RUHANI COLLEGE
OF HEALTH BUSINESS AND TECHNOLOGY

Lecture 22 — Plantar Fasciitis

Student Handout · RU RMT 20 Pathological Treatments · Ruhani College · Registered Massage Therapy Diploma Program

How to use this handout: it follows the lecture in the order it is delivered, so you can annotate it as we go rather than copying slides. Everything examinable in this lecture is here. Work through the review questions at the end without looking back, then check them against the answers.

Learning outcomes

Notes:

Define the condition — Explain plantar fasciitis as micro-tearing of the plantar aponeurosis.

Trace the mechanism — Follow overuse and biomechanics to tears, degeneration, and pain.

Read the picture — Recognise the classic morning-pain pattern and the acute vs chronic stages.

Assess accurately — Confirm the condition by history, gait, and palpation testing.

Treat by stage — Apply the right acute or chronic protocol — down to the bone.

Advise self-care — Teach the daily stretches that carry recovery over months.

An Overview — The most common cause of heel pain

Plantar fasciitis involves repetitive micro-tearing — sometimes with inflammation — of the plantar fascia, the tough fibrous sheet on the sole of the foot. It is the single most common cause of heel pain.

Heel pain

Micro-tearing

The most common cause of it.

Tiny tears in the plantar fascia.

Onset is gradual, beginning as an acute stage of near-intolerable pain that later settles into a more bearable chronic stage. Most cases resolve within a year.

Two stages

Good prognosis

An acute, then a chronic phase.

Most resolve within a year.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Understanding Plantar Fasciitis

A common, self-limiting, but genuinely painful condition — driven by overuse and foot mechanics, and unmasked most cruelly with the first steps of the morning.

Notes:

General Information — What causes plantar fasciitis

Excessive strain & overload. Repetitive strain and exercise overload micro-tear the plantar fascia.

Improper foot biomechanics. Faulty mechanics and non-supportive footwear concentrate stress on the fascia.

A hypertonic calf. An extremely tight gastrocnemius transmits tension straight into the fascia.

Added body load. Obesity and pregnancy increase the load carried through the arch.

Arthritis. Underlying arthritic change can contribute to the condition.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Who Is At Risk — Populations & predisposing factors

Notes:

High-impact athletes — Especially after increasing the intensity of an exercise program.

Diabetics & mid-life — More prevalent in people with diabetes and those aged 40 to 60.

Arch abnormalities — Greater risk with pes cavus (high arch) or pes planus (low arch, overpronation).

Faulty foot motion — Increased inversion or eversion raises the risk; occurrence is usually one-sided.

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Morbidity & Prognosis — How common, and how it ends

2M

10–15%

80%

Americans affected by heel pain each year

of runner injuries and foot symptoms involve the plantar fascia

of cases resolve completely within a year

Complications include bruising, swelling, numbness, tingling, and — rarely — rupture. Ignored, the condition can create problems in the foot, knee, hip, or back as the body compensates for an abnormal footfall.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Two Stages — Acute vs. chronic plantar fasciitis

Acute

Chronic

The recent, severe stage

The settled, ongoing stage

A relatively recent onset

Exquisite, near-intolerable pain

Cold applications give relief

Often traced to a specific activity

Follows the acute stage

Symptoms are more bearable

The classic morning-pain pattern

Heat applications give relief

Distinguishing the stage is the first step of assessment — it decides both the hydrotherapy and the depth of work.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Diagnosis — Confirming it — and the heel-spur myth

Diagnosis rests on a verbal activity history, gait assessment, visual inspection of the feet and shoes, and palpation and stretching of the plantar surface. X-rays are not necessary, but may be ordered to rule out a fracture.

Notes:

History & palpation — Activity history, gait, and hands-on testing confirm the picture.

Two distinct conditions — Heel spur and plantar fasciitis are separate — they sometimes coexist, but are not the same.

A spur can be silent — Heel-spur pain can mimic plantar fasciitis, yet a spur is often painless.

PF is never silent — Plantar fasciitis is never asymptomatic — pain is always present.

Source: Ruhani College Lecture 22; Magee (2014)

Pathophysiology

A bowstring of tough fascia holds up the arch with every step — until overload frays it, and a condition named for inflammation turns out to be mostly degeneration.

Notes:

The Anatomy — The plantar fascia

The plantar fascia is a very tough aponeurosis — a flat, expanded, tendon-like sheet — lying on the deep plantar surface of the foot.

An aponeurosis

From the calcaneus

A flat, tendon-like fibrous sheet.

Origin at the medial heel tubercle.

It originates at the medial tubercle of the calcaneus (the heel bone), spreads across the sole, weaves into the deep transverse metatarsal ligament, and attaches to the proximal phalanx of each toe.

Across the sole

To the toes

Into the transverse metatarsal ligament.

Attaches at each proximal phalanx.

Notes:

Source: Ruhani College Lecture 22; Magee (2014)

Structure & Function — What the plantar fascia does

With every step, the plantar fascia absorbs shock and acts as a bowstring — spanning the sole to hold up the foot's longitudinal arch. It is a structure under load with nearly every footfall of the day.

A shock absorber. It cushions the impact transmitted through the foot.

A bowstring. It maintains the tension that supports the longitudinal arch.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

The Mechanism — How the fascia is injured

The strain repeats with every step, so without unloading and healing the tissue, the cycle simply continues.

Notes:

Overload & mechanics — Overuse plus faulty foot biomechanics strain the fascia.

Micro-tears — Tiny tears — sometimes with inflammation — develop in the sheet.

Persistent pain — Further irritation, occasional swelling, and often excruciating pain.

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

A Misleading Name — Not really an "-itis"

Despite the "-itis" suffix, plantar fasciitis is not technically an inflammatory condition. The pain, once assumed inflammatory, often arises from degeneration of the aponeurosis — which may or may not be accompanied by inflammation.

Degeneration, not just inflammation. The tissue is breaking down, not merely inflamed.

Why it guides treatment. Healing means bringing blood to degenerated tissue — exactly what massage can do.

Notes:

Source: Ruhani College Lecture 22

The Clinical Picture

The story is unmistakable: a stabbing heel pain that is worst with the first steps of the day, eases, then returns — and worsens the longer it is ignored.

Notes:

Overall Signs & Symptoms — What the client reports

Stabbing heel pain. Described as stabbing, burning, or a deep ache, and painful on palpation of the sole.

Radiating along the sole. Pain travels from the heel toward the base of the toes.

Worst in the morning. Heel pain is worst with the first steps, eases for a while, then worsens through the day.

Worse after sitting. Pain increases after long periods of sitting, and after — not usually during — exercise.

Mild heel swelling. Some mild swelling in and around the heel may be present.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

The Tell-Tale Sign — The first-step pain pattern

The most recognisable feature of chronic plantar fasciitis is morning pain: sharp with the very first steps out of bed, easing as the tissue warms and stretches, then building again as the day — and the load on the foot — wears on.

After any rest. The same sharp pain returns after long periods of sitting.

Warms with movement. Gentle early movement eases it — the basis of morning self-care.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

When It Is Ignored — Compensation spreads the problem

Because a painful heel changes how a person walks, an untreated plantar fasciitis rarely stays confined to the foot — the abnormal footfall loads other joints up the chain.

Notes:

Altered footfall — Pain drives a limp and an inefficient gait pattern.

Knee & hip strain — Compensation loads the ankle, knee, and hip.

Low-back involvement — The chain of compensation can reach the lower back.

Secondary hypertonicity — Compensating muscles tighten — work the massage therapist can address.

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Within Our Scope — What massage therapy can address

Compensatory hypertonicity. The tightness in compensating structures responds to routine massage techniques.

Blood supply & cleansing. Careful, layer-by-layer softening brings the local blood supply and tissue cleansing that healing needs.

Stage-matched hydrotherapy. Cold eases the exquisite acute pain; heat eases the persistent chronic pain.

A self-care opportunity. Because the condition lingers for months, it is an ideal setting for effective client self-care.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Medical Management

The first medicine is rest from impact — but never immobility. From there, conservative care wins the great majority of cases, with surgery a rare last resort.

Notes:

Treatment Options · Conservative — The first line of care

Rest from impact. The offending impact on the sole must be relieved before healing can begin.

Swap to low-impact. Replace high-impact exercise with swimming, cycling, yoga, or similar.

But don't immobilise. Immobilisation causes debilitating stiffness and more pain — apart from a physician's night splint.

Ice & support. Ice massage or packs reduce pain; orthotics and heel pads support the arch and protect the heel.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Treatment Options · Advanced — When conservative care falls short

Notes:

NSAIDs & ultrasound — Anti-inflammatories, then ultrasound physical therapy to reduce inflammation and promote healing.

Steroid injection — A painful, temporary option that risks breaking down the heel's fat pad and worsening pain.

Shock-wave therapy — Extracorporeal shock-wave therapy (ESWT) directs sound waves at the heel to stimulate healing.

Surgery, rarely — Detaching the fascia from the calcaneus is a rare treatment of last resort.

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Preventing Recurrence — Keeping it from coming back

Notes:

Moderate & stretch — Moderate the exercise program, and stretch both before and after activity.

Manage weight — Maintaining an ideal body weight lightens the load on the fascia.

