

BACK & NECK · FOR PHYSIOTHERAPISTS AND DOCTORS

Back and neck pain from the feet up (the kinetic chain)

Low back pain is the world's leading cause of disability, and the chain that carries it starts at the feet: when they roll in, the shins, thighs and pelvis turn with them. How far up the chain the evidence reaches, three tests of the base, a foot-strengthening programme, and a plan in three steps: arrest, balance, strengthen.

Saiyed Abdal · 16 Oct 2026 · Frido Care Academy

CLINICAL SUMMARY

What it is	The body loads as one chain. Feet that roll in turn the shins and thighs inward and tip the pelvis forward (measured in standing studies); above the pelvis the link weakens and the evidence is mixed.
How common	Low back pain affected 619 million people in 2020, the world's leading cause of disability; neck pain affected 203 million.
The foot link	Women whose feet roll in as they walk had about 50% higher odds of low back pain (Framingham, 1,930 adults); men showed no link.
Assess	The one-leg stand against age norms, a barefoot mirror check of the arches and knees, and the big-toe lift. Retest after 6 weeks of training.
First line	Stay active. Train the feet for more than 6 weeks (short foot, toe control, heel raises, one-leg stand) alongside the usual back and neck care; insoles only with the training, never alone.
Refer	Emergency: symptoms in both legs, saddle numbness, bladder or bowel change, chest pain or major trauma. Urgent: fever, unwell, or rapidly worsening pain; for the neck, symptoms in both arms or legs, weakness or poor balance.

START AT THE BASE

Frido Arch Support Insoles ₹1,299 ~~₹2,799~~

Barefoot Shoes to build foot strength as you walk; Portable Balance Trainer to make the one-leg stand harder. Supports feet that roll in while the arch strengthens, paired with foot exercises. No product cures back or neck pain on its own.



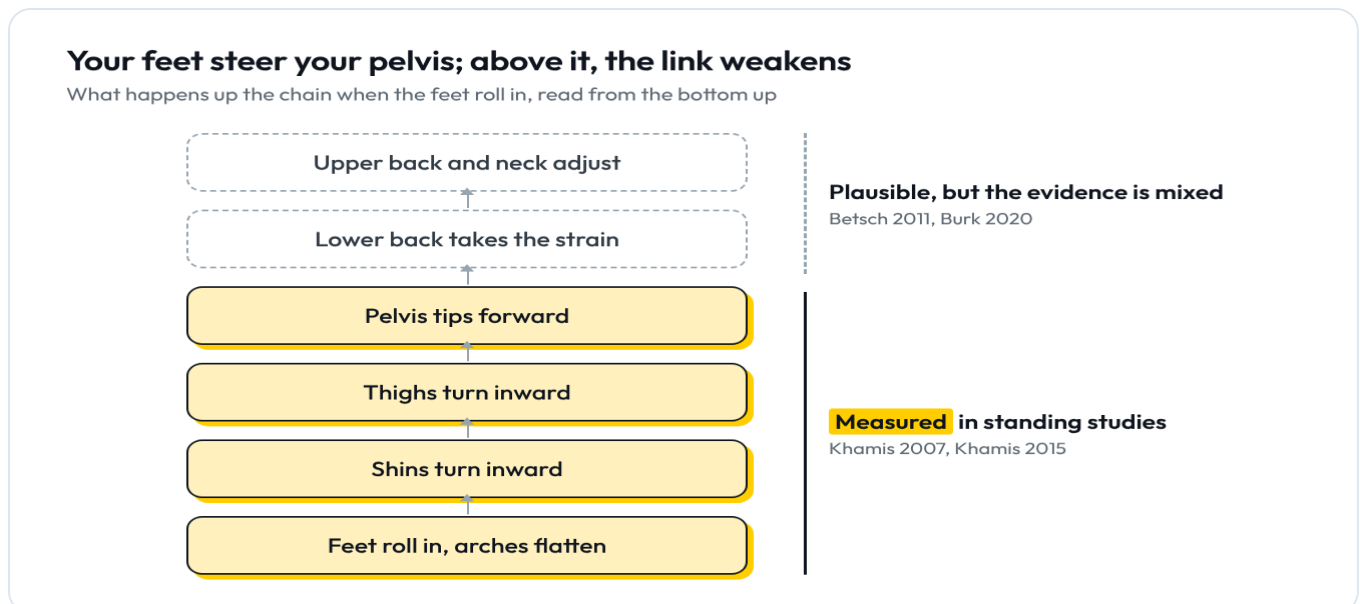
Patient view

Scan to open, or send it to your patient: the 1:59 video, home plan and safety-net in plain words.

