

# First to fourth metatarsal fractures — postoperative rehabilitation

Adults after plate, screw or wire fixation of first to fourth metatarsal fractures. The plan accounts for the number and location of fractures, stability and wires crossing joints.

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For clinicians, physiotherapists and patients. The individual plan based on the operative report takes precedence over the time ranges on this page.

## Essential protection

|                               |                                                                                                                                                                                                                              |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Weight-bearing</b>         | Protection without weight-bearing is often required for about 6 weeks. Earlier heel or whole-foot loading requires explicit construct-specific clearance. Do not independently replace non-weight-bearing with heel walking. |
| <b>Brace / immobilisation</b> | Splint, walking boot or prescribed postoperative shoe; the device itself does not determine permitted loading.                                                                                                               |
| <b>Range of motion</b>        | Move the ankle and unrestricted toes when cleared. Do not mobilise a joint crossed by a wire.                                                                                                                                |

## Rehabilitation at a glance

Timings are approximate. Progression requires criteria and clearance for the relevant motion or loading level.

**01****Protecting the forefoot****Weeks 0–2**

Protect the wound, fixation and bone alignment.

**02****Movement without loading****Weeks 2–6**

Maintain permitted joint movement while protecting union.

**03****Returning to walking****Usually weeks 6–12**

Gradually restore loading and reduce protection.

**04****Strength and activity****From around week 12; according to union**

Restore forefoot capacity and limb control.

# Full rehabilitation board

| POBOZY.ORG / POSTOPERATIVE REHABILITATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| First to fourth metatarsal fractures — postoperative rehabilitation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Adults after plate, screw or wire fixation of first to fourth metatarsal fractures. The plan accounts for the number and location of fractures, stability and wires crossing joints.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>01</b><br>Protecting the forefoot                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>02</b><br>Movement without loading                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>03</b><br>Returning to walking                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>04</b><br>Strength and activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Weeks 0–2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Weeks 2–6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Usually weeks 6–12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | From around week 12; according to union                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Tomasz Pobozy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Tomasz Pobozy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Tomasz Pobozy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Tomasz Pobozy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Positioning and swelling control</b><br><p>In lying or reclining, support the calf on broad cushions. Avoid pressure on the wound or heel. Keep the prescribed support in place; elevation does not replace safe mobilisation.</p> <p><b>Dose / practice:</b> Short periods of elevation after activity; change position regularly.</p> <p><b>Watch for:</b> Pressure, numbness, pale toes or pain under the support require assessment.</p>                                                                                                                                                                                                                                                                | <b>Active movement of unrestricted toes</b><br><p>Sit with the lower leg supported. Gently bend and straighten only toes cleared for movement. Do not mobilise a joint crossed by a wire. Avoid towel gripping and resistance in the early phase.</p> <p><b>Dose / practice:</b> For example, 5–10 gentle movements several times daily, without traction around wires or the wound.</p> <p><b>Watch for:</b> Fracture-site pain, pin-site discharge or a wire blocking motion requires review.</p> | <b>Protected gait training</b><br><p>Use the prescribed boot and two crutches. Take short steps, applying only the permitted load through the operated foot. A physiotherapist selects the gait pattern for that restriction; ground contact does not mean full weight-bearing.</p> <p><b>Dose / practice:</b> Short distances with rests; increase distance before speed. Do not abandon both crutches at once.</p> <p><b>Watch for:</b> Reduce distance and restore support if limping, pain or swelling increases.</p> | <b>Supported double-leg heel raise</b><br><p>After forefoot loading is permitted, stand in supportive shoes and hold a counter. Raise both heels a small distance and lower them slowly. Avoid rolling onto the outer borders of the feet or bouncing.</p> <p><b>Dose / practice:</b> For example, 1 set of 6–10 repetitions on alternate days, progressing to 2 sets after checking tolerance. No added weight initially.</p> <p><b>Watch for:</b> Fracture-site pain or increased swelling the following day indicates excessive loading.</p> |
| <b>Before starting</b><br><p>Protection without weight-bearing is often required for about 6 weeks. Earlier heel or whole-foot loading requires explicit construct-specific clearance. Do not independently replace non-weight-bearing with heel walking.</p> <p>Splint, walking boot or prescribed postoperative shoe; the device itself does not determine permitted loading. Move the ankle and unrestricted toes when cleared. Do not mobilise a joint crossed by a wire.</p> <p>Permission to move ≠ permission for resistance and full loading. Illustrations show selected activities; consult the full protocol for restrictions, criteria and warning signs. Doses are examples to individualise.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

Illustrations created for this protocol. A later-phase exercise is not permitted merely because it appears on the board.

## Exercises — take a closer look

4 phases • technique • dosage • when to stop

Each phase has its own illustration. The descriptions below are the text equivalent of the board. Doses are starting examples to individualise with a physiotherapist and do not override surgical restrictions.



