AO HOOPS

The Foundation

Build the Tendons. Lose the Strap.

10 Minutes | 3× per Week | Built for Female HS Basketball

Read this first. This is not a warm-up. This is a build. The work is short, slow, and unglamorous — and it's the only thing that actually changes your tendons. Eight to twelve weeks of consistent reps, and the strap becomes optional.

WHAT YOU NEED

Time	10–12 minutes per session.
Frequency	3× per week. Mon / Wed / Fri works. Or any days off from heavy practice.
Equipment	One resistance band, a wall, a step or low stair. That's it.
Block length	8–12 weeks for real change. Most girls feel it by week 3–4.

The rule. Tendons adapt 4–6× slower than muscles. That's why this takes weeks, not days — and why you can't skip days and expect results.

WHY THIS EXISTS

Look at any high school girls' team bench.

Half the players are wearing a black strap below their kneecap. It's so common nobody questions it anymore — it's just "what basketball players wear." That's wrong. The strap is a sign of an injury that's already happening. It's called patellar tendinopathy — "jumper's knee" — and it shows up in 40 to 50% of high school and elite jumping athletes. The strap manages the pain. It does not fix the tendon.

WHY GIRLS ARE AT HIGHER RISK

3–8× Higher ACL injury rate in female athletes vs male — driven by the same kinetic-chain issues that cause jumper's knee.

15.8° Average female Q-angle (vs 11.2° in males). Wider angle = more lateral pull on the kneecap and more tendon stress on every jump.

100 Approximate landings per practice for a varsity player. Plus games. Plus club. The volume is the problem; the tendon is the casualty.

The fix isn't more rest. It's the right load.

Tendons are not muscles. Jumping doesn't make them stronger — it just damages them. To build a tendon, you need slow heavy load and long held positions. That's what The Foundation is. Three sessions a week, ten minutes each, for eight to twelve weeks. By the end, the tendon is structurally different — denser, stiffer, and capable of handling everything basketball throws at it.

For parents: The strap doesn't fix anything. It changes how the load gets shared across the tendon during a game. Useful in the moment — but if that's the only intervention, the tendon keeps degrading underneath. The Foundation is what happens off the court that makes the strap unnecessary on it.

HOW TO USE IT

When to do it

- **3× per week**
  Mon / Wed / Fri is the cleanest pattern. If you have practice Tue / Thu / Sat, do The Foundation on the days off.
- **6+ hours from heavy jumping**
  If you have a hard practice or game, do The Foundation either the morning before (with 6+ hours buffer) or the next day. Never right after a game.
- **Skip game days**
  Don't do The Foundation on game days at all. Tendons need rest from heavy load when they're about to take a beating in competition.
- **Don't double up**
  If you miss a session, do not stack two on the same day. Just pick it back up the next scheduled day. Consistency over intensity.

What to take 30–60 minutes before

There's one nutritional protocol with strong evidence behind it for tendon adaptation. It's cheap, simple, and roughly doubles the tendon's collagen-building response in the hours after loading.

15 grams — Hydrolyzed collagen powder
Any unflavored brand at a grocery store or pharmacy works. Mix into water, juice, or a smoothie.

50 mg — Vitamin C
From any standard supplement, or from 4 oz orange juice / a small kiwi / half a bell pepper. Vitamin C is the cofactor — collagen doesn't synthesize properly without it.

For parents: Cost is around $15–20 per month at any grocery store. This is the cheapest, most evidence-backed thing you can do for a jumping athlete's knees. Take it 30–60 minutes before The Foundation — that timing matters.

01 Build the Tendon ~6 min

Slow, held positions. The tendon learns under load.

