THE ORGANIC ATHLETE ACADEMY

YOUR FOUNDATION

Understanding the Foot & Ankle

Module 01 | Beginner + Coach’s Lab | Founding edition

A practical guide to two important shin muscles: tibialis anterior and tibialis posterior. Learn what they do, feel the movements, then apply the concepts to everyday training.

WHAT YOU WILL LEARN

- Describe ankle dorsiflexion, plantar flexion, inversion and eversion.
- Compare the roles of tibialis anterior and tibialis posterior.
- Understand concentric, eccentric and isometric muscle actions.
- Choose a simple movement drill and explain why it fits a client’s goal.

Educational use only. If a movement causes pain, stop and seek qualified guidance. Trainers should work within their training, qualifications and local scope-of-practice requirements.

01 Meet the movements

Beginner path • Your ankle and foot can move in different directions. These four terms describe basic components of movement.

TERM	PLAIN ENGLISH	TRY IT
Dorsiflexion	Bring the top of your foot toward your shin.	Keep your heel down and lift your toes.
Plantar flexion	Point your foot downward.	Rise onto your toes.
Inversion	Turn the sole of your foot inward.	Sit and turn your sole toward your other foot.
Eversion	Turn the sole of your foot outward.	Sit and turn your sole away from your other foot.

Memory map

Dorsi = up. Plantar = point down. Inversion = sole in. Eversion = sole out.

Real-world moment

Walking: as your foot swings forward, your toes must clear the ground. The anterior tibialis helps lift the foot. As your weight moves onto your foot, the posterior tibialis participates in controlling arch movement.

Try it

Seated, slowly perform 5 repetitions each of dorsiflexion, plantar flexion, inversion and eversion. Notice which parts of your lower leg activate. These movements involve multiple muscles; you cannot determine exact individual muscle activity by feel alone.

02 Tibialis anterior

Beginner path • The front-shin muscle that helps lift the foot and control foot lowering.

FEATURE	KEY POINT
Location	Along the front-lateral surface of the shin.
Concentric	Dorsiflexes the ankle and inverts the foot.
Eccentric	Controls plantar flexion and eversion.
Isometric	Contributes to supporting and stabilizing the arch.
Everyday example	Helps clear your toes during walking and moderates foot lowering after heel contact.

Coach’s Lab • Anatomy

- Origin: Lateral condyle and proximal two-thirds of the lateral tibia, plus adjacent interosseous membrane.
- Insertion: Medial cuneiform and base of first metatarsal on the medial/plantar foot.
- Innervation: Deep fibular (peroneal) nerve.

Practice • Toe lift

Stand with a hand on the wall, keep heels planted, and lift the forefoot 8-12 slow repetitions. The movement emphasizes dorsiflexion. Use comfortable range; do not force the ankle.

Check yourself

During the lifting phase, what is the main ankle action? _____. During controlled lowering, which contraction type is commonly involved? _____.

03 Tibialis posterior

Beginner path • A deep back-of-leg muscle that helps turn the foot inward and support the arch.

FEATURE	KEY POINT
Location	Deep posterior lower leg; tendon curves behind the inner ankle.
Concentric	Assists plantar flexion and inversion.
Eccentric	Controls dorsiflexion and eversion, contributing to pronation control.
Isometric	Supports and stabilizes the medial arch.
Everyday example	Contributes to foot control during standing, walking and calf raises.

Coach’s Lab • Anatomy

- Origin: Posterior tibia, fibula and interosseous membrane in the upper portion of the lower leg.
- Insertion: Broad tendon attachments to many tarsals and metatarsal bases, especially navicular tuberosity and medial cuneiform. The talus does not receive a direct insertion.
- Innervation: Tibial nerve.

Practice • Supported heel raise

With hands lightly against a wall, rise slowly onto both forefeet, pause briefly, then lower for 3 seconds. Try 8-10 controlled repetitions. The calf complex is a major contributor; the posterior tibialis assists with foot and arch control.

Memory trick

FRONT = foot up. BACK = point down. BOTH = turn in and help support the arch.

04 How muscles work

The contraction type describes how muscle force is produced. “Isolated” and “integrated” describe the exercise context or function, not a fourth contraction type.

ACTION	WHAT IS HAPPENING	FOOT/ANKLE EXAMPLE
Concentric	Muscle shortens while producing force.	Tibialis anterior helps lift the toes toward the shin.
Eccentric	Muscle lengthens while resisting a load.	Tibialis anterior controls lowering the front of the foot.
Isometric	Muscle produces force without major length change.	Tibialis posterior contributes to arch stability while standing.

Isolated vs integrated

Isolated: Seated banded inversion targets a particular ankle motion. Integrated: Walking, balance or squatting requires multiple joints, muscles and sensory systems working together. Even isolated exercises recruit more than one muscle.

