, sugary drinks). These raise triglycerides more than dietary fat does.
- Add fish rich in omega-3s (salmon, sardines, mackerel) a couple of times a week, or ask about a prescription omega-3 product.
- Move toward a healthy weight. Even a 5 to 10 percent weight loss can meaningfully lower triglycerides.
- Get regular aerobic exercise. It lowers triglycerides on its own, separate from any weight change.
- Get diabetes and thyroid problems under good control. Both raise triglycerides when left untreated.

Risks, Benefits, and Alternatives

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

Option	Risks	Benefits	Alternatives
Starting fenofibrate to prevent pancreatitis	Gallstones. A reversible rise in creatinine. Muscle aches. Rarely, a liver enzyme rise.	The guideline's first choice once triglycerides reach the severe range. It lowers the risk of a dangerous, painful pancreas problem.	Very strict diet and alcohol changes. A prescription omega-3 product. Treating a cause such as poorly controlled diabetes.
Adding a fibrate on top of a statin, hoping for extra heart protection	Extra pill burden and cost. A small muscle risk. A serious drug interaction if gemfibrozil is chosen by mistake.	Not proven. The large modern trials (FIELD, ACCORD-Lipid, PROMINENT) found no clear benefit. One subgroup showed a possible, unproven signal.	Icosapent ethyl, a different triglyceride drug proven in its own trial (REDUCE-IT). Or simply raising the statin dose.
Choosing gemfibrozil over fenofibrate while on a statin	A sharply higher risk of serious muscle breakdown (rhabdomyolysis). Gemfibrozil raises statin levels in your blood.	None over fenofibrate. Gemfibrozil adds no benefit that fenofibrate does not also give.	Fenofibrate. It does not share this dangerous interaction.
Using lifestyle change alone, without a fibrate	May not lower triglycerides enough if levels are very high or genetic. Takes sustained effort.	No drug cost, side effects, or interactions. It treats root causes: diet, alcohol, weight, blood sugar.	Add a fibrate if triglycerides reach the severe, pancreatitis-risk range despite lifestyle change.

Common Misconceptions

Myth	Reality
My triglycerides came down, so my heart risk came down too.	Not always. PROMINENT showed triglycerides fell 26% with pemafibrate. Heart attacks and strokes did not change at all. A lab number improving is not the same as a lower risk, unless a trial has actually proven it.
Fibrates and statins are interchangeable cholesterol pills.	They are not. Statins lower LDL. They have decades of proof they prevent heart attacks. Fibrates mainly lower triglycerides. The large modern trials have not shown that adding one to a statin prevents more heart attacks.
All fibrates are the same.	Not for safety. Gemfibrozil sharply raises statin levels in your blood. That raises the risk of serious muscle damage. Fenofibrate does not share this problem. That is why it is the fibrate used with a statin.
My creatinine went up, so this drug is damaging my kidneys.	Most often, no. Fibrates commonly cause creatinine, a kidney blood test, to rise a little. This is usually just a lab effect, not true kidney damage. It is usually reversible. Your care team still watches it.
It is a cholesterol drug.	It is mainly a triglyceride drug. Its effect on LDL cholesterol is smaller. LDL can even rise when triglycerides start very high.
If it does not prevent heart attacks, there is no reason to take it.	There is still one clear reason: very high triglycerides. They raise the risk of a painful, dangerous problem called pancreatitis. Preventing that is the main modern reason people take a fibrate.

