Understanding Anticoagulation Bridging

Covering you with a short-acting blood thinner when your usual one is paused

Bridging fills a short gap around a procedure. Most people do not need it. Never change a thinner on your own.

Online: https://go.riasalimd.com/anticoag-bridge-guide

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Names & Terms You Will Hear

Term	Meaning
Bridging (bridge therapy)	Using a short-acting injectable blood thinner to cover you while your usual, longer-acting one is paused for surgery or a procedure.
Anticoagulant	A blood thinner. It slows clotting to prevent strokes and dangerous clots. Warfarin, apixaban, rivaroxaban, and dabigatran are all anticoagulants.
Warfarin (Coumadin)	An older blood thinner taken as a pill. It takes days to wear off and days to build back up, so its gap may need bridging.
Heparin / LMWH	Short-acting blood thinners. Low molecular weight heparin (such as enoxaparin) is given as a shot under the skin and is used for the bridge.
DOAC	Direct oral anticoagulant. The newer pills: apixaban, rivaroxaban, dabigatran, and edoxaban. They wear off fast, so they are usually just held and do not need bridging.
Periprocedural	Around the time of a procedure: the days before, the day of, and the days after.
INR	A blood test that shows how thin warfarin has made your blood. The team checks it before a procedure to confirm the thinner has worn off.
Thromboembolism	A clot that forms and can travel, causing a stroke or blocking blood flow. Preventing this is why you take a blood thinner.
Mechanical heart valve	A man-made metal valve. It carries a high clot risk, so people with one usually do need a bridge.

Never change a blood thinner on your own. Do not stop, start, skip, or double a dose before a procedure unless your care team tells you to. The timing is exact and personal. Stopping at the wrong time can cause a stroke; staying on at the wrong time can cause heavy bleeding. Always follow your written plan, and call us if anything is unclear.

What Is Anticoagulation Bridging?

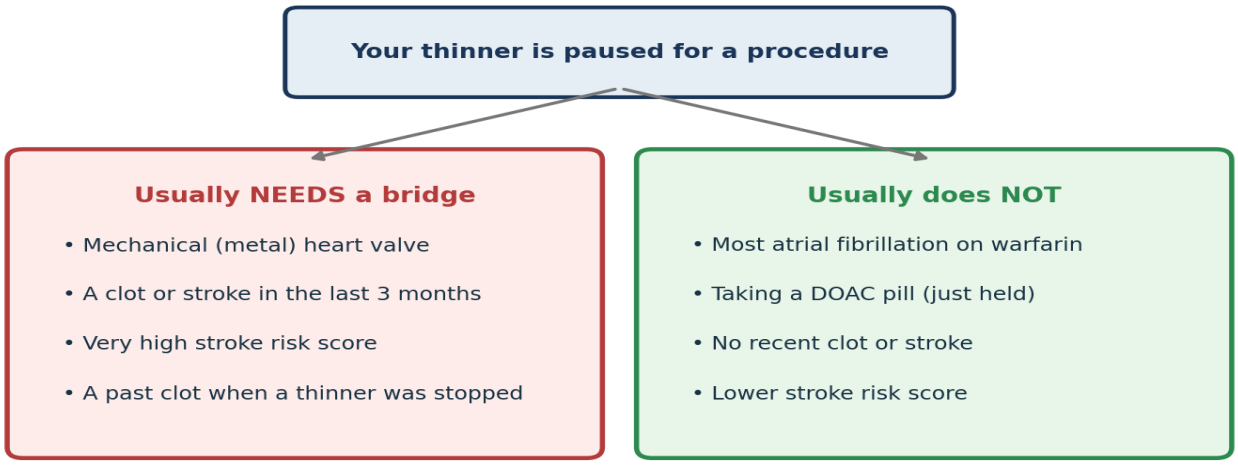
- Blood thinners (anticoagulants) lower your risk of stroke and dangerous clots. Before some surgeries or procedures, your team may pause the thinner so you do not bleed too much.
- Bridging means covering that gap with a short-acting blood thinner, most often a heparin shot (low molecular weight heparin) given under the skin.
- The idea is simple: warfarin takes days to wear off and days to build back up. A short-acting shot can be started and stopped quickly, so it 'bridges' the days when warfarin is too low.
- Bridging is only for some people. The big question is your clot risk while the thinner is paused. High clot risk leans toward bridging. Lower clot risk usually means no bridge.
- The newer pills (DOACs) clear from the body fast. They are usually just held for a day or two before the procedure and do not need a bridge at all.
- Your team weighs two risks against each other: bleeding from the procedure and a clot from being off the thinner. Bridging is chosen only when the clot risk is high enough to be worth the extra bleeding risk.

