

Knee

Anterior pain, growth-related pain, tendon load, twisting, and instability

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What this guide helps you do. Use this guide to locate knee pain, separate gradual anterior-knee patterns from acute twisting or instability, account for adolescent growth areas, and choose safer modifications for pli  , turnout, landing, kneeling, and floorwork.

Scope. Educational guidance for dancers, families, and teachers. It supports safer decisions and clearer communication; a clinician determines diagnosis and individualized restrictions.

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1 How to use this guide

This guide is designed for a dancer who has pain now, or who keeps developing the same problem. Its job is to help you describe the pattern, make a safe class decision, and communicate clearly with a parent, teacher, or clinician. It cannot determine the diagnosis from symptoms alone.

Key idea

Use four observations together: **exact location, how it began, which movement provokes it, and what happens later that day or the next morning.** One symptom by itself is rarely specific enough.

1.1 The four-question check

1. **Where?** Point with one finger. A one-fingertip spot on bone is more concerning than broad, symmetrical muscle soreness.
2. **When?** Sudden fall, twist, pop, collision, or landing; or gradual pain that built over several classes.
3. **What load?** Walking, stairs, plié, relevé, turnout, extension, jumps, pointe, floorwork, lifts, or repeated rehearsal.
4. **What response?** Better after warm-up, steadily worse with repetition, painful at rest, or worse the next morning.

MODIFY

Mild but recurring or movement-specific pain: remove the painful element and tell a teacher, parent, or guardian.

STOP

Pain changes technique, grows with repetition, causes limping, weakness, swelling, loss of motion, or instability.

SEEK CARE

Focal bone pain, deformity, inability to use or bear weight, locking, neurologic signs, rest/night pain, or a serious fall.

SEEK MEDICAL CARE

A dancer who is a minor should tell a parent or guardian about a significant injury. Urgent evaluation is appropriate for deformity, inability to use or bear weight on the part, rapidly increasing swelling, an open wound, a cold or pale limb, persistent numbness, progressive weakness, or serious head, neck, or spine symptoms.[1]

2 Know the region

The knee transfers force between hip and foot while flexing and extending. The kneecap moves in a groove at the front of the femur, the patellar tendon connects it to the tibia, menisci distribute joint load, and ligaments guide stability. In growing dancers, tendon attachment areas near the kneecap and tibial tubercle can become painful. Alignment during plié and landing depends on hip control, foot control, available turnout, and fatigue - not on the knee alone.[2, 3]

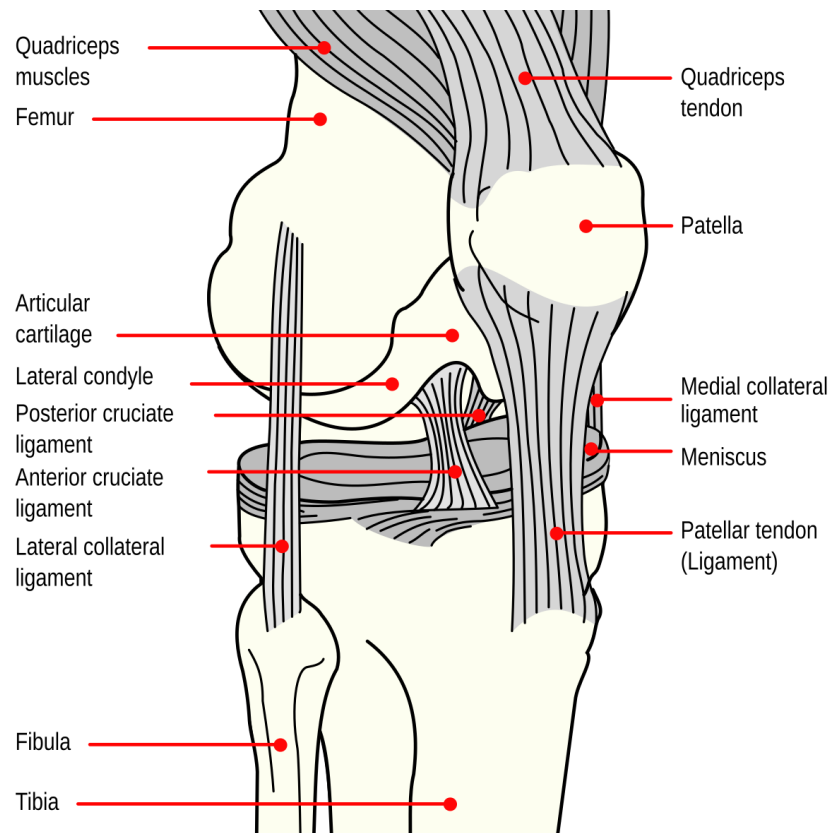


Figure 1. Major structures of the right knee, including the patella, menisci, cruciate ligaments, collateral ligaments, and extensor tendons. Source: Mysid, based on a U.S. government image; public domain in the United States, via the [Wikimedia Commons source page](#); white background and crop added.

In dance

Forced turnout can create rotation at the knee or foot when the hip lacks or cannot control the requested range. Deep pli , repeated jumps, kneeling, floorwork, and rapid growth can change the load on the patellofemoral joint and tendon attachment areas.

3 Find the symptom pattern

Location and behavior	Pattern it can resemble	Dance clues	First decision
Around or behind kneecap, gradual	Patellofemoral pain	Pli�, stairs, prolonged sitting, jumps, repeated knee bend	Reduce painful depth and impact; assess hip-foot-knee control
Below kneecap, load-related	Patellar tendon pain	Jump takeoff/landing, repeated grand pli�, kneeling	Reduce high tendon load; gradual strength plan may be needed
Painful bump at tibial tubercle in a growing dancer	Osgood-Schlatter pat-tern	Running, jumping, kneeling, deep flexion	Modify load and protect from direct pressure; assess persistent pain

Pain at lower edge of kneecap in a growing dancer	Sinding-Larsen-Johansson pattern	Jumping and forceful quadriceps load	Modify impact and deep flexion; obtain assessment
Joint-line pain, locking, catching, or painful twist	Meniscal or joint injury pattern	Turn, pivot, deep squat, acute twist	Stop twisting/deep flexion and seek assessment
Pop with swelling or giving way	Ligament injury pattern	Acute landing, collision, or uncontrolled turn	Stop and seek prompt evaluation
Pain behind knee with forced hyperextension	Posterior capsule, tendon, or other posterior pattern	Locked-knee standing, arabesque support, over-stretched landing	Remove hyperextension and assess persistent or swollen symptoms

4 Common knee injury patterns

Patellofemoral pain

Usually feels like. Diffuse pain around or behind the kneecap with stairs, squatting, plié, jumps, or prolonged sitting.

Do today. Reduce painful depth, jump volume, and repeated one-leg loading. Keep the knee tracking over the functional foot line without forcing turnout.

Rehabilitation principle. Management often combines education, load adjustment, and progressive hip and knee exercise rather than relying on passive treatment alone.[4]

Patellar tendon pain

Usually feels like. Localized pain below the kneecap that is related to jumping or heavy knee-extensor load.

Do today. Reduce jumps, deep repetitive plié, and other high-load movements. Complete rest for a long period may reduce capacity; progressive loading should be individualized by a clinician.[4]

Osgood-Schlatter and Sinding-Larsen-Johansson patterns

Usually feels like. Tenderness at a growth-related tendon attachment: the tibial tubercle below the knee or the lower pole of the kneecap.

Why adolescence matters. Growth plates and apophyses can be more vulnerable while long bones and muscles are changing at different rates.[2, 5]

Do today. Modify impact, deep flexion, and kneeling to symptom tolerance. A structured activity and strengthening plan can support recovery.[6]

Meniscal or internal joint pattern

Usually feels like. Joint-line pain after a twist or deep flexion, sometimes with catching, locking, swelling, or inability to fully straighten.

Do today. Stop pivots, deep plié, kneeling, and loaded twisting. Do not force a locked knee.

Seek care when. The knee locks, swells significantly, cannot fully move, or symptoms follow an acute twist.

Ligament sprain and instability

Usually feels like. A pop, rapid swelling, giving way, or instability after an awkward landing, collision, or forced direction change.

Do today. Stop dancing, protect the knee, and arrange prompt evaluation.

Urgent signs. Deformity, inability to bear weight, a cold or numb foot, or severe swelling.[1]

Hyperextension-related posterior knee pain

Usually feels like. Pain at the back of the knee during locked-knee standing, forced extension, or an overstretched landing.

Do today. Use an active, controlled straight-knee position rather than pressing into the back of the joint. Persistent swelling, instability, or a traumatic mechanism needs assessment.

5 What to do today

5.1 Protect the irritated area from repeated testing

- ✓ End the movement that reproduces sharp, focal, unstable, or escalating pain.
- ✓ Tell the teacher exactly which movements provoke symptoms. Replace those movements rather than silently reducing their quality.
- ✓ Keep ordinary movement that is comfortable and does not worsen symptoms later, unless a clinician has instructed complete rest or protection.
- ✓ Record location, onset, swelling, bruising, clicking, weakness, and the next-morning response.
- ▲ Avoid repeatedly hopping, forcing range, stretching hard, rolling directly over a focal bone spot, or “checking” the injury every few minutes.
- ▲ Do not use pain medicine, tape, or a warm-up as proof that the tissue is ready for full dancing. Symptom masking can hide worsening load intolerance.

Why this matters

A short period of protected cold may reduce discomfort after an acute injury if skin sensation is normal and the cold source is wrapped. It does not accelerate every type of healing and it is not a readiness test. Swelling, function, location, and response to load matter more than whether the area feels temporarily numb.

5.2 Communication script

Practical script

“The pain is at [exact location]. It began [suddenly / gradually] during [movement]. It is [better / the same / worse] with walking and is [better / worse] the next morning. I also notice [swelling, bruising, weakness, clicking, locking, numbness, or none]. I need to remove [specific movement] until this is assessed or settles.”

6 Knee-specific class modifications

MODIFY AND REPORT

Possible substitutions include smaller pain-free demi-plié, first position rather than fifth when it reduces rotational demand, marking jumps without leaving the floor, avoiding kneeling sequences, and using supported or seated work. Keep turnout within controlled hip range.

STOP THE PROVOKING ACTIVITY

Stop if the knee gives way, catches or locks, swells, cannot fully straighten, or pain causes the knee to collapse inward, the foot to roll, or the dancer to avoid one side.

SEEK MEDICAL CARE

Prompt evaluation is appropriate for a pop, significant swelling, instability, locking, inability to fully move, focal growth-area pain that persists, or symptoms after an acute twist. Urgent evaluation is appropriate for deformity, inability to bear weight, or neurovascular signs.[1, 2]

7 Returning to dance

Return should be based on function and symptom response rather than the number of days since the pain began. Dance-medicine literature supports staged progression from basic movement to dance-specific demand rather than a direct jump into full class.[7]

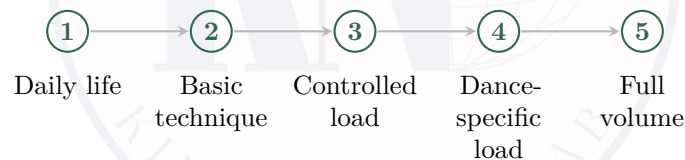


Figure 2. General return sequence. Advance only when the current step is controlled and does not create a meaningful symptom increase later that day or the next morning. Region-specific restrictions take priority.

Key idea

A stage is tolerated only when symptoms remