

# How Long Will This Take?

**An Injury Recovery Timeline** 

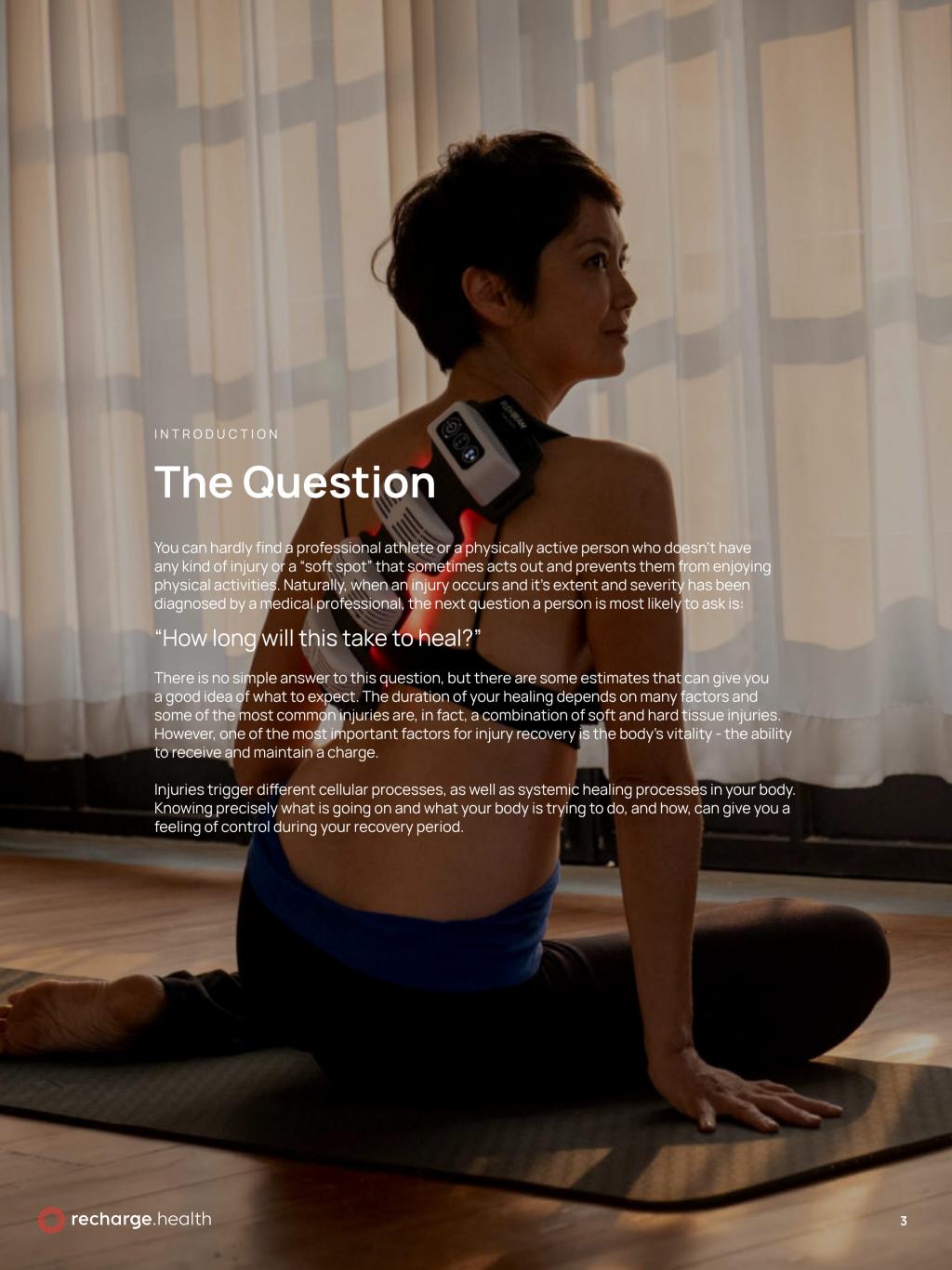
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INTRODUCTION

# Three Phases of Healing

Let's look at these phases in brief:

Phase	Description
Inflammation approx. 4 days - 2 weeks	As soon as the injury happens, cells are damaged - some of them irreparably. The blood supply is interrupted, so cells cannot rely on ATP production for energy and they turn to breaking down sugars to produce it (anaerobic respiration). Your body attempts to close down broken blood vessels to prevent blood loss and to produce protein fibers to fortify the necessary clots. These processes cause an increase in blood and lymph flows so that all the cytokines, growth factors, and other necessary chemicals can reach the target area faster.
Repair approx. 4 months	This is when the repair and integration of damaged tissue happens. Scars are created by a collagen network, essential for repopulating this area with new cells.
Remodeling approx. 1 - 2 years	In the remodeling phase, scars cells are replaced by the stem cells, that differentiate into fibro-, myo-,-osteo-blasts to fuse damage and to form new functional tissues. The scars are contracted and reorganized.