Each Blood Thinner: How It Is Held and Whether a Bridge Is Usual

Blood Thinner	Type	Usual Hold Before Procedure	Bridge Usually Needed?
Warfarin (Coumadin)	Pill (slow)	Stop about 5 days before	Only if clot risk is high
Apixaban (Eliquis)	DOAC pill	Hold 1 to 2 days before	No
Rivaroxaban (Xarelto)	DOAC pill	Hold 1 to 2 days before	No
Dabigatran (Pradaxa)	DOAC pill	Hold 1 to 2 days (longer if kidneys are weak)	No
Heparin / LMWH shot	Short-acting shot	Last dose about 24 hours before	This IS the bridge

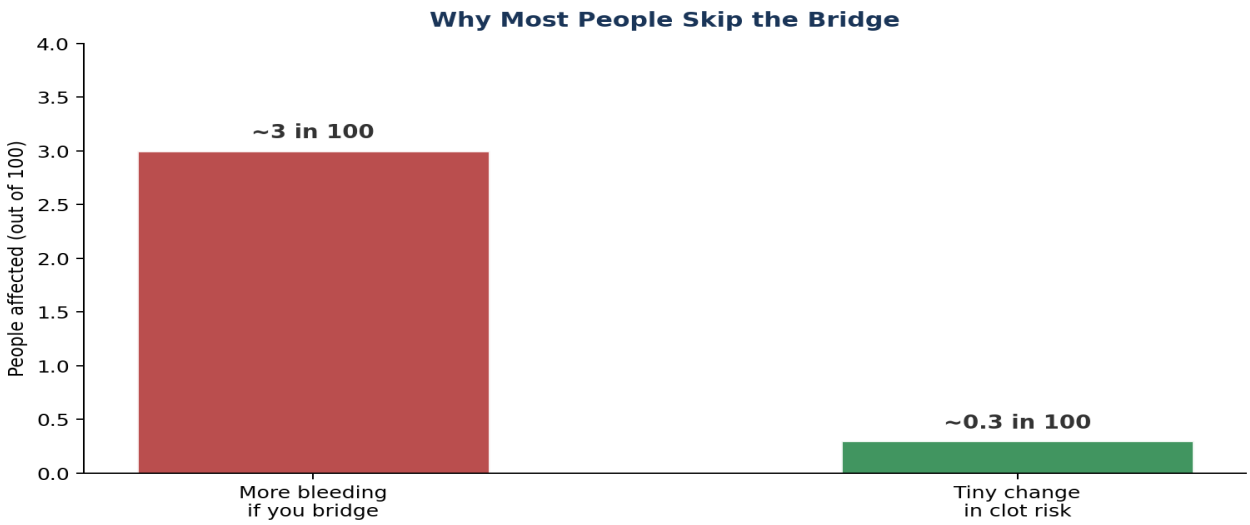
Why It Matters

- Bridging is not free. The short-acting shot keeps your blood thin around the procedure, so it raises the chance of bleeding. For most people, that bleeding risk is bigger than any clot benefit.
- The BRIDGE trial settled this for atrial fibrillation. People on warfarin for atrial fibrillation did just as well without a bridge, and they had less major bleeding. Most of them do not need one.
- But some people truly do need a bridge. A mechanical (metal) heart valve, a clot or stroke in the last 3 months, or a very high stroke risk score all push toward bridging.
- The PAUSE study showed DOAC pills can be simply held a day or two and restarted, with no bridge and no routine blood test. This keeps things simple and safe.
- Getting the plan right protects you both ways: too much thinning means bleeding during surgery, too little means a stroke or clot. The right plan threads that needle.
- This is why you should never stop, start, or change a blood thinner on your own. The timing is exact and personal. Always follow the written plan your team gives you.



The BRIDGE trial showed most people with atrial fibrillation did just as well without a bridge, with less bleeding.