Pronation is not a diagnosis

During normal weight acceptance the foot typically pronates: a combined motion involving ankle/foot joints, eversion and arch lowering. Pronation is a normal, useful part of gait. Its amount and timing differ among individuals.

Coach insight

A visibly lowered arch does not by itself prove weak tibialis posterior. Examine movement options, comfort, task demands and the whole kinetic chain, then choose exercises based on training goals.

05 Coach’s Lab: three clients

Use the scenario, decide on an appropriate training goal, and see how a simple drill can fit. These are fictional, general exercise examples.

CLIENT A • “I wobble when I stand on one leg.”

Goal: develop comfortable balance and foot control.

Exercise: supported single-leg stance, 2 × 20-30 seconds per side.

Cue: “Feel your heel and the bases of your big and little toes.”

Regress: fingertip support or shorter holds. Progress: reduce support gradually.

CLIENT B • “My feet move inward when I squat.”

Goal: explore stable, comfortable squatting without forcing a rigid arch.

Exercise: slow supported bodyweight squat, 2 × 6-10 repetitions.

Cue: “Maintain comfortable pressure through your foot as you lower.”

Observe ankle mobility, knee control, stance and comfort; avoid diagnosing one weak muscle.

CLIENT C • “I want better foot control for walking.”

Goal: build controlled ankle strength and capacity.

Exercise: double-leg heel raise, 2 × 8-12 with slow lowering.

Cue: “Rise smoothly, then lower in control.”

Progress load or range only when comfortable and movement remains controlled.

Red flags and referrals

Persistent medial ankle/arch pain, swelling, loss of function or symptoms that worsen with exercise call for assessment by a qualified healthcare professional. Do not provide diagnoses or promise that these drills treat injuries.

06 Four-minute movement lab

A short optional practice circuit for an otherwise comfortable, pain-free participant. Use deliberate movement and rest as needed.

MINUTE	MOVEMENT	PRIMARY LEARNING GOAL
1	Slow supported heel raises	Plantar flexion + controlled lowering
2	Supported single-leg balance	Arch and ankle stability
3	Controlled bodyweight squats	Foot stability in a multi-joint movement
4	Alternating reverse steps or lunges	Dynamic balance and control

Teach-back practice

Explain the difference between tibialis anterior and posterior to a friend without using scientific terminology. Then explain it again as though coaching a fitness client.

Trainer observation sheet

Client goal: _____

Movement observed: _____

Comfort / symptoms reported: _____

Chosen exercise + reason: _____

Regress / progress next time: _____

What to avoid

- Do not force a foot arch shape or remove all pronation.
- Do not label “weak posterior tibialis” based on a squat photo.
- Do not use pain as a reason to push harder or treat an injury with general fitness drills.

07 Knowledge check

Circle one answer for each question. Answer explanations are on the next page.

1. Which ankle movement lifts the forefoot toward the shin?

A. Plantar flexion B. Dorsiflexion C. Eversion

2. Which muscle is most associated with lifting the forefoot?

A. Tibialis anterior B. Tibialis posterior C. Soleus

3. Which action does tibialis posterior perform concentrically?

A. Eversion B. Dorsiflexion C. Inversion

4. During slow lowering from a heel raise, which muscle action is common?

A. Eccentric B. Concentric C. Passive only

5. Which nerve supplies the tibialis posterior?

A. Deep fibular B. Tibial C. Femoral

6. The posterior tibialis primarily inserts near which structure?

A. Navicular tuberosity B. Patella C. Femoral condyle

7. Is some pronation during walking normal?

A. No, never B. Yes C. Only in runners

8. A client’s arch visibly lowers in a squat. What should you do first?

A. Diagnose posterior tibialis weakness B. Assess broader movement and comfort C. Ban squats

08 Answers and explanations

1. B - Dorsiflexion

This moves the top of the foot toward the shin.

2. A - Tibialis anterior

It is a principal dorsiflexor and helps clear the foot during swing phase.

3. C - Inversion

Tibialis posterior contributes to inversion and plantar flexion.

4. A - Eccentric

The plantar flexors control lowering as the heels descend.

5. B - Tibial nerve

Contrast: tibialis anterior receives deep fibular innervation.

6. A - Navicular tuberosity

The tendon has broad attachments, including the medial cuneiform.

7. B - Yes

Pronation accommodates load and surfaces during gait.

8. B - Assess broader movement and comfort

A visible position does not establish a particular muscle weakness.

End-of-module reflection

The most useful thing I learned: _____

An exercise I can now explain better: _____

A question I still have: _____

Your next module

Foot and ankle mechanics: the calf complex, gait phases, and progressing lower-body strength. The Organic Athlete Academy - independent educational materials.