1. Spanish Squat Hold — 3 × 45 sec

You need a sturdy anchor at about knee height — a squat-rack upright works perfectly. At home, wrap the band low around a heavy bedpost, a couch leg, or a banister support. Outside, a fence post or sign post works. (Skip doorknobs — they're way too high.) Loop a heavy resistance band around the anchor so both ends hang free. Step backward into the loop so the band wraps around the back of your knees — right in the soft crease behind the kneecaps. Walk forward, away from the anchor, until the band pulls tight and feels like it's tugging you backward. From there, sit straight down into a deep squat. The band is what makes this work — it pulls you back, so you can sit down with vertical shins instead of letting your knees dive forward over your toes. Think "lowering into a chair," not "leaning forward to squat." Hold for 45 seconds. Rest 90 seconds. Three sets total.

> Form check: Hips below knees. Chest up. Heels flat. Shins as vertical as possible. You should feel deep tension in the front of your knees — that's the tendon loading.

This is the cornerstone. The Spanish squat puts the patellar tendon under continuous load at the exact length it works at during a landing. Forty-five seconds is long enough to drive an adaptation signal without grinding the joint.

2. Deep Split Squat Hold — 2 × 30 sec/leg

Take a long step forward with one foot — bigger than a normal lunge. Lower your body straight down so your back knee drops toward the floor and your front knee bends deeply, past 90 degrees. Your front shin can stay vertical or lean slightly forward — both are fine. Sink down as low as you can comfortably go and hold that bottom position for 30 seconds. Switch legs. Two sets per side.

> Form check: Front foot stays flat — don't let the heel come up. Front knee tracks over your second/third toe (don't let it cave inward). If your back knee touches the floor, that's fine — rest it there gently and keep going. The work is happening in the front leg.

Single-leg version of the same idea. Most basketball loading is single-leg — landings, cuts, plants. Training the tendon at long length on one leg matches what the game asks for.

3. Slow-Tempo Calf Raises on a Step — 3 × 12 each leg

Stand on a step or low stair with the balls of your feet on the edge — your heels should be hanging off the back. Hold a wall or rail with one hand for balance. Lift one foot off the step entirely so all your weight is on the working leg. Push up onto the ball of your foot slowly — count 3 seconds going up. Pause for 1 second at the top, fully on tip-toes. Then lower yourself slowly — 3 seconds going down — until your heel drops below the level of the step. That's one rep. Do 12. Switch legs. Three sets per side.

The Achilles tendon takes the same kind of load the patellar tendon does. Strong calves protect the knee — when the ankle absorbs more of the landing force, the patellar tendon eats less of it.

02 Fix the Chain ~5 min

The tendon is where it hurts. The cause is usually somewhere else.

4. Patrick Step (Slow Step-Down) 2 × 10 each leg

Stand on a step about 6–8 inches high (a normal stair works) on one leg. Let the other leg hang off the side, toes pointed slightly up so they don't catch. Slowly bend the standing knee, lowering your body down — count 3 full seconds — until the heel of your hanging leg lightly taps the floor. (Don't put weight on it. Just touch.) Then drive back up to standing in 1 second. That's one rep. Do 10. Switch legs. Two sets per side.

> Form check: Standing knee tracks over your second/third toe. No collapse inward. If your knee caves in toward the midline of your body even once, stop and reset.

This is heavy slow resistance for the patellar tendon — but single-leg, with full-body weight as the load. Three seconds down is the minimum eccentric tempo for tendon adaptation.

5. Glute Med Combo Clams 15 + Abductions 15/side

Lie on your side, knees bent at 90° and stacked, hips and shoulders in line. Rest your head on your bottom arm. Clams (15 reps): Keep your feet pressed together and lift the top knee toward the ceiling — as high as you can without rolling your hips backward. Lower with control. Slow and clean, no rocking. Hip abductions (15 reps, same side): Straighten the top leg and lift it straight up toward the ceiling, leading with your heel (not your toe). Lower with control. Then roll over and repeat the full sequence on the other side.

The glute medius is the muscle on the side of your hip that keeps your knee from collapsing inward when you land or cut. For female athletes, this is the single most important muscle for both ACL prevention and patellar tendon health. If your knee dives inward, your tendon takes the punishment.