Possible Complications

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

Where / What	What Can Happen
Hepatobiliary: Gallstones	Fibrates raise the amount of cholesterol dissolved in bile. That can lead to gallstones. This is the same effect that troubled the original fibrate, clofibrate, in the 1970s.
Hepatobiliary: Liver enzyme elevation	Blood tests that check the liver, called transaminases, can rise on a fibrate. Your care team checks these with routine blood work.
Musculoskeletal: Muscle pain and, rarely, muscle breakdown (myopathy)	Fibrates can cause muscle pain on their own. The risk rises sharply if gemfibrozil is combined with a statin. Fenofibrate does not carry this same added risk.
Renal: A rise in creatinine	Fibrates commonly nudge the creatinine blood test upward. This is usually a reversible lab effect, not true kidney failure. Your care team still monitors it.
Hematologic: A stronger effect from warfarin	Fibrates can increase the blood-thinning effect of warfarin. That raises bleeding risk. Your care team may check your levels, called INR, more often and adjust your dose.
Pancreatic and vascular: Uncommon trial signals	In the FIELD trial, fenofibrate was linked to slightly more reported pancreatitis (0.8% vs 0.5%) and lung blood clots (1.1% vs 0.7%) than placebo. These were uncommon, but worth knowing about.

About that creatinine bump: many patients get scared when a routine blood test shows creatinine rising after starting a fibrate. In most people, this is just a reversible change in the lab number itself. It is not a sign your kidneys are failing. Your care team still checks it. A true drop in kidney function is a reason to adjust or stop the drug. But a small, stable rise is common and expected.

Points to Know

If you remember nothing else, remember these key points.

- Never combine gemfibrozil with a statin. Fenofibrate is the fibrate to use if you also take a statin.
- A falling triglyceride number does not automatically mean a falling heart attack risk. The largest modern trial (PROMINENT) proved this directly.
- The main proven modern use for a fibrate is preventing pancreatitis when triglycerides are very high, not preventing heart attacks.
- A rise in your creatinine blood test on a fibrate is usually reversible and not true kidney damage.
- Tell your care team about gallbladder disease, liver disease, kidney disease, or warfarin use before starting.
- Get your recommended blood work done: kidney function, liver enzymes, and a follow-up lipid panel.
- Diet, alcohol limits, weight loss, and exercise lower triglycerides too, sometimes enough on their own.

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.

- Muscle pain, weakness, or dark, cola-colored urine. Call us today. This can be a sign of serious muscle breakdown, especially if you also take a statin.
- Pain under your right ribs, yellowing of the skin or eyes, or unusual tiredness. Call us this week. This can be a sign of a liver effect.
- Severe belly pain that spreads to your back, especially with nausea or vomiting. Call 911 or go to the ER. This can be pancreatitis, even while taking a fibrate.
- Sudden gallstone symptoms, such as sharp pain in the upper right belly after eating. Call us.
- New or worse bruising or bleeding while you also take warfarin. Call us. Your warfarin dose may need adjusting.
- A bad allergic reaction (hives, swelling, trouble breathing). Call 911.
- You are pregnant or plan to become pregnant. Call us before continuing this medicine.
- You have not had your follow-up blood work done. Call to schedule it.

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Related Guides From Our Practice

- For the full picture on triglyceride ranges, causes, and lifestyle treatment, see our Triglycerides guide.
- For the one triglyceride-lowering drug with a proven heart-attack and stroke benefit, see our Icosapent Ethyl guide.
- For the LDL-lowering drug family fibrates are so often confused with, see our Statin Therapy guide.
- If muscle pain is part of your story, see our Statin-Associated Muscle Symptoms guide, which also covers muscle symptoms from non-statin drugs like fibrates.
- For the basics of LDL, HDL, and how cholesterol numbers fit together, see our Understanding Cholesterol guide.

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.

- AHA - Triglycerides - AHA's plain-language overview of triglycerides and what the numbers mean.
- Cleveland Clinic - High Triglycerides - Patient guide covering causes, ranges, and treatment options, including medicines.
- Mayo Clinic - Triglycerides - Clear explanation of triglyceride ranges and lifestyle steps.
- NIH MedlinePlus - Triglycerides - Federal patient resource with triglyceride basics and screening information.
- National Lipid Association - Patient Tools - Patient education on lipid management, including non-statin add-on therapy.

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.