Supportive shoes — Well-fitted, supportive footwear protects the arch and heel.

Foot & ankle work — Regular foot and ankle exercises maintain strength and flexibility.

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Common Medications — Managing the symptoms

Medication manages plantar fasciitis; it does not cure it. NSAIDs are used to reduce symptoms and help prevent complications — but no healing medication has been found.

NSAIDs

No cure in a pill

e.g. ibuprofen (Motrin, Advil).

No healing medication exists.

That places the burden of true recovery on unloading the foot, restoring the tissue, and the client's daily self-care.

Pain can be masked

Refer for advice

Moderate pressure accordingly.

Counsel OTC use via a physician.

Notes:

Source: Ruhani College Lecture 22; Werner (2019)

Massage Therapy Treatment

Confirm the stage, reproduce the pain to locate it, then treat by stage — gentle and brief in the acute foot, slow and deep to the bone in the chronic one.

Notes:

Assessment · the Therapist'S Role — Reconfirm, assess, and know when to refer

Ideally, the therapist assesses heel pain to reconfirm a physician's diagnosis. But plantar fasciitis is so common that many clients self-diagnose online and never see a doctor.

Reconfirm first

Many self-diagnose

Ideally verify a physician's diagnosis.

Few will have seen a doctor.

With a sound grasp of the signs and symptoms, the therapist can assess accurately and begin an effective plan — referring on if the condition worsens or fails to respond.

Assess confidently

Refer if it worsens

Know the signs and symptoms well.

No response means send them on.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Assessment · Gait & Movement — Reproducing the pain

Acute or chronic? Establish the stage first — recent exquisite pain, or the classic morning-eases-then-worsens pattern.

Watch the gait. Observe for limping and any compensations that strain the ankle, knee, hip, or low back.

The hop test. With the client stabilised, have him carefully hop on the affected foot; the pain should reproduce at once — stop immediately.

Inspect the shoes. Check for uneven wear (inefficient mechanics) and whether they give adequate support.

Notes:

Source: Ruhani College Lecture 22; Rattray & Ludwig (2000)

Assessment · Palpation — Locating the pain on the table

Palpate the sole. With shoes and socks off, feel along the plantar surface for fibrotic thickenings and adhesions.

The toe-extension test. Steady the foot and slowly bend the toes up toward the knee; this reproduces the pain — stop the moment he indicates it.

Map the tenderness. Palpate the heel and the whole aponeurosis into the toes, watching his reaction to pinpoint the pain.

Check the calf. Soleus and other plantar-flexor trigger points refer into the heel, so palpate the calf as well.

Notes:

Source: Ruhani College Lecture 22; Travell & Simons (1999)

Therapeutic Goals — What we aim to achieve

Because plantar fasciitis is a chronic condition that can last up to a year, the goals form a long-term therapeutic regimen — not a quick fix.

Reduce pain

Release compensation

Ease both the acute and the chronic pain.

Reduce the hypertonicity of compensating structures.

Notes:

Help the fascia heal — Bring blood to the degenerated tissue to support repair.

Teach self-care — Instruct the all-important daily self-care, and guide the return to pain-free activity.

Source: Rattray & Ludwig (2000); Ruhani College Lecture 22

Session Frequency — Scheduling by stage

Acute stage

Chronic stage

Short, gentle, frequent

Longer, tapering

30 minutes on the foot, twice a week

Then 30 minutes on compensating structures

… or for relaxation

Pain limits the time on the foot

60 minutes weekly until pain is managed

60 minutes every other week as it eases

Client takes on daily self-care

60-minute monthly maintenance

Notes:

Source: Rattray & Ludwig (2000); Ruhani College Lecture 22

Massage Protocol · Acute — Gentle, brief, and soothing

Because acute pain can be almost unbearable, the protocol addresses the foot for only 30 minutes, using Swedish relaxation techniques for the remaining time. Cold applications help quiet the exquisite pain.

Limit the footwork. Thirty minutes on the foot is enough in the acute stage.

Soothe the rest. Fill the remaining time with calming Swedish relaxation.

Notes:

Source: Rattray & Ludwig (2000); Ruhani College Lecture 22

Massage Protocol · Chronic — A full session, working deep

The chronic stage takes a full 60-minute session — 30 minutes on the affected foot and 30 on the compensating structures. Many of the hands-on techniques deliberately mirror the client's self-care, so you can teach both the method and the reasoning behind it.

Notes:

Split the hour — Thirty minutes on the foot, thirty on proximal compensation.

Work to the bone — Proper chronic treatment works down to the depth of the bone.

Mirror the homework — Techniques echo the self-care so you can teach as you treat.

Heat, then work — Moist warmth prepares the tissue for the deeper work.

Source: Rattray & Ludwig (2000); Ruhani College Lecture 22

Working To the Bone — Deep work, done gently

Working to the depth of the bone can seem counter-intuitive when the client is already in pain. But the work is slow and careful, warming layer by layer, so that by the time you reach the deep fascia and bone he is relaxed and trusting enough to allow it.

Bring blood to the tears. Fascia and tendon are poorly vascularised, so be thorough and creative in raising local blood flow.

Flush afterward. Flush the area to clear the accumulated metabolites once you finish.

Notes:

Source: Rattray & Ludwig (2000); Ruhani College Lecture 22

Getting Started — Positioning, hydrotherapy & rapport

Notes:

Ready the packs — Cold packs for the acute stage; moist warm packs for the chronic stage.

Don't under-drape — Your hands will find compensation — you'll work the low back, hips, and knees, not just the foot.

Support the limb — Place pillows and bolsters under the knees (supine) or ankles (prone).

Keep him engaged — He'll stay awake — offer a pillow so he can watch and learn as you instruct.

Source: Rattray & Ludwig (2000); Ruhani College Lecture 22

Aftercare & Safety

With months to recover, the client's daily self-care is the real engine of healing — supported by a few firm cautions that keep the work safe.

Notes:

Homework · Self-Care — What the client does daily

Daily stretching. Stretch the plantar fascia and calf daily — many home exercises mirror the table techniques.

Ease into mornings. Gentle stretching before the first steps blunts the worst morning pain.

Ice or heat by stage. Ice for acute, sharp pain; moist heat for the deep, dull pain of the chronic stage.

Support & moderate. Wear supportive shoes, keep to low-impact activity, and manage body weight.

Notes:

Source: Rattray & Ludwig (2000); Ruhani College Lecture 22

Contraindications & Cautions — Working safely

Stop at pain. Reproduce the pain to locate it, then stop — never push a stretch or palpation into pain.

Respect the acute stage. Keep acute work brief and gentle; deep work belongs to the settled chronic stage.

Refer red flags. Suspected fracture or fascial rupture, or a condition that worsens, warrants a physician.

Protect the fat pad. Be aware that steroid injections can thin the heel's fat pad; adjust expectations and pressure.

Notes:

Source: Rattray & Ludwig (2000); Werner (2019)

References and further reading

- Rattray, F., & Ludwig, L. (2000). Clinical Massage Therapy: Understanding, Assessing and Treating Over 70 Conditions. Toronto: Talus Inc.
- Travell, J. G., & Simons, D. G. (1999). Myofascial Pain and Dysfunction: The Trigger Point Manual (2nd ed.). Baltimore: Williams & Wilkins.
- Magee, D. J. (2014). Orthopedic Physical Assessment (6th ed.). St. Louis: Saunders / Elsevier.
- Lowe, W. (2009). Orthopedic Assessment in Massage Therapy. Sisters, OR: Daviau-Scott.
- Werner, R. (2019). A Massage Therapist's Guide to Pathology (7th ed.). Books of Discovery.
- Notes:

Key takeaways — Unload the foot, restore the tissue

Plantar fasciitis is micro-tearing and degeneration of the plantar aponeurosis — the top cause of heel pain, and usually self-limiting. Confirm the stage, rest the foot from impact without immobilising it, bring blood to the fascia with slow layer-by-layer work, and hand the client the daily self-care that carries recovery over months.

Notes:

Review questions

Answer these from memory before checking the answers below.

1. What is the plantar fascia, and what does it do?
2. Describe the pathology in plantar fasciitis.
3. Why is the pain characteristically worst with the first steps in the morning?
4. Which factors contribute to plantar fasciitis?
5. Outline the treatment approach.

Answers

1. A thick band of connective tissue running from the medial calcaneal tuberosity to the metatarsal heads. It supports the medial longitudinal arch and, through the windlass mechanism, tensions the arch during push-off.

2. Repetitive tensile loading produces micro-tearing at or near the calcaneal attachment. In longstanding cases the tissue shows degenerative change rather than active inflammation, which is why the term fasciosis is sometimes preferred.

3. Because the fascia shortens and the micro-tears begin to knit while the foot is unloaded overnight; the first weight-bearing steps re-stress and re-tear that tissue.

4. Tight gastrocnemius, soleus and Achilles tendon limiting dorsiflexion; pes planus or pes cavus; prolonged standing on hard surfaces; unsupportive footwear; rapid increases in loading; and increased body weight.

5. Release the plantar fascia and the intrinsic foot muscles, treat the posterior compartment — gastrocnemius, soleus and the Achilles — as the principal contributor to limited dorsiflexion, apply frictions at the calcaneal attachment within tolerance, and support with stretching, footwear and activity advice.