TRAUMA · PATIENT GUIDE

Do All Fractures *Need Surgery?*

Many broken bones heal beautifully in a cast. Here is how surgeons decide when an operation actually helps.

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Key Takeaways

- **Most fractures do not need surgery.** A stable, well-aligned break often heals in a cast or splint.
- Surgery is for fractures that are **displaced, unstable, into a joint, open, or in a high-risk bone** like the hip.
- Healing commonly takes **6 to 12 weeks**, faster in children, slower in weight-bearing bones.
- **Smoking slows healing.** Stopping is one of the few things genuinely in your control.

"Doctor, will I need an operation?" It is the first thing almost everyone asks when I tell them a bone is broken, usually braced for the worst. The honest and reassuring answer is that for a great many fractures, the answer is no. A cast and time will do the job. Surgery is a powerful tool, but it is not the default. It is chosen when it gives a clearly better result than letting the bone heal in a cast.

So let me explain what actually tips a fracture from the cast column into the surgery column, and what you can do to help any broken bone mend well.

How a bone heals, with or without surgery

Whatever the treatment, your body does the healing, not the surgeon. When a bone breaks, the body forms a soft repair tissue between the fragments, then gradually turns it into hard bone over weeks to months. The job of any treatment is simply to hold the broken ends still and in a good position while that natural process happens. A cast does this from the outside. Surgery does it from the inside, with plates, screws or a nail. Neither one "heals" the bone. They both just hold it steady so the bone can heal itself.

That reframing matters, because it explains the whole decision. If the broken ends are already in a good position and will stay there, a cast is enough. If they are not, or will not, that is when we reach for surgery.

When a cast is the right answer

Plenty of common fractures heal very well without an operation. A broken collarbone often heals in a sling. Many wrist fractures, especially when the bones are still well aligned, heal in a cast. Stable fractures of the hand, foot, and forearm in children very frequently do not need surgery at all. The shared feature is that the fracture is stable and well positioned, so holding it still from the outside gives an excellent result.

In these cases, surgery would add risk, an anaesthetic, a wound, the small chance of infection, without adding benefit. Recommending a cast here is not the cheaper or lazier option. It is simply the better medicine.

> A cast holds the bone from the outside; surgery holds it from the inside. The question is never "which is stronger?" It is "which will hold this particular bone still in a good position?"

When surgery genuinely helps

There are clear situations where an operation gives a better outcome, and where I would recommend it without hesitation:

- **The fracture is badly displaced.** If the broken ends have shifted out of position and cannot be held in alignment by a cast, fixing them surgically restores the shape of the bone.
- **The fracture is unstable.** Some breaks will simply slip back out of position inside a cast. Fixation holds them.

- **The fracture goes into a joint.** A break that crosses a joint surface needs to be lined up very precisely, because even small steps in the cartilage can lead to early arthritis. These usually need surgery.
- **The skin is broken (an open fracture).** When bone has pierced the skin, there is a real infection risk, and these need urgent surgical cleaning and stabilisation.
- **It is a bone where lying still is dangerous,** like the hip in an older person, where surgery lets the patient stand and walk quickly rather than waiting in bed.

How long healing takes

People always want a number, so here is an honest range. Many fractures take roughly six to twelve weeks to unite, but it varies a lot by bone and by person. Small bones in the hand or foot can heal in a few weeks. Large weight-bearing bones take longer. Children heal markedly faster than adults. A cast usually stays on for several weeks, with X-rays along the way to confirm the bone is knitting before you load it.

> The one thing in your control
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> Most of fracture healing is biology you cannot rush. But you can avoid sabotaging it. According to a systematic review and meta-analysis indexed on PubMed, smoking is associated with a higher rate of non-union and delayed union, and a longer time to healing, in fractures of the tibia, the most commonly broken long bone. If you do one thing for your broken bone, stopping smoking is it. Good blood sugar control, adequate protein, calcium and vitamin D help too.

What if a fracture does not heal?

The vast majority of fractures heal as expected. Occasionally one heals slowly (delayed union), heals in a poor position (malunion), or does not join at all (non-union). These are uncommon, and they are not the end of the road: they can usually be treated, sometimes with surgery to encourage or realign the healing. The bones at higher risk, and patients with risk factors like smoking or poorly controlled diabetes, are watched more closely for exactly this reason.

The bottom line

Do not assume a broken bone means an operation. Many fractures heal wonderfully in a cast, and choosing the cast is often the wiser, safer decision. Surgery earns its place when the fracture is displaced, unstable, involves a joint, breaks the skin, or sits in a bone where early movement is vital. If a surgeon recommends an operation, ask what it would achieve that a cast would not. A good one will have a clear answer.

The evidence behind this article

Journal findings retrieved via PubMed.

1. Mahajan A, Kumar N, Gupta B. Delayed Tibial Shaft Fracture Healing Associated with Smoking: A Systematic Review and Meta-Analysis of Observational Studies Conducted Worldwide. *International Journal of Environmental Research and Public Health*, 2021. Smoking was associated with increased non-union, delayed union and longer time to union in tibial shaft fractures, the most common long-bone fracture. doi.org/10.3390/ijerph181910228

Findings sourced via PubMed. Treatment thresholds, healing times and operative indications reflect standard orthopaedic practice and are general, not patient-specific. This article is educational and does not replace a consultation.

> **Dr. Vishnu's Perspective**
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> Patients are often surprised, and relieved, when I tell them their fracture does not need an operation. There is a belief that surgery is always the stronger choice. It is not. The best treatment is the one that gives your particular bone the best result with the least risk, and for a great many fractures, that is a well-applied cast and patience.

Frequently Asked Questions

Do all broken bones need surgery?

No. Many fractures heal very well in a cast or splint, especially when the bone pieces are still in good alignment and stable. Surgery is reserved for fractures that are badly displaced, unstable, involve a joint surface, break through the skin, or affect a bone like the hip where lying still is dangerous. A good orthopaedic surgeon recommends an operation only when it gives a clearly better result than a cast.

How does a surgeon decide between a cast and surgery?

The decision depends on which bone is broken, how far the pieces have moved, whether the fracture is stable, whether it enters a joint, the age and activity of the patient, and whether the skin is intact. A stable, well-aligned wrist or collarbone often heals in a cast or sling. A displaced fracture into a joint, or an unstable one that will not hold position, usually does better with fixation.

How long does a fracture take to heal in a cast?

It varies by bone and by person, but many fractures take roughly six to twelve weeks to unite, with smaller bones healing faster and weight-bearing bones taking longer. Children heal faster than adults. The cast holds the bone still while your body does the actual healing, so following cast and follow-up instructions closely matters.

What happens if a fracture does not heal properly?

Most fractures heal as expected, but a minority can heal slowly (delayed union) or fail to join (non-union), or heal in a poor position (malunion). These are uncommon, and they are treatable, often with surgery if needed. Risk is higher with certain bones, severe injuries, and modifiable factors like smoking, which is shown to slow fracture healing.

Can I make my fracture heal faster?

You cannot rush bone biology, but you can avoid slowing it down. Stop smoking, which is linked to delayed and failed healing; keep blood sugar controlled if you are diabetic; eat enough protein, calcium and vitamin D; and follow your surgeon's instructions on weight-bearing and follow-up X-rays. Do not remove a cast early or load the bone before you are told it is safe.

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