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Phase 1 · Weeks 0–2

### Positioning and swelling control

In lying or reclining, support the calf on broad cushions. Avoid pressure on the wound or heel. Keep the prescribed support in place; elevation does not replace safe mobilisation.

#### Dose to individualise

Short periods of elevation after activity; change position regularly.

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#### When to reduce or stop

Pressure, numbness, pale toes or pain under the support require assessment.

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[Check this phase's restrictions and criteria →](#)



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Phase 2 · Weeks 2–6

### Active movement of unrestricted toes

Sit with the lower leg supported. Gently bend and straighten only toes cleared for movement. Do not mobilise a joint crossed by a wire. Avoid towel gripping and resistance in the early phase.

#### Dose to individualise

For example, 5–10 gentle movements several times daily, without traction around wires or the wound.

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#### When to reduce or stop

Fracture-site pain, pin-site discharge or a wire blocking motion requires review.

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[Check this phase's restrictions and criteria →](#)

## Exercises - continued



Phase 3 · Usually weeks 6–12

### Protected gait training

Use the prescribed boot and two crutches. Take short steps, applying only the permitted load through the operated foot. A physiotherapist selects the gait pattern for that restriction; ground contact does not mean full weight-bearing.

#### Dose to individualise

Short distances with rests; increase distance before speed. Do not abandon both crutches at once.

#### When to reduce or stop

Reduce distance and restore support if limping, pain or swelling increases.

Check this phase's restrictions and criteria →



Phase 4 · From around week 12;  
according to union

### Supported double-leg heel raise

After forefoot loading is permitted, stand in supportive shoes and hold a counter. Raise both heels a small distance and lower them slowly. Avoid rolling onto the outer borders of the feet or bouncing.

#### Dose to individualise

For example, 1 set of 6–10 repetitions on alternate days, progressing to 2 sets after checking tolerance. No added weight initially.

#### When to reduce or stop

Fracture-site pain or increased swelling the following day indicates excessive loading.

Check this phase's restrictions and criteria →

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## Who this protocol is for

Adults after plate, screw or wire fixation of first to fourth metatarsal fractures. The plan accounts for the number and location of fractures, stability and wires crossing joints.

Excludes Lisfranc injury, fifth metatarsal fractures, open fractures and neuropathic feet. These require a different pathway.

Before starting, confirm the operation date and extent, fixation, permitted loading, support-removal rules, range of motion and review date. Obtain any missing instruction from the surgeon before progressing.

# Full programme by phase

## 01 · Protecting the forefoot

Weeks 0–2

|                                 |                                                                                                                                     |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                     | Protect the wound, fixation and bone alignment.                                                                                     |
| <b>Weight-bearing</b>           | Usually non-weight-bearing with two crutches or an appropriate alternative. Any exception must be documented in the discharge plan. |
| <b>Support / immobilisation</b> | Surgeon-prescribed splint/dressing or boot. Keep dressings and pin sites dry.                                                       |
| <b>Motion</b>                   | Move the knee and hip freely. Gently move unrestricted toes if cleared; do not move a joint crossed by a wire.                      |
| <b>Work in this phase</b>       | Elevation, safe short-distance mobility and thigh exercises without forefoot loading.                                               |
| <b>Progression criteria</b>     | Wound and pin-site assessment, safe mobility and a clear loading plan.                                                              |

See the exercise or activity for this phase →

## 02 · Movement without loading

Weeks 2–6

|                                 |                                                                                                                                  |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                     | Maintain permitted joint movement while protecting union.                                                                        |
| <b>Weight-bearing</b>           | Continue the prescribed protection. A common cautious pathway remains non-weight-bearing until review around week 6.             |
| <b>Support / immobilisation</b> | Boot or other prescribed support. A clinician removes wires when healing allows; timing is not determined by the calendar alone. |
| <b>Motion</b>                   | Active ankle and permitted toe movement; no forceful metatarsal mobilisation or towel-gripping exercise.                         |
| <b>Work in this phase</b>       | Continue hip and knee exercises. Check pin-site skin according to the surgical team's instructions.                              |
| <b>Progression criteria</b>     | Maintained alignment on imaging, healing sufficient to increase loading, and decisions on wires and joint movement.              |

See the exercise or activity for this phase →

## Full programme - continued

### 03 · Returning to walking

Usually weeks 6–12

|                                 |                                                                                                                                              |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                     | Gradually restore loading and reduce protection.                                                                                             |
| <b>Weight-bearing</b>           | Increase loading in the boot according to the surgeon's plan. Return to regular footwear only when cleared and without marked forefoot pain. |
| <b>Support / immobilisation</b> | Gradually transition to roomy shoes with a supportive sole; avoid immediately walking barefoot on hard surfaces.                             |
| <b>Motion</b>                   | Restore toe movement after removal of blocking wires and clearance; do not force painful joints.                                             |
| <b>Work in this phase</b>       | Gait training, light resistance and gradual intrinsic foot work only after loading is cleared. No jumping.                                   |
| <b>Progression criteria</b>     | Walking in shoes without a limp, no fracture-site tenderness or next-day worsening, and clinical and imaging evidence of union.              |