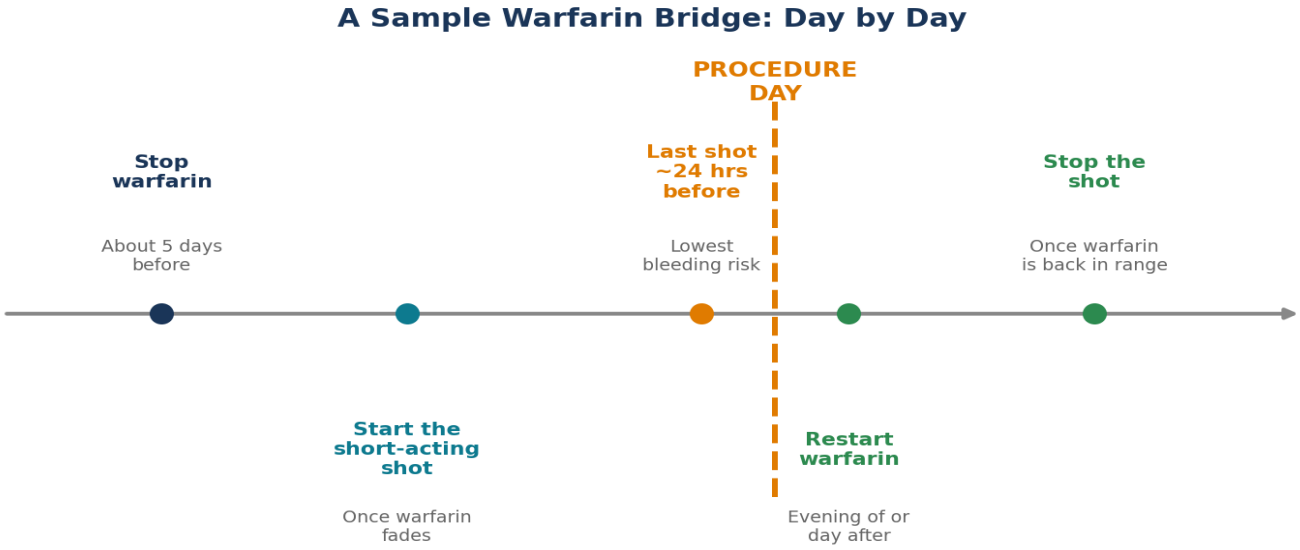
Who usually needs a bridge versus who usually does not. The choice turns on your clot risk while the thinner is paused, not on which thinner you take.



Why most people skip the bridge: bridging adds bleeding for many people but changes the clot risk only a little. Your team weighs both for your case.

Treatment Options

- First, your team decides if you need a bridge at all. They look at why you take the thinner, your clot risk, and how much the procedure tends to bleed.
- If you take warfarin and need a bridge: warfarin is stopped about 5 days before so the INR can fall. A short-acting heparin shot is started as warfarin fades.
- The last shot is given about 24 hours before the procedure. This short gap lets your blood clot well during surgery while keeping the off-thinner time as short as possible.
- If you take warfarin and do not need a bridge: warfarin is simply stopped about 5 days ahead and restarted after, with no shots in between.
- If you take a DOAC (apixaban, rivaroxaban, or dabigatran): the pill is usually just held for a day or two before, based on the drug, your kidneys, and the bleeding risk of the procedure. No bridge is needed.
- After the procedure, the thinner is restarted once bleeding is controlled, often the same evening or the next day. If you were bridged, the shot continues until warfarin is back in range, then it is stopped.
- The timeline and decision diagrams below show how a bridge is timed and who actually needs one.



A sample warfarin bridge, day by day: stop warfarin about 5 days before, start the shot as it fades, last shot about 24 hours before, then restart.

When You Usually DO Need a Bridge

- A mechanical (metal) heart valve. These carry a high clot risk, so the gap off warfarin is usually bridged with a shot.
- A blood clot or stroke in the last 3 months. The risk of another clot is highest soon after the first, so protection is kept nearly continuous.
- A very high stroke risk score from atrial fibrillation, especially with a past stroke or clot when a thinner was stopped before.
- Certain inherited or strong clotting conditions that your team has already flagged as high risk.
- Even then, the bridge is timed tightly: the last shot is about 24 hours before the procedure to keep bleeding risk low.

When You Usually Do NOT Need a Bridge

- Most atrial fibrillation on warfarin. The BRIDGE trial showed these patients did just as well without a bridge and had less bleeding.
- Any DOAC pill (apixaban, rivaroxaban, dabigatran). These wear off fast, so they are simply held a day or two and restarted, no bridge needed.
- A lower stroke risk score and no recent clot or stroke. The short window off the thinner carries little extra risk.
- Minor procedures with very low bleeding risk, where the thinner may not even need a full stop, only your team can decide this.
- In these cases, skipping the bridge means less bleeding and a simpler plan, with no loss of safety.

How a DOAC Is Handled (No Bridge)

- DOACs (apixaban, rivaroxaban, dabigatran) leave the body in about a day, so there is no long gap to bridge.
- The pill is usually held for 1 to 2 days before the procedure. The exact timing depends on the drug, your kidney function, and how much the procedure tends to bleed.
- Dabigatran is held a bit longer if your kidneys are weak, because the kidneys clear it.
- No bridge and no routine blood test are needed. The PAUSE study showed this simple approach is safe.
- The pill is restarted once bleeding is controlled, often within a day or two after the procedure.