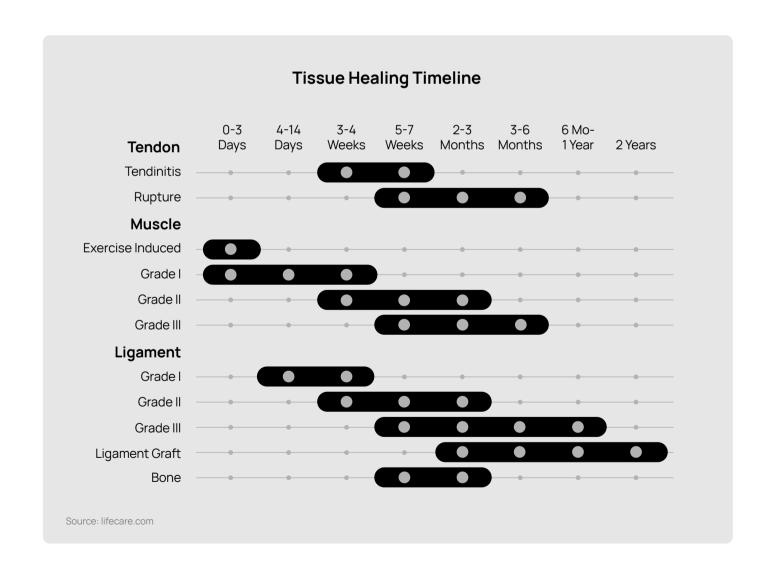
# Three Grades of Injury

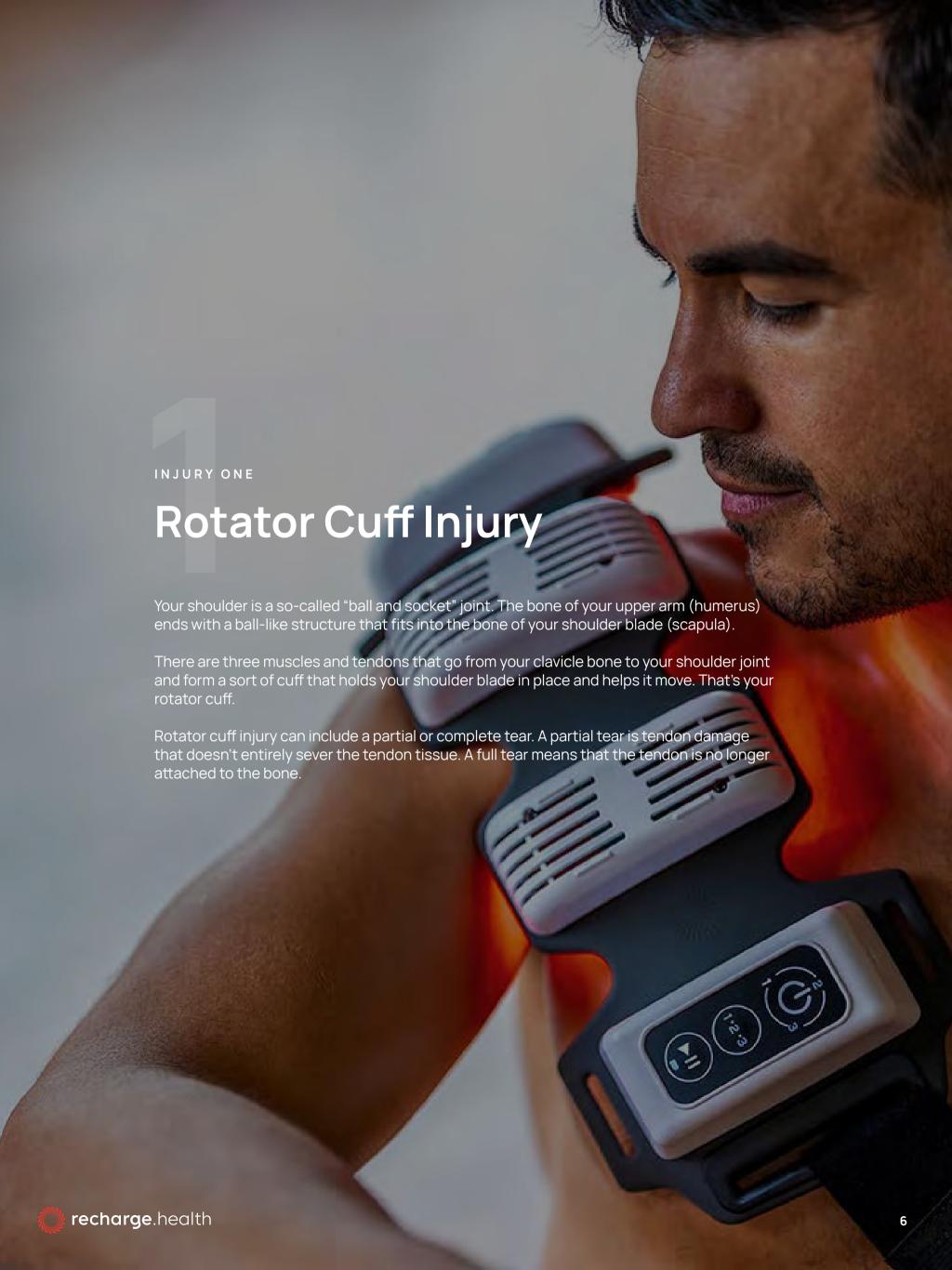
One of the most important factors that influence recovery time is the severity of the injury. Your injury can be Grade I, Grade II, or Grade III.

Grade I is considered to be a mild injury. Grade I injuries involve stretching and possibly mild tearing of the tissue. If you twist your ankle and it mildly swells, that's most likely a Grade I injury.

Grade II injuries involve more damage to the tissue with a high possibility of partial rupture. Grade II injuries may involve more than one type of tissue. For example, if a Grade I injury means ligaments are stretched, a Grade II injury could mean that there is a tear in those ligaments, but also an injury to the nearby tendon.