6. Knee-to-Wall Ankle Mob 10 each side

Stand facing a wall. Place the big toe of one foot about 4 inches (a hand's width) from the wall. Without lifting your heel off the floor, drive your knee straight forward to touch the wall with the front of your knee. Your heel must stay glued to the floor — that's the whole point. Come back. That's one rep. Do 10. Switch legs. If you can't reach the wall at 4 inches without your heel lifting, start at 2 inches and work outward over the weeks.

Stiff ankles are the silent driver of patellar tendinopathy. When your ankle can't bend enough on landing, the load gets dumped into your knee instead. Restoring this range alone solves a lot of knee problems.

7. Backward Walk (or Backward Incline) 60–90 sec

Walk backward across a room, down a hallway, or up a slight incline (a driveway works great). Take normal-sized steps. Keep your knees soft (slightly bent — never locked). Move at a steady, moderate pace. Sixty to 90 seconds total. Bodyweight is plenty; a light sled or vest is optional.

Backward walking activates the muscle on the inside of your knee (the VMO) that protects the kneecap, and pumps blood through the patellar tendon area. Closer to a recovery tool than a strength drill — but it works.

What to expect, week by week

Week 1–2

You'll feel sore in places you don't usually feel sore — the front of your knees, your shins, the side of your hips. That's normal. Don't expect pain reduction yet.

Week 3–4

Morning stiffness should start to fade. The first few minutes after you get out of bed will feel less creaky. Pain during games may still be present but should feel less sharp.

Week 5–8

Pain during and after games drops noticeably. You'll feel like you can stay on the floor longer without your knees "loading up." This is when most girls realize they're not reaching for the strap.

Week 8–12

Structural changes. The tendon is denser and stiffer. Pain should be at or near zero for most athletes. The strap is optional — most girls stop wearing it on their own.

When to stop and see a doctor

The Foundation is safe for the vast majority of jumper's-knee pain. But if any of the following show up, stop the protocol and book a visit with a sports medicine doctor or physical therapist:

- Sharp, shooting, or stabbing pain (different from the deep dull loading sensation you should feel during the holds)
- Pain bad enough to wake you up at night
- Visible swelling or a soft lump at the kneecap or below it
- Pain that does not return to baseline within 24 hours of a session
- Grinding, clicking, or catching during knee bend
- Pain that's getting worse week over week instead of better after 4 weeks of consistent work

OPTIONAL • 60-SECOND SELF-SCREEN

Should The Foundation be a priority for you?

Skip this page if you're already wearing a strap or already have knee pain — the answer is yes. Use it if you want to know your risk before pain shows up. Run all four tests. Add up your flags.

1. Knee-to-Wall Test

Big toe 4 inches from a wall. Drive your knee to touch the wall without your heel lifting. Both legs.
Flag if: Can't reach the wall at 4 inches on either side.

2. Single-Leg Pelvic Drop

Stand on a step on one leg, let the other leg hang off the side. Look in a mirror or have someone watch your hips.
Flag if: The hanging-side hip drops noticeably below the standing-side hip.

3. Hop & Stop

Hop in place 3 times, then land and freeze in a soft stance. Watch your knees in a mirror.
Flag if: Either knee tracks inward (caves toward the midline) on the landing.

4. Single-Leg Squat

Stand on one leg. Squat down as far as you can with control. Repeat 3 times each side.
Flag if: Knee caves in, you lose balance, or you can't get below half-depth.

RESULTS

- **0–1 flags**
  Low risk. The Foundation is still good insurance, especially in season — but it's not urgent.
- **2 flags**
  Moderate risk. Start The Foundation. Three sessions a week for 8 weeks minimum.
- **3–4 flags**
  High risk. Start The Foundation immediately. Tell your coach. If you're already symptomatic, see a sports medicine doctor.

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The strap is optional. Strong tendons are not.

Earned, Not Given • Next-Play Speed • Don't Judge • Family Standard

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