- WHO Cooperative Trial, clofibrate primary prevention: mortality follow-up (Committee of Principal Investigators, Lancet 1980;2(8191):379-85; PMID 6105515) *[Clinical Trial]*
  First fibrate outcome trial. 25% more deaths in the clofibrate group than the high-cholesterol control group (p<0.01) despite cholesterol lowering; opens the guide's history arc.
- WHO Cooperative Trial, clofibrate: final mortality follow-up (Committee of Principal Investigators, Lancet 1984;2(8403):600-4; PMID 6147641) *[Clinical Trial]*
  13.2-year extended follow-up: 11% more deaths overall in the clofibrate group; the excess (47% during treatment vs 5% after) did not persist once the drug was stopped, but was never explained.
- Helsinki Heart Study: primary-prevention trial with gemfibrozil in dyslipidemic men (Frick et al., N Engl J Med 1987;317(20):1237-45; PMID 3313041) *[Clinical Trial]*
  Positive primary-prevention trial: gemfibrozil cut CHD incidence 34.0% (27.3 vs 41.4 per 1,000, 95% CI 8.2-52.6%, p<0.02) in 4,081 men; pre-statin era.
- Gemfibrozil for the secondary prevention of coronary heart disease in men with low HDL cholesterol - VA-HIT (Rubins et al., N Engl J Med 1999;341(6):410-8; PMID 10438259) *[Clinical Trial]*
  Positive secondary-prevention trial: gemfibrozil cut nonfatal MI/CHD death 22% (95% CI 7-35%, p=0.006) in 2,531 men with CHD and low HDL; TG -31%, HDL +6%, LDL unchanged at 1 year.
- Effects of long-term fenofibrate therapy on cardiovascular events in 9,795 people with type 2 diabetes (FIELD study) (Keech et al., Lancet 2005;366(9500):1849-61; PMID 16310551) *[Clinical Trial]*
  Missed its primary coronary-event endpoint (11% RRR, HR 0.89, 95% CI 0.75-1.05, p=0.16), confounded by unequal statin drop-in (17% placebo vs 8% fenofibrate, p<0.0001); secondary total-CVD-events reduction was significant (HR 0.89, p=0.035). Slight increases in pancreatitis (0.5% vs 0.8%, p=0.031) and pulmonary embolism (0.7% vs 1.1%, p=0.022) with fenofibrate.
- Effect of fenofibrate on the need for laser treatment for diabetic retinopathy - FIELD study (Keech et al., Lancet 2007;370(9600):1687-97; PMID 17988728) *[Clinical Trial]*
  Prespecified FIELD substudy: fenofibrate cut the need for laser treatment for diabetic retinopathy (3.4% vs 4.9%, HR 0.69, 95% CI 0.56-0.84, p=0.0002), a genuine microvascular benefit independent of the cardiovascular result.
- Effects of combination lipid therapy in type 2 diabetes mellitus - ACCORD-Lipid (ACCORD Study Group, N Engl J Med 2010;362(17):1563-74; PMID 20228404) *[Clinical Trial]*
  Fenofibrate added to open-label simvastatin: no significant reduction in the primary CV composite (HR 0.92, 95% CI 0.79-1.08, p=0.32) in 5,518 people with type 2 diabetes. A prespecified high-triglyceride/low-HDL subgroup showed a possible benefit, but the treatment-by-subgroup interaction (p=0.057) did not reach significance, i.e. hypothesis-generating only.
- Triglyceride Lowering with Pemafibrate to Reduce Cardiovascular Risk - PROMINENT (Das Pradhan et al., N Engl J Med 2022;387(21):1923-34; PMID 36342113) *[Clinical Trial]*
  The guide's central teaching trial. Pemafibrate lowered triglycerides 26.2% and apoC-III 27.6% at 4 months, yet the primary CV composite outcome was unchanged (HR 1.03, 95% CI 0.91-1.15) in 10,497 people with diabetes, high triglycerides, and low HDL, exactly the population theorized to benefit. ApoB rose 4.8% instead of falling. No benefit in any prespecified subgroup.