Grade III are the most severe injuries and they involve a complete rupture disconnection of a tissue. Torn ligament, completely ruptured tendon, and even broken bones are all Grade III injuries.





ROTATOR CUFF INJURY

# Main Symptoms and Causes

### **Symptoms**

- → Pain when lifting the arm to the side.
- → Pain when resting/night pain.
- → Weakness and pain when rotating the arm.
- → Difficulty lifting objects.
- → Popping, crackling, and clicking sounds when moving the shoulder.

- → Injury falling down on an outstretched arm or pulling weight using sudden, jerky movements.
- → Overuse and repetitive motions tennis, basketball, golf, and other sports that put prolonged stress on your shoulders or requires hands to be held overhead.
- → Inadequate warm up.

# How Long Does It Take To Heal?

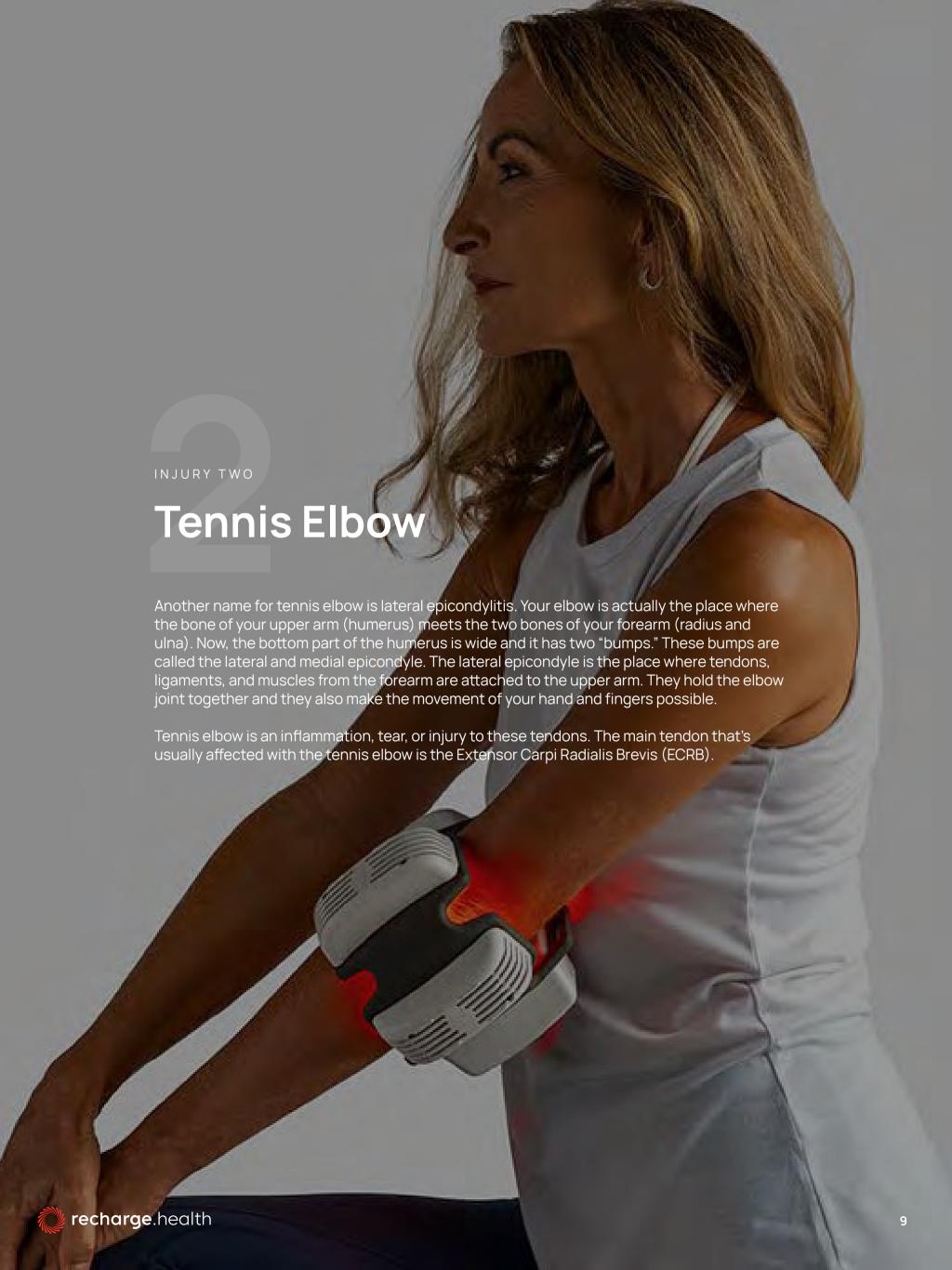
Injury Severity	Typically Treated with	Recovery Time
Mild rotator cuff injury	anti-inflammatory medication, ste- roid injections, physical therapy	4-6 weeks
Severe partial rotator cuff injury	anti-inflammatory medication, ste- roid injections, physical therapy	4 to 6 months
Full rotator cuff tear	surgery	4 to 6 months/ full recovery may take up to a year

# **Rotator Cuff Surgery Recovery Timeline**

Day of	Within the	Within the	Within the	Within the
Surgery	First 7 Days	First 6 Weeks	First 12 Weeks	First 6 Months
In most cases, you will be released the same day or you'll be advised to stay the night. Your arm will be placed in a sling.	This will be the time spent resting, observing your wound for infection (redness, heat, and discharge are the usual symptoms), and managing possible pain.  Remember that you won't be able to drive during this period and you won't be using your arm, so prepare for that situation in advance.	You will still be wearing the sling, but, you'll also start with physical therapy.  It's essential that you're diligent with your passive range of motion exercises during this period. This is when your tissue heals and if you skip physical therapy, scar tissue may form that can limit your range of motion.	Throughout this period, you and your physical therapist will evaluate when is the right time to remove your sling.  Your routine will include light strength exercises, but you are still not allowed to lift heavy objects or to support your weight with your arms. The sutures are still sensitive and can be torn.	This is the strengthening phase. The goal is to have you back to our pre-surgery routine by the end of the sixth month.  However, keep in mind that recovery is highly individual and you should not compare your progress to other people.

- → Rest enough
- → Find a good position for sleeping that doesn't put a strain on your shoulder
- ightarrow Follow your doctor's advice
- → Be diligent with your physical therapy
- → Include Red Light Therapy into your recovery routine
- → Quit smoking
- $\rightarrow$  Explore supplements based on an essential amino acid mix, magnesium, calcium, zinc, papain, etc
- → Include foods rich in collagen and leucine





TENNIS ELBOW

# Main Symptoms and Causes

### **Symptoms**

- → Pain on the outside of your elbow.
- → Pain that radiates down the forearm. when lifting or bending.
- → Pain when gripping small objects.
- → Issues extending your arm.

#### Causes

This is an overuse injury and can be caused by any repetitive motion that hurts the muscles attached to the elbow. Besides tennis, the usual causes are:

- $\rightarrow$  Excessive computer mouse use.
- → Painting.
- → Carpentry.
- → Plumbing work.
- → Food preparation tasks.
- $\rightarrow$  Direct injury to the elbow.

#### TENNIS ELBOW

## How Long Does It Take To Heal?

Healing a Tennis Elbow depends on the severity of your injury and the healing abilities of your body. In most cases, non-surgical treatments are enough, but sometimes, surgery is the best option.

2-3 weeks	6-8 weeks	6-12 month	1 year	2 years
During this period, you should begin to experience significant relief if you've been following advice	If the symptoms haven't improved, your doctor may consider corticosteroid injections.	If the symptoms haven't resolved, surgery may be considered.	90% of the cases are resolved.	Full recovery is expected for all cases.

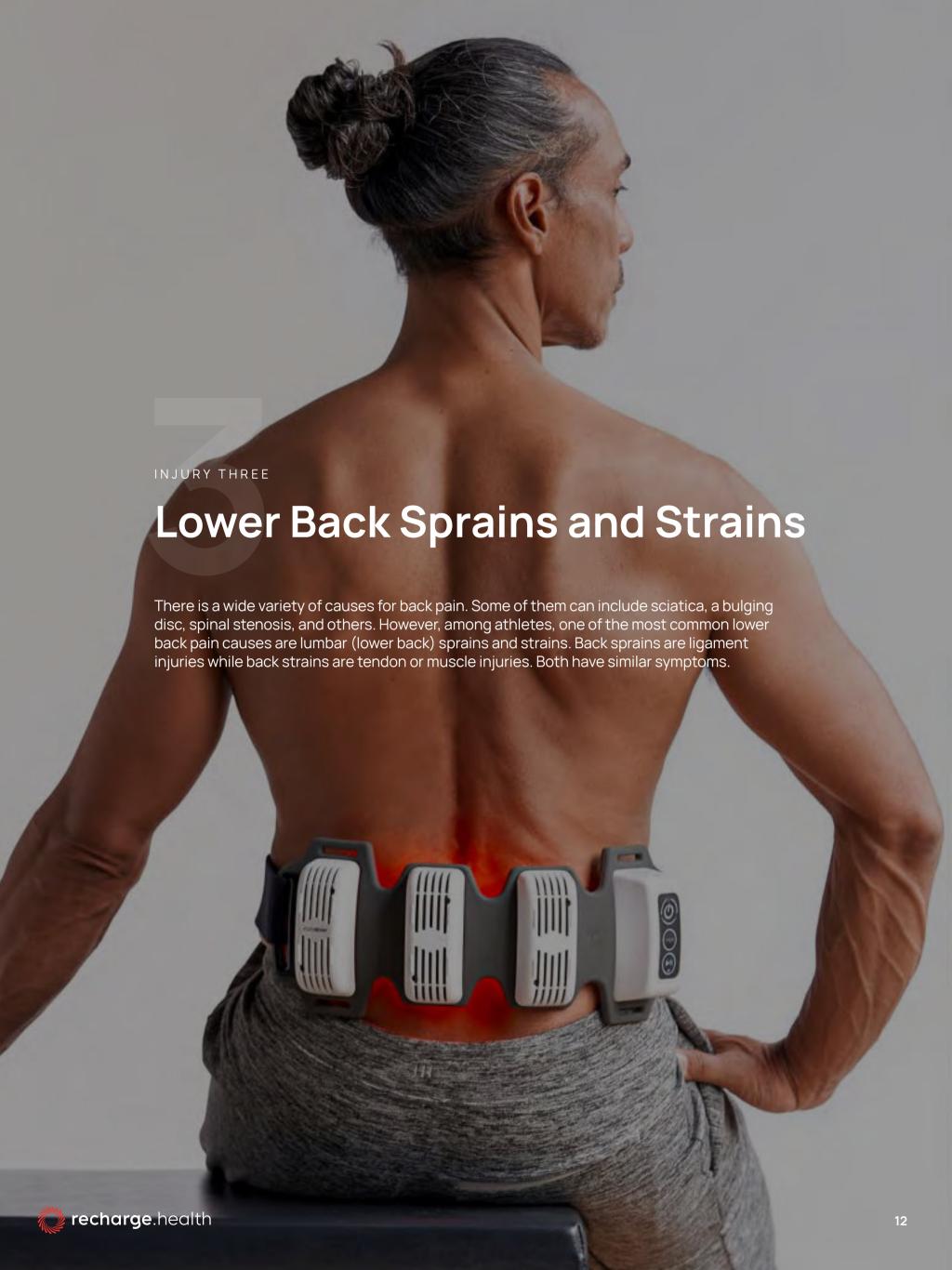
If your injury requires surgery, this is the most likely recovery timeline you can expect. These milestones can vary based on many factors and you should always consult your doctor for more accurate advice.