01 One body, one chain

Every step sends force up one connected column: foot, shin, knee, thigh, pelvis, spine, shoulders and neck. In 35 healthy adults, wedges that rolled the feet in by 10° to 20° turned the shins and hips inward and tipped the pelvis

forward ([Khamis 2007](#)). The shin is the hinge that passes the roll to the thigh, and the thigh to the pelvis ([Khamis 2015](#)).



The chain from feet to neck. The lower links are measured; the higher you go, the more the chain depends on everything else the patient does.

Tissue ties the links as well as bone. A fascial line runs from the sole through the calf and hamstrings to the spinal muscles, and tension can travel along it ([Wilke 2016](#); [Krause 2016](#)). Its weakest joint is the first: the sole-to-calf link appeared in only 25 of 72 bodies studied, and fades with age ([Wilke 2016](#)).

Typical signs: arches that flatten and knees that turn in on standing, poor one-leg balance, and back or neck pain that builds with long standing or walking ([Khamis 2007](#); [Springer 2007](#)).

02 What the feet do to the back

619 million

people had low back pain in 2020, the world's leading cause of disability; neck pain affected another 203 million ([WHO](#); [GBD 2021, via Kolling Institute](#))

In 1,930 adults in the Framingham Foot Study, women whose feet rolled in as they walked had about 50% higher odds of low back pain; men showed no link ([Menz 2013, via Consultant360](#)). The wedge study's authors advise checking foot alignment whenever the pelvis or lower back is the problem ([Khamis 2007](#)).

Fixing the base helps some backs. In 225 adults with chronic low back pain, custom shoe orthotics improved pain and function over 6 weeks against no care ([Cambron 2017, via NUHS](#)). The orthotics came from a manufacturer linked to the study: one promising trial, not proof.

03 How far up it reaches: the neck

The neck sits at the far end of the chain, so its link to the feet is the least studied. Working the lower back line, such as calf and hamstring stretches, increased neck movement by about 5° (9%) across 8 small trials of 354 people: a small and uncertain gain ([Burk 2020](#)). The chain also loosens above the pelvis: in 51 adults, changing foot position shifted the pelvis but not the spinal curves ([Betsch 2011](#)).

So check the feet when the neck hurts, and give the neck its own care too: normal use, breaks from long sitting, and no long bed rest or soft collars ([UH Sussex NHS](#)).

04 Feet are one link, not the whole story

Strong feet are worth having, but they aren't a cure-all.

CLAIM	WHAT THE EVIDENCE SHOWS
Insoles prevent back pain	No. 6 trials, 2,379 people: no significant difference (risk ratio 0.78, 95% CI 0.50 to 1.23) (Chuter 2014)
Insoles treat existing back pain	Unclear. 5 trials, 293 people: no clear benefit (Chuter 2014); the 2017 orthotics trial is the main positive result since (Cambron 2017 , via NUHS)
The back needs its own care	Yes. Stay active; walking, swimming, yoga and pilates may help (NHS)

The fair reading: the feet are the first link, so check them, train them and support them when needed, alongside the rest of the back and neck care.

05 Check the base: three tests

TEST	HOW TO DO IT	WHAT IT TELLS YOU
One-leg stand	Barefoot, eyes open, arms crossed, near a wall; the best of 3 tries (Prehab Guys)	Typical times: about 45 s at 18–39, 41 s at 40–59, 32 s at 60–69 and 21 s at 70–79 (Springer 2007). Well under the age band: the base needs work
Mirror check	Standing barefoot, watch the arches and knees	Arches flattening and knees turning in is the roll that travels up the chain (Khamis 2007)
Big-toe lift	Lift only the big toe while the others stay down, then swap	If the toes move together, start with the exercises below (NHS Fife)

Retest after 6 weeks of training: arch exercises changed foot shape only in programmes longer than that ([Cheng 2024](#)). The patient view carries the same tests in plain words.

06 Strengthening the feet

Train the feet like any other muscle group: a few minutes a day, for more than 6 weeks. In 118 recreational runners, an 8-week foot-strengthening course cut the rate of running injuries 2.42-fold over a year ([Taddei 2020](#)).

- **Short foot:** draw the ball of the foot toward the heel without curling the toes.
- **Toe control:** the big-toe lift, toe spreading, and picking up small objects.
- **Heel raises and toe rocks,** holding a support.
- **One-leg stand,** fingertips on a wall, building up from 5–10 seconds.

Pair them with regular walking, which the NHS also lists among the activities that may ease back pain ([NHS](#)).