- Cardiovascular Risk Reduction with Icosapent Ethyl for Hypertriglyceridemia - REDUCE-IT (Bhatt et al., N Engl J Med 2019;380(1):11-22; PMID 30415628) *[Clinical Trial]*
  Contrast trial (not a fibrate): a different triglyceride-lowering drug, icosapent ethyl, reduced the primary CV composite 25% (17.2% vs 22.0%, HR 0.75, 95% CI 0.68-0.83, p<0.001) in a similar statin-background population. Used to show the guide's lesson is evidence-per-drug, not a blanket dismissal of triglyceride-lowering therapy.
- The peroxisome proliferator activated receptors (PPARs) and their effects on lipid metabolism (Schoonjans, Staels, Auwerx, Biochim Biophys Acta 1996;1302(2):93-109; PMID 8695669) *[Mechanism Review]*
  Primary mechanistic source: PPAR-alpha activation raises apoA-I/apoA-II (HDL), increases LPL-driven lipolysis and remnant clearance via changes in LPL and apoC-III, and reduces VLDL production and triglyceride synthesis while inducing fatty-acid beta-oxidation.
- Drug interactions with lipid-lowering drugs: mechanisms and clinical relevance (Neuvonen, Niemi, Backman, Clin Pharmacol Ther 2006;80(6):565-81; PMID 17178259) *[Mechanism Review]*
  Verifies the gemfibrozil-statin mechanism: gemfibrozil and its glucuronide metabolite inhibit OATP1B1 and CYP2C8, raising statin blood levels and myotoxicity risk. Source for the guide's single most actionable safety line.
- Statin safety and drug interactions: clinical implications (Bottorff, Am J Cardiol 2006;97(8A):27C-31C; PMID 16581325) *[Mechanism Review]*
  Independent confirmation: gemfibrozil inhibits statin glucuronidation and biliary excretion, significantly raising myopathy and rhabdomyolysis risk when combined with a statin.
- Combinations of statins and fibrates: pharmacokinetic and clinical implications (Gonzalez Santos, Clin Investig Arterioscler 2014;26 Suppl 1:7-11; PMID 25043540) *[Mechanism Review]*
  Third independent confirmation of the gemfibrozil-statin interaction; explicitly recommends fenofibrate as the fibrate of choice when a statin must be combined.
- Evaluation and treatment of hypertriglyceridemia: an Endocrine Society clinical practice guideline (Berglund et al., J Clin Endocrinol Metab 2012;97(9):2969-89; PMID 22962670) *[Guideline]*
  Source for the triglyceride-severity framework: mild-to-moderate (150-999 mg/dL) is evaluated for cardiovascular risk; severe/very severe (over 1,000 mg/dL) is a pancreatitis risk for which 'a fibrate should be used as a first-line agent.'
- Triglycerides, atherosclerosis, and cardiovascular outcome studies: focus on omega-3 fatty acids (Handelsman, Shapiro, Endocr Pract 2016;23(1):100-112; PMID 27819772) *[Review]*
  Confirms that fenofibrate and niacin are 'no longer recommended as statin add-on therapy (by some guidelines) because of the lack of convincing evidence from outcome studies,' supporting the guide's current-status framing.
- AHA Patient Page - Triglycerides *[Patient Education]*
  Plain-language patient overview of triglycerides; benchmark and trusted resource. Same URL already in production use in this practice's Triglycerides guide.
- Cleveland Clinic - High Triglycerides *[Patient Education]*
  Patient-facing overview of hypertriglyceridemia causes, ranges, and treatment; benchmark and trusted resource.
- Mayo Clinic - Triglycerides *[Patient Education]*
  Patient-facing overview of triglyceride ranges and lifestyle steps; benchmark and trusted resource.
- NIH MedlinePlus - Triglycerides *[Patient Education]*
  Federal patient resource on triglyceride basics and screening; trusted resource.

- National Lipid Association - Patient Tools *[Patient Education]*
  NLA patient education on lipid management, including non-statin add-on therapy; trusted resource.

About This Guide

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Reviewer note: Reviewed against the AHA, Mayo Clinic, Cleveland Clinic, and MedlinePlus triglyceride pages. Ours adds three things they do not have. A six-trial evidence chart, spanning 1980 to 2022. A triglyceride-tier chart. And a clear gemfibrozil-statin danger table.

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.

Take This Guide With You

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