# **Tennis Elbow Surgery Recovery Timeline**

7 to 14 days	2 to 6 weeks	2 months	3 to 12 weeks	4 to 6 months
You may be required to wear a splint during this period. Don't expect to be able to use your arm during this time.	Within this period, you should be able to return to your daily activities. You will be doing exercises to stretch your muscles and tendons and bring back your range of motion.	Strength exercises might be introduced into your rehabilitation routine.	You can go back to work, (depending on the type of work you do).	You can go back to playing sports. Playing some sports might require wearing a brace.

- → Rest your arm as much as possible
- ightarrow Use a <u>Targeted Red Light Therapy Device</u>
- $\rightarrow$  Use ice packs when in pain
- → Don't miss out on your exercises
- → Temporarily alleviate pain by lifting your elbow to the side
- → Have an osteopath check your neck





LOWER BACK SPRAINS AND STRAINS

# Main Symptoms and Causes

### **Symptoms**

- → Sudden back pain in your lower back.
- → Stiffness.
- $\rightarrow$  Restricted range of motion.
- → Lower back spasms.
- → Inability to maintain posture.

- → Sudden twisting or bending movements.
- $\rightarrow$  Lifting excessive weight.
- → Overuse injuries.
- → Spine deformities are a risk factor.
- → Inadequate warm-up.
- → Nerve compression or SI joint misalignment.



#### LOWER BACK SPRAINS AND STRAINS

# How Long Does It Take To Heal?

Grade I (Mild)	Grade II (Moderate)	Grade III (Severe)
Overstretching + small tears in tissue fibers.	Incomplete tearing of tissue fibers.	Complete tearing of tissue fibers.
2-14 days.	4-12 weeks.	Surgery is the preferred form of treatment: You can resume regular daily activities 4-6 weeks after surgery.

- $\rightarrow$  Targeted Red and Near Infrared Light Therapy for lower back
- ightarrow Stay mobile as much as the pain allows
- → Stay hydrated
- ightarrow Do the exercises recommended by your physical therapist
- → Watch your posture, if working in the office, swerving chairs could twist the back predisposing to injuries.



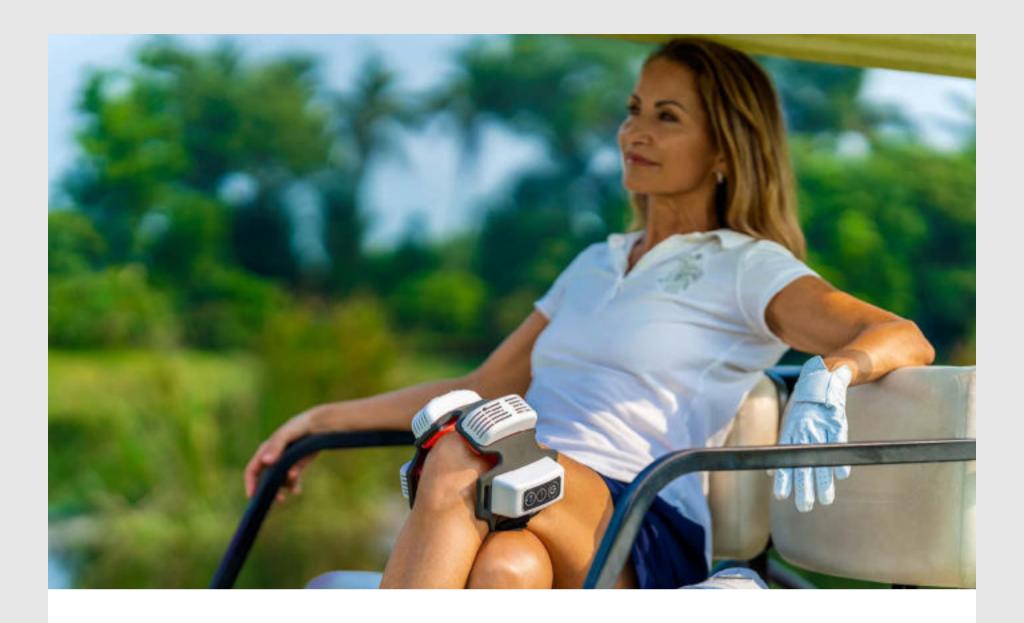
HAMSTRING STRAIN

# Main Symptoms and Causes

### **Symptoms**

- → Sudden sharp pain.
- → Tearing sensation.
- → Delayed muscle tenderness.
- → Occasional bruising or discoloration.
- → Weakness.

- → Sudden movements during sprinting/running.
- → Stretching under excessive force.
- → Muscle overload.
- → SI (Sacro-Illiac) joint mis-alignment.



HAMSTRING STRAIN

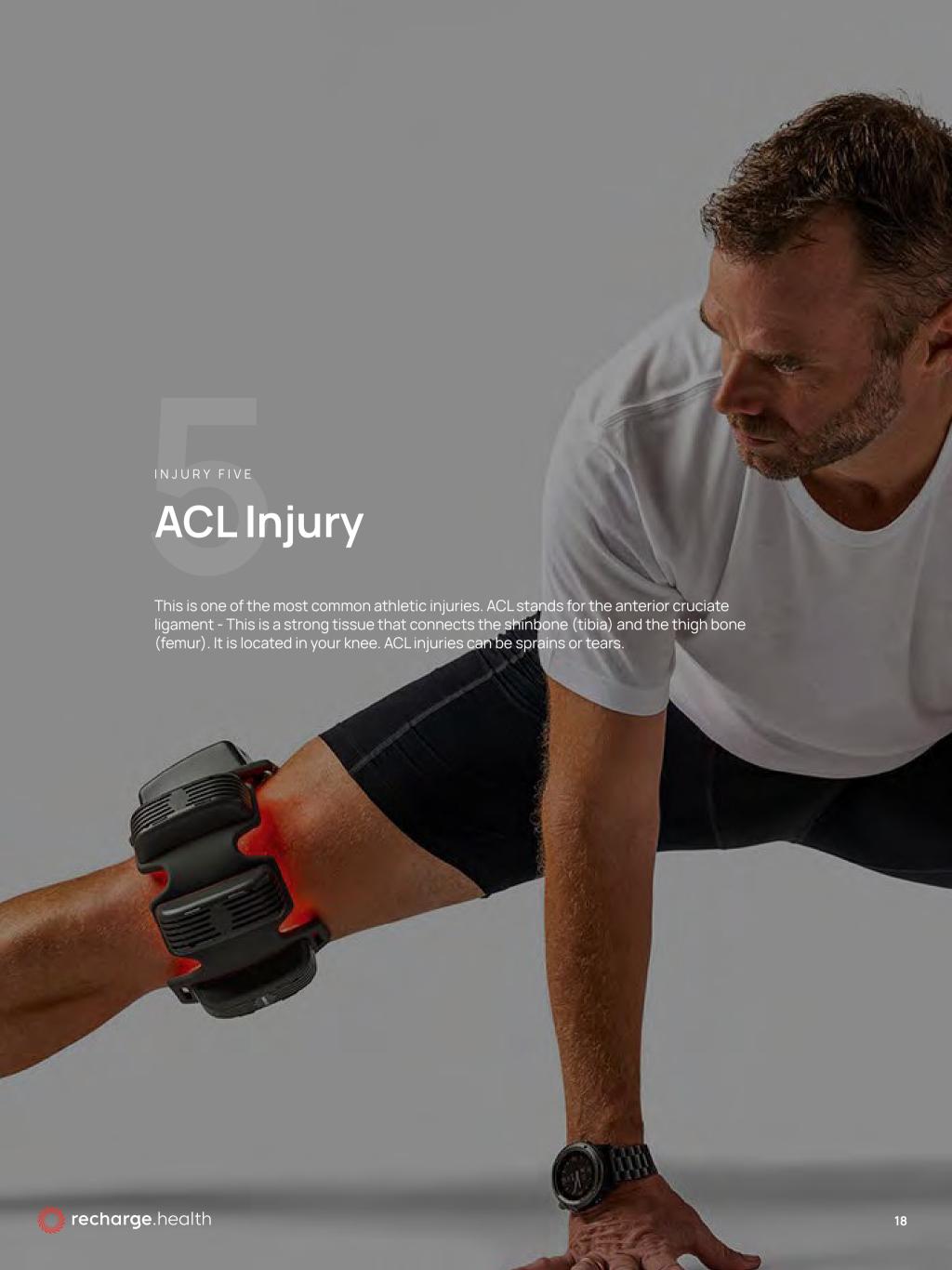
# How Long Does It Take To Heal?

In most cases, it's the biceps femoris that gets strained. This muscle heals faster than the other two because it has more blood supply.

Grade I (Mild) - Muscle pull	Grade II (Moderate) - Partial muscle tear	Grade III (Severe) - Complete muscle tear
Pain, sensitivity, stiffness, ability to walk, intact.	Pain, swelling, and reduced ability to walk.	Massive swelling and pain.No function of the affected muscles.
4-5 days until you're back to your daily activities. 3 weeks until you can resume sports related activities.	4-8 weeks until healing.	Surgery may be recommended - Sports activities can be resumed after 3 months.

- → RICE (rest, ice, compression, and elevation)
- $\rightarrow$  Kinesotherapy
- → Red light Therapy
- → Kinesiology Taping
- → Back stretching
- → Deep breathing exercises





ACL INJURY

# Main Symptoms and Causes

### **Symptoms**

- → Severe knee pain.
- → Loss of function of the knee.
- → Possible knee dislocation.
- → Possible popping sound.
- → Swelling.

- → Sudden changes in the movement directions characteristic for basketball, volleyball, soccer, and skiing.
- → Inadequate warm-up.

# How Long Does It Take To Heal?

In cases of Grade II and Grade III injuries, the ACL doesn't really heal since it doesn't have the blood supply necessary to do so. However, those who don't participate in sports actively can manage without surgery without serious issues. However, surgery is recommended for active individuals. Recovery is highly different from one individual to another.

Grade I - sprain	Grade II - Partial tear	Complete muscle tear
Little tenderness and swelling. No instability.	Tenderness and moderate swelling with some loss of function. Painful response to Lachman's test.	Tenderness, moderate pain, sometimes swelling, rotational instability, knee gives out occasionally.

# **Non-Surgical Recovery Timeline**

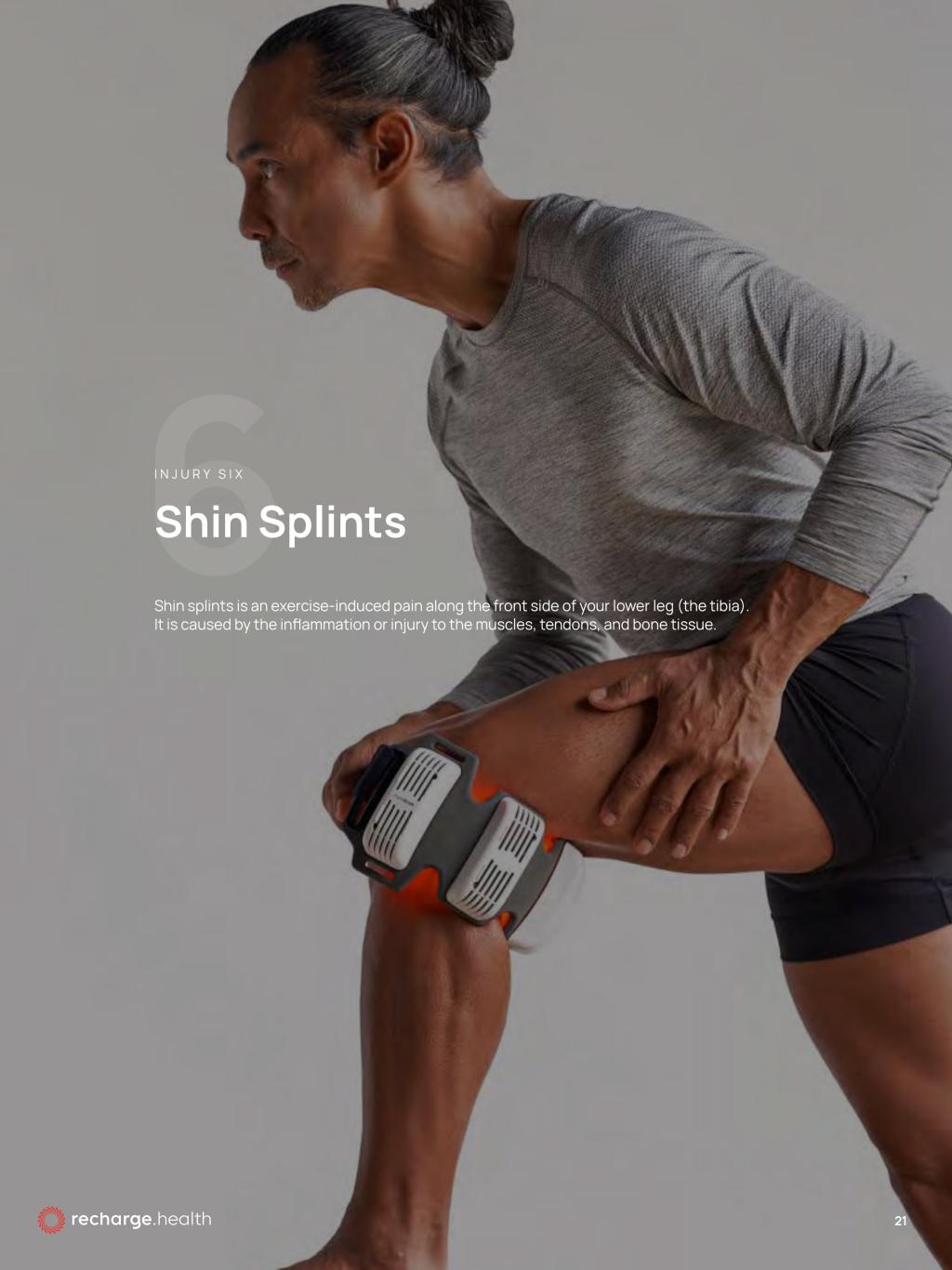
1 week	1-2 weeks	6-8 weeks	8-10 weeks
Return to a desk job.	Using crutches for those that require them.	Return to a job involving physical labor.	Physical therapy required before returning to sports.

# **ACL Surgery Recovery Timeline (HIGHLY INDIVIDUAL)**

	Phase 1 Acute Phase	Phase 2 Strengthening Phase	Phase 3 Return to Activity Phase	Phase 4 Sport Phase
Therapy goals	<ul> <li>→ Reduction in pain.</li> <li>→ Recovering range of motion.</li> <li>→ Strenghtening the surrounding muscles.</li> </ul>	<ul> <li>→ Maintain ROM and flexibility.</li> <li>→ Restore muscle strength.</li> </ul>	<ul> <li>→ Massive swelling and pain.</li> <li>→ No function of affected muscles.</li> </ul>	→ Return to sports.
Time estimate	<ul> <li>→ Crutches for the first</li> <li>7-10 days.</li> <li>→ Incision heals after</li> <li>14 days.</li> <li>→ Driving resumed after</li> <li>2 weeks</li> </ul>	<ul> <li>→ Light walking: 2-6 weeks</li> <li>→ Elliptical trainer: 6 weeks after surgery.</li> <li>→ Weights: 2 - 3 months after surgery.</li> </ul>	<ul> <li>→ Running - 3 months post surgery.</li> <li>→ Pivoting and twisting - 4 to 5 months post surgery</li> </ul>	→ 6 months after reconstructive surgery.