07 The Frido Care protocol: relieve, restore, reinforce

Pain travels along the chain, so the plan works along it too, in three steps: relieve the pain so the patient keeps moving, restore a level chain through the hours of sitting and sleep, then reinforce the base. The three tests show where the base stands.

STEP 1

Relieve

Calm a flare enough to keep moving



Orthopaedic Heating Belt
Electric heat on a timer for the lower back
₹2,599 ~~₹3,500~~



Hot and Cold Therapy Belt
A gel belt you microwave or freeze
₹1,299 ~~₹1,500~~



Five Finger Neck Massager
Heat and kneading for the neck
₹3,999 ~~₹5,000~~



Lumbo Sacral Belt
For heavy tasks during a flare, not all-day wear
₹1,299 ~~₹2,405~~

STEP 2

Restore

Keep the chain level through sitting and sleep



Cloud Seating Combo
Seat cushion plus a backrest for the lower back's curve
₹3,349 ~~₹6,708~~



3D Posture Plus Ergonomic Chair
Adjustable lumbar support for desk work
₹17,499 ~~₹30,000~~



Ultimate Mattress Topper
A memory-foam layer for a very hard bed
₹4,409 ~~₹7,599~~



Ultimate Cervical Pillow
Two heights; pick the one that keeps your head level
₹1,199 ~~₹2,500~~

STEP 3

Reinforce

Build the base so the chain starts straight



Arch Support Insoles
Semi-rigid support for feet that roll in, worn with the exercises
₹1,299 ~~₹2,799~~



Barefoot Shoes
Zero-drop sole and a roomy toe box; build up over weeks
₹3,899 ~~₹6,000~~



Portable Balance Trainer
A cork kit with two half-domes: a harder one-leg stand
₹2,299 ~~₹4,000~~

Prices as listed on myfrido.com on 16 Oct 2026; check the product page for today's price.

08 Step 1: Relieve the pain

Calm a flare enough to keep moving, because staying active is the core advice for back pain (NHS).

OPTION	WHAT THE EVIDENCE SHOWS
Heat for the lower back (Heating Belt; Hot and Cold Belt)	Heat wraps give a small, short-term drop in pain, and adding exercise lowers it further; the evidence for cold is too thin to judge (French 2006)
Heat and kneading for the neck (Neck Massager)	The NHS suggests heat for neck pain, 20 minutes at a time (NHS); massage eases neck pain in the moment, with no lasting effect shown (Cheng 2014)
A belt for heavy days (Lumbo Sacral Belt)	In 197 people with subacute pain, a belt improved function at 90 days and more needed no medication (61% vs 40%) (Calmels 2009). But Cochrane calls the evidence unclear (van Duijvenbode 2008, Cochrane), and NICE says not to offer belts for managing back pain (NICE 2016)

Use the belt for demanding tasks during a flare, not all-day wear.

09 Step 2: Restore stability

Keep the chain level through the long, still hours of sitting and sleep.

- **Sitting.** A backrest that supports the lower back's curve, as an NHS neck-pain leaflet advises for long sitting (UH Sussex NHS): the Cloud Seating Combo. For desk work, a highly adjustable chair plus ergonomics training slowed the build-up of aches over the day in a 12-month office trial; training alone didn't (Amick 2003).
- **Sleeping.** In 313 people with chronic back pain, a medium-firm mattress beat a firm one for pain in bed and disability at 90 days (Kovacs 2003). The Mattress Topper adds a memory-foam layer to a very hard bed.

- **The neck at night.** A low, firm pillow that keeps the head level with the body ([NHS](#)); the Cervical Pillow has two heights to pick from.

No support replaces movement: stand up and move as often as possible ([UH Sussex NHS](#)).

10 Step 3: Reinforce: strengthen and prevent

The root-cause step: build the base so the chain starts straight.

- **Train the arch.** In 46 people with low back pain and feet that roll in, short-foot exercises improved back pain, disability and foot posture; the group without them didn't change ([Mahmoud 2022](#)).
- **Walk it stronger.** In 57 runners, 8 weeks in minimalist shoes built foot muscle size and strength as well as foot exercises did ([Ridge 2019](#)). Frido's Barefoot Shoes have the zero-drop sole and roomy toe box of a minimalist shoe; build up over weeks, as the study's lead author advises ([IDEA Health & Fitness](#)).
- **Add balance.** The Portable Balance Trainer's two cork half-domes make a harder one-leg stand.
- **Support the arch while it strengthens.** In 40 people with painful flat feet, short-foot exercises plus insoles beat insoles alone for pain and function at 6 weeks ([Elsayed 2023](#)). Insoles alone haven't been shown to prevent back pain ([Chuter 2014](#)), and NICE says not to offer them for managing it ([NICE 2016](#)), so pair them with the training.