Comfort Measures at Home (No Medication Needed)

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

- Carry your written blood-thinner plan to every appointment. It should list the drug, the dose, the stop date, and the restart date.
- Tell every doctor and dentist that you take a blood thinner well before any procedure, even a cleaning or minor skin surgery, so the plan can be made in time.
- If you are bridged, ask your team or a nurse to show you how to give the shot under the skin, and where. Most people learn it quickly.
- Keep your pharmacy and cardiology office numbers in your phone so you or a helper can confirm your exact plan fast.
- Mark your stop and restart dates on a calendar or phone reminder so no dose is missed or doubled.
- Bring your pill bottles and any shot supplies to the procedure so the care team can confirm your exact medicines.

Risks, Benefits, and Alternatives

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

Option	Risks	Benefits	Alternatives
Bridge with a short-acting shot	Raises bleeding risk around the procedure. More bruising and, rarely, major bleeding. Adds the cost and effort of daily shots.	Keeps clot protection nearly continuous. Important for a mechanical valve, a very recent clot, or very high stroke risk.	No bridge (for lower-risk people). Holding a DOAC instead of using warfarin in some cases.
No bridge — just hold the thinner	A small window of higher clot risk while the thinner is low. Best only when your clot risk is not high.	Much less bleeding. Simpler and proven safe for most atrial fibrillation in the BRIDGE trial.	Bridge with a shot (if your clot risk is high). Shorten the off-thinner window where possible.
Hold a DOAC pill (no bridge)	Timing depends on your kidneys and the procedure. Holding too long adds clot risk; too short adds bleeding risk.	Fast and simple. The PAUSE study showed it is safe with no bridge and no routine blood test.	Switch to a planned warfarin-and-bridge approach (rarely needed). Delay non-urgent procedures.
Delay the procedure	Not always possible. The condition needing surgery may get worse with waiting.	Lets a very recent clot or stroke settle, lowering the risk of stopping the thinner.	Proceed with a carefully timed bridge. Proceed with no bridge if risk is acceptable.

Common Misconceptions

Myth	Reality
Everyone on a blood thinner needs a bridge before surgery.	Not true. Most people, including most with atrial fibrillation, do not. The BRIDGE trial showed they did just as well without one and bled less. Bridging is for higher clot risk only.
Bridging is the safer choice because it keeps me protected.	Bridging trades one risk for another. It keeps clot protection but raises bleeding. For most people the extra bleeding risk outweighs the small clot benefit.
My DOAC pill needs a bridge too.	No. DOACs (apixaban, rivaroxaban, dabigatran) wear off fast. They are usually just held for a day or two and restarted, with no bridge and no routine blood test.
I can stop my blood thinner myself a few days before and be fine.	Never stop, start, or change a thinner on your own. The timing is exact and personal. The wrong timing can cause a stroke or heavy bleeding. Always follow your team's written plan.
Aspirin counts as the blood thinner that gets bridged.	Aspirin and clopidogrel are antiplatelet drugs, not anticoagulants. They are managed differently. Tell your team about every blood medicine you take so nothing is missed.
Once I stop warfarin, my blood is thin and clot-free for weeks.	Warfarin wears off over about 5 days, and your clot risk returns as it fades. That is exactly why timing and, when needed, a bridge matter.
If I have a mechanical valve, the rules are the same as for atrial fibrillation.	No. A mechanical (metal) valve carries a high clot risk, so people with one usually do need a bridge. The right plan depends on your exact situation.

Possible Complications

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

Where / What	What Can Happen
Bleeding from the bridge	The short-acting shot keeps your blood thin, so bridging raises the chance of bleeding around the procedure. This ranges from extra bruising to, rarely, major bleeding that needs care.
A clot or stroke from being off the thinner	While the thinner is paused, clot protection drops. A clot, heart attack, or stroke can form. This is the risk a bridge is meant to lower in high-risk people.
Wrong timing of the stop or restart	Stopping too early or restarting too late widens the unprotected window. Stopping too late or restarting too soon raises bleeding. Exact timing from your team prevents both.
Bruising or soreness at the shot site	Heparin shots under the skin can leave bruises or tender spots. This is common, usually mild, and not dangerous. Rotating the shot site helps.
Changes self-managed without the team	The most preventable problem is changing a thinner on your own. A missed, doubled, or mistimed dose can cause bleeding or a clot. Always follow the written plan.

Points to Know

If you remember nothing else, remember these key points.

