Chapter 4. Management of Common Injuries Part 1. Soft Tissue Injuries

Chapter 4 • Management of Common Injuries

Part 1 • Soft-Tissue Injuries

(Sprains · Strains · Contusions · Immediate Care & Rehabilitation)

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1 What Counts as a "Soft-Tissue" Injury?

Soft tissues are **everything that is not bone**: ligaments, tendons, muscles, fascia, blood vessels, nerves and skin. The three most frequent injuries you will meet are:

Term	Tissue Involved	One-Line Description
Sprain	Ligament	Over-stretch or tear of the strong "rope" that joins one bone to another (e.g., ankle lateral ligament).
Strain	Muscle or tendon	Over-stretch or tear of fibres that create movement (e.g., hamstring pull).
Contusion	Muscle or sub-cutis	A direct blow that crushes tissue and capillaries, causing a bruise.

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2 How Do They Happen?—Quick Mechanisms

- **Sprain:** Sudden force across a joint **beyond its normal range**.
  Example: Landing on the outer border of your foot → ankle rolls inward.
- **Strain: Excessive tension** while the muscle is lengthening or contracting fast.
  Example: Sprinting—the hamstring fires eccentrically to slow the leg swing.
- **Contusion: Direct impact**—ball, elbow, fall, or blunt object. Capillaries burst, bleeding into the tissue.

Mnemonic: "S-P-R" — **S**udden overstretch = Sprain, **P**ulling muscle = strain, **R**ough blow = contusion.

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3 Grading Severity—Why It Matters

Grade	Tissue Damage	Key Signs	Typical Healing Time*
I (Mild)	Micro-tear, <10 % fibres	Pain but little swelling; full strength	2–3 weeks
II (Moderate)	Partial tear, 10-90 % fibres	Visible swelling/bruising, weakness, painful movement	4–8 weeks
III (Severe)	Complete rupture	"Pop" felt/heard, gross instability or loss of function	3–6 months (may need surgery)

*Assumes good compliance and no complications.

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4 Immediate Care—The P.O.L.I.C.E. Plan

Protect • **O**ptimal **L**oading • **I**ce • **C**ompress • **E**levate

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Step	What to Do (0–72 h)	Why
Protect	Stop activity, support joint (brace, sling).	Prevents further tearing.
Optimal Loading	Gentle pain-free motion (wiggle toes, isometrics).	Maintains circulation, limits stiffness—better than total rest.
Ice (Cold)	15 min every 2 h; cloth barrier.	Constricts vessels ⇒ ↓ swelling, ↓ pain.
Compress	Elastic bandage—snug, not numb.	Limits oedema; provides proprioception.
Elevate	Injured part above heart level.	Promotes drainage of fluid by gravity.

Avoid H.A.R.M. for 72 h → **H**eat, **A**lcohol, **R**unning, **M**assage (deep). These increase bleeding.

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5 Rehabilitation Road-Map—3 Phases You Must Pass

Phase	Goal	Key Actions	Progress Marker
1. Acute (Day 1-7)	Pain & swelling control; gentle mobility	POLICE; pain-free isometrics; ankle circles or quad sets; diaphragmatic breathing	Swelling ↓ 30 %; pain ≤ 3/10 at rest
2. Sub-acute (Week 2-4)	Regain range & strength; re-build collagen	Active ROM to full; resisted bands; balance drills (for sprains); gentle stretching (for strains)	Symmetrical ROM; ≥ 70 % strength vs uninjured side
3. Functional / Return (Week 4 +)	Sport or work-specific loading	Plyometrics, agility, heavy strength, eccentric loading (hamstring Nordic curls)	Hop test, Y-balance, or job-task simulation pain-free & ≥ 90 % performance

Golden rule: No phase is skipped. If pain, swelling or instability returns, drop back a level.

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6 Red-Flag Signs—Refer Urgently

- **Numbness / tingling** beyond bruised area ➜ possible nerve injury.
- **Blue-cold extremity** ➜ vascular compromise.
- **Extremely tight compartment** ➜ suspect compartment syndrome.
- **Joint "gives way" repeatedly** ➜ likely Grade III sprain; surgical opinion needed.

When in doubt, **immobilise and refer**.

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7 Practical Example—Lateral Ankle Sprain

Day 0–2	Day 3–7	Week 2	Week 3–4
POLICE; crutches partial weight-bear	Ankle alphabet, static balance 30 s × 5	Theraband inversion/eversion 3×15	Single-leg hop, figure-8 run when pain-free

Return to sport when: painless triple hop, 90 % calf-raise endurance, agility T-test within 10 % of pre-injury time.

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8 Common Student Questions—Simple Answers

Q	A
“Ice or heat first?”	Ice in first 72 h; heat only after swelling subsides.
“Brace or tape?”	Brace gives consistent compression; tape is lighter but loses tension after 30 min—choose per sport and budget.
“When can I stretch?”	Mild static stretch starts in sub-acute phase when pain < 3/10. Aggressive stretching too early re-tears fibres.

9 Quick-Look Checklist for Every Soft-Tissue Injury

1. **History** – mechanism, sound, immediate swelling?
2. **Inspect** – bruise, deformity, compare sides.
3. **Palpate** – pinpoint tenderness, gap?
4. **Active & Passive ROM** – stop at pain.
5. **Strength** – isometric test ± pain.
6. **Special test** – ligament stress (if trained).
7. **Grade** injury → plan POLICE & rehab phase.
8. **Document** – time, care given, advice.
9. **Educate** – HARM to avoid, phase goals.
10. **Follow-up** – review in 48 h; adjust load.

10 Key Take-Home Points

- **Sprain = ligament, strain = muscle/tendon, contusion = bruise.**
- **POLICE** is the modern standard—*Optimal Loading* beats strict rest.
- Progress through **acute ⇢ sub-acute ⇢ functional** phases; test before you load.
- **Pain, swelling, instability** are your dashboard gauges—monitor them daily.
- Know your **red flags** and never hesitate to **refer** when signs look serious.

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