11 Does it cure back and neck pain? Partly

VERDICT: PARTLY

Each step works on a link the evidence points to, but no product cures back or neck pain on its own, and the best-supported treatment is still staying active and exercising ([NHS](#); [NICE 2016](#)). The protocol is built to make that easier.

PART OF THE PROBLEM	HELPED?	WHY
A flare that stops movement	Short term	Heat gives a small, short-term drop (French 2006)
Feet that roll in	Yes, with training	Short-foot exercises improved posture and back pain (Mahmoud 2022); insoles help most alongside them (Elsayed 2023)
Weak feet and poor balance	Yes	8 weeks of exercises or minimalist shoes build foot strength (Taddei 2020 ; Ridge 2019)
Long sitting and poor sleep	Partly	Adjustable seating and a medium-firm bed help (Amick 2003 ; Kovacs 2003)
Neck pain	Least	The foot-to-neck link is small and uncertain (Burk 2020); the neck needs its own care (UH Sussex NHS)

Can say: supports the feet, the seat and the sleep that load the chain; makes staying active easier; pairs with exercise. **Can't say:** cures back or neck pain; insoles prevent back pain; "clinically proven". We found no study of Frido's own products.

12 Assessment, referral and plan

Assess: the three tests of the base (one-leg stand against age norms, mirror check, big-toe lift), alongside the usual back and neck examination ([Springer 2007](#); [Khamis 2007](#)).

Refer urgently. Emergency for back pain with pain, tingling, weakness or numbness in both legs, loss of feeling around the genitals or bottom, a change in bladder or bowel control, chest pain, or pain after a serious accident; urgent if it comes with a fever or feeling unwell, or is severe and getting worse quickly (NHS). For the neck: pins and needles in both arms or legs, muscle weakness, poor balance or difficulty walking, or a change in bladder or bowel control (UH Sussex NHS).

SETTLE Weeks 0–2

- Keep moving; heat for flares; a belt only for heavy tasks.
- Check the seat, the bed and the pillow.

RESTORE Weeks 2–6

- Daily foot programme: short foot, toe control, heel raises, one-leg stand.
- Insoles for feet that roll in, worn with the training; barefoot shoes built up slowly.

REVIEW Week 6 on

- Retest the three tests; progress balance to the half-domes.
- Reassess if pain isn't improving or any red flag appears.

In the Frido Care app, add a product to the plan only when your findings call for one; you accept, edit or drop every suggestion. Frido ships it to the patient directly.

13 Talking to the patient

Explain it in plain words

"Your body works like one chain, and your feet are the first link. When they roll in, your knees and hips turn with them. Stronger feet won't fix everything, but they give the rest of your back and neck care a straighter start."

Their daily routine

A few minutes of foot exercises a day for more than 6 weeks, a walk, breaks from long sitting, and heat during a flare. No long bed rest; the belt only for heavy tasks; insoles with the exercises, not instead of them (NHS; NICE 2016).

Send the patient view

The patient view has the explainer, the three home tests, the four exercises, the three-step plan and the safety-net in plain words, and leaves out everything clinical. Send it with **Send to patient** at the top of this page.

Safety-net every patient: come back sooner for numbness or weakness in both legs or arms, a change in bladder or bowel control, a fever with the pain, or pain that keeps getting worse (NHS; UH Sussex NHS).

14 Exercises that build the base

EXERCISE	HOW MUCH	DEMO	HOW-TO
Short foot (draw the ball of the foot toward the heel without curling the toes)	3–5 times, daily	Watch	NHS Fife podiatry
Toe control (big-toe lift, toe spreading, picking up small objects)	5 times each, daily	Watch	NHS Fife podiatry
Heel raises and toe rocks (hold a support, rise onto the toes, rock back onto the heels)	10 slow repeats, daily	Watch	Royal Devon NHS: balance exercises
One-leg stand (fingertips on a wall)	5–10 seconds, 3 times each side, then build up	Watch	NHS: balance exercises

Retest the one-leg stand after 6 weeks; foot shape changed only in programmes longer than that ([Cheng 2024](#)).

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Frido Care Academy is written for physiotherapists and doctors. This guide summarises published evidence to support, not replace, clinical judgement. Online version with the patient explainer and exercise demos: <https://care.myfrido.com/academy/feet-back-and-neck-pain/>