- Bridging covers a short gap with a fast-acting shot while your usual thinner is paused for a procedure.
- Most people do not need a bridge. Most atrial fibrillation on warfarin did just as well without one, with less bleeding (the BRIDGE trial).
- You usually DO need a bridge with a mechanical heart valve, a clot or stroke in the last 3 months, or a very high stroke risk.
- DOAC pills (apixaban, rivaroxaban, dabigatran) are usually just held a day or two and do not need a bridge.
- Bridging trades less clot risk for more bleeding risk. Your team chooses only when the clot risk is high enough.
- Never stop, start, or change a blood thinner on your own. Follow the exact written plan your team gives you.
- Tell every doctor and dentist you take a blood thinner before any procedure, even a dental cleaning.

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.

- You are not sure whether to take your blood thinner before a procedure — call us before changing anything.
- Heavy bleeding that will not stop after 10 minutes of firm pressure — call 911 or go to the ER.
- Any head injury while on a blood thinner, even a minor bump — call 911 (a brain bleed can be silent at first).
- Vomiting blood, coughing up blood, or black or tarry stools — go to the ER now.
- Red or pink urine, or a lot of blood from any site — call us today or go to the ER.
- Severe headache, weakness, trouble speaking, or confusion — call 911 (possible stroke or bleeding in the brain).
- A planned surgery or dental procedure is coming up — call us in advance so we can make your thinner plan in time.
- A shot site that is very swollen, red, or painful, or a bruise that keeps growing — call the office.

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See our companion guides. For what happens if you bleed on a thinner, read our Anticoagulation Reversal guide. For warfarin and INR testing, read our Warfarin and INR guide. For switching between thinners, see our DOAC switching guide. If you take apixaban, read our Eliquis guide. If you have a mechanical valve, read our Living with a Prosthetic Valve 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.

- Cleveland Clinic — Anticoagulants (Blood Thinners) - Plain-language overview of blood thinners and stopping them around procedures.
- MedlinePlus — Taking Blood Thinners Before Surgery or a Procedure - NIH plain-language instructions on stopping and restarting blood thinners for surgery.
- Mayo Clinic — Warfarin Side Effects and Bleeding Risk - Patient guide to warfarin, INR, and bleeding warning signs.
- American Heart Association — Anticoagulant and Antiplatelet Drugs - AHA patient page on how blood thinners work and how to stay safe on them.

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.

- BRIDGE Trial — Perioperative Bridging Anticoagulation in Atrial Fibrillation (Douketis, NEJM 2015) *[Trial]*
  Landmark randomized trial showing no-bridging was noninferior for clots and reduced major bleeding in most AF patients on warfarin.
- PAUSE Study — Perioperative Management of Patients on DOACs (Douketis, JAMA Intern Med 2019) *[Trial]*
  Prospective cohort showing DOACs can be safely held a day or two without bridging or routine testing.
- 2017 ACC Periprocedural Anticoagulation Decision Pathway (Doherty, JACC 2017) *[Guideline]*
  Expert decision pathway for who needs bridging, hold timing, and restart timing.
- CHEST Guideline — Perioperative Management of Antithrombotic Therapy (Douketis, 2022) *[Guideline]*
  Current CHEST recommendations on bridging vs not bridging by thromboembolic risk.
- PERIOP2 — Postoperative LMWH Bridging After Mechanical Valve or AF (Kovacs, BMJ 2021) *[Trial]*
  Tested a postoperative bridging strategy; supports reserving bridging for truly high-risk patients.
- Cleveland Clinic — Anticoagulants (Blood Thinners) *[Patient-Education]*
  Plain-language overview of blood thinners and stopping them around procedures.
- Mayo Clinic — Warfarin Side Effects and Bleeding Risk *[Patient-Education]*
  Patient guidance on warfarin, INR, and bleeding risk relevant to the bridging gap.
- MedlinePlus — Taking Blood Thinners Before Surgery or a Procedure *[Patient-Education]*
  NIH plain-language instructions on stopping and restarting blood thinners for surgery.
- American Heart Association — Anticoagulant and Antiplatelet Drugs *[Patient-Education]*
  AHA patient page on anticoagulant therapy and safety.
- MedlinePlus — Enoxaparin (Low Molecular Weight Heparin) Injection *[Patient-Education]*
  Patient instructions on the injectable short-acting heparin used during a bridge.

About This Guide

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Reviewer note: Reviewed: Cleveland Clinic, Mayo Clinic, and MedlinePlus patient pages. This guide adds a who-needs-a-bridge decision split, a day-by-day bridge timeline, a bleeding-vs-clotting balance chart, a color-coded drug hold table, and an RBA section using the BRIDGE, PAUSE, and PERIOP2 trials by name.

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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