See the exercise or activity for this phase →

### 04 · Strength and activity

From around week 12; according to union

|                                 |                                                                                                                                                 |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal</b>                     | Restore forefoot capacity and limb control.                                                                                                     |
| <b>Weight-bearing</b>           | Heel raises, running and hopping require clearance for the relevant loading level. Multiple or articular fractures may need longer progression. |
| <b>Support / immobilisation</b> | Task-appropriate footwear. Use an orthotic for a specific indication, not as a substitute for union.                                            |
| <b>Motion</b>                   | Range sufficient for foot rollover; painful mechanical restriction needs assessment.                                                            |
| <b>Work in this phase</b>       | Double-leg heel raises, balance and then work- or sport-specific tasks. Watch for overload of adjacent metatarsals.                             |
| <b>Progression criteria</b>     | Union, pain-free tasks, good control and no next-day pain or swelling response.                                                                 |

See the exercise or activity for this phase →

## How to adjust the dose

Increase one element at a time: repetitions, distance, range or resistance. Sharp pain, limping or markedly increased swelling calls for reducing the load. Check symptoms after exercise and the following day; discuss persistent deterioration. Absence of pain does not replace union assessment.

If the surgeon prescribes a kilogram limit, record the value and duration. Do not independently convert “as tolerated” into kilograms. Do not add weights without clearance for resistance.

## Everyday activities and return to function

### **Walking and stairs**

Use aids while needed to respect the load restriction and maintain gait quality. Practise stairs with a physiotherapist; choose a safer alternative when support or a rail is unavailable.

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### **Driving**

Resume only after assessment of rapid, forceful emergency braking and without medication impairing alertness. Operated side, transmission, bracing and loading restrictions affect the decision; discuss it with the treating team and consider insurance conditions.

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### **Work, rest and swelling**

Seated work requires opportunities to change position and elevate the leg; standing or manual work requires loading and task tolerance. Swelling may persist, but new or rapidly increasing swelling requires assessment.

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### **Wound care and prevention**

Do not soak an unhealed wound, remove wires yourself or change prescribed thromboprophylaxis. Follow individual medication, dressing, compression and scar-care instructions. Swimming requires complete wound closure and clearance.

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### **Running and sport**

Timing follows healing and capacity; it is not a stand-alone criterion. Establish safe gait, strength, balance and task tolerance first, progressing without significant next-day worsening.

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## Warning signs — when to seek help

### Emergency help

Sudden shortness of breath, chest pain, collapse or coughing up blood: call emergency services. Use 112 in the EU; elsewhere use the appropriate local emergency number.

### Urgent same-day assessment

New one-sided calf pain and swelling; increasing pain despite rest; fever with wound redness or discharge; wound breakdown; a new injury or pain after accidental loading.

### Do not wait for a routine appointment

A cold, pale or blue foot, rapidly increasing numbness, loss of toe movement or severe increasing pain under a cast requires immediate emergency assessment.

## Variants and clinical context

- The first metatarsal carries substantial load; shortening or malalignment may overload adjacent rays. New pain beneath other metatarsal heads requires assessment.
- Midfoot pain with suspected tarsometatarsal injury requires assessment for Lisfranc injury; this protocol is not a substitute.
- The time ranges describe a cautious fixation pathway. They do not establish identical protection for every fracture and implant.

## Related resources

- [Fifth metatarsal fracture — postoperative rehabilitation](#)
- [Calcaneal fracture — rehabilitation after fixation](#)
- [Avulsion or Jones fracture? — patient article](#)
- [All published foot and ankle protocols](#)

## References and evidence

Verified publications and evidence limitations

1. Republication of “Metatarsal Fractures”. *Foot & Ankle Orthopaedics*. 2023. DOI: 10.1177/24730114231193428.

Research informs protection and progression decisions; it does not validate every illustrated exercise or example dose. Procedure details, tissue condition and the individual plan determine application.

## Glossary

### **ROM**

Joint range of motion. Active movement uses your own muscles; assisted movement uses additional help.

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### **Non-weight-bearing**

No body-weight transfer through the operated foot during standing and walking.

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### **As tolerated**

Once this pathway is authorised: loading limited by symptoms and movement quality within prescribed protection. It is not permission for unrestricted sport.

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### **Walker**

A walking boot is a protective ankle-foot support. A walking frame is a separate mobility aid.

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Educational material. Version 19 October 2026. The individual postoperative plan takes priority.

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Current online version: [pobozy.org](https://pobozy.org) - [open the protocol](#)

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