- → Be very patient with your recovery
- → Use ice when in pain
- → Comfrey salve
- → Red light therapy
- → Mindfulness exercises
- → Breathing exercises





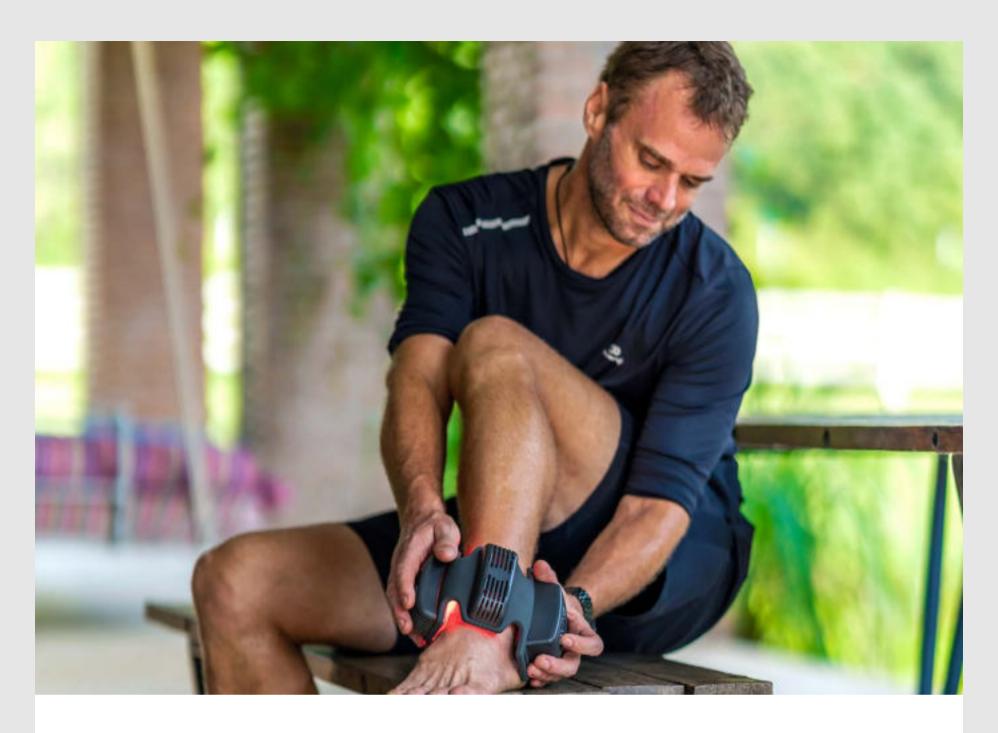
SHIN SPLINTS

# Main Symptoms and Causes

### Symptoms

- → Pain on the front and outside of the shin when the heel touches the ground.
- → Pain on the inside of the lower leg above the ankle.
- → Sharp or dull pain that comes and goes.
- $\rightarrow$  Pain subdues during the workout.
- → Pain gets worse after activity.

- → Overuse.
- → Excessive increase in activities.
- → Inadequate footwear.
- → Inadequate warm-up.



SHIN SPLINTS

# How Long Does It Take To Heal?

Recovery timeline depends on the injury severity and it can vary from person to person.

3 days	2-6 weeks	Up to 8-10 weeks	3 to 6 months
Apply ice to reduce swelling.	Complete rest.	Intensity of sports activities should be reduced by 50%.	Full recovery expected.

- $\rightarrow$  lce to soothe the pain
- $\rightarrow$  Stretches if the pain allows
- $\rightarrow$  Red light therapy to promote the healing
- → Lots of rest





# Red Light Therapy and FlexBeam for Faster Recovery

**Red and near-infrared light therapy** may promote the body's natural healing systems which may further speed up healing processes and recovery. Moreover, red light therapy within the wavelengths that FlexBeam uses, can be helpful for all three recovery phases.

Phase	What Happens	How Red Light Helps
Inflammation (4 days - 2 weeks)	→ Reduced blood flow → Energy deficiency due to lack of ATP	<ul> <li>→ Enhances local circulation</li> <li>→ Stimulates mitochondrial respiration</li> <li>→ Increases ATP production</li> <li>→ Increases in mitochondrial membrane potential and cell membrane potential which leads to faster healing on a cellular level</li> </ul>
Repair (4 months)	<ul> <li>→ Regeneration of tissues</li> <li>→ Collagen network activation</li> <li>→ Scar tissue creation</li> </ul>	<ul> <li>→ Activates stem precursor, and satellite cells</li> <li>→ Promotes collagen production</li> <li>→ Helps the proliferation of fibroblasts</li> </ul>
Remodeling (1 - 2 years)	→ Stem cells replace scar tissue	<ul><li>→ Remodels scar tissue faster</li><li>→ Helps nerve regeneration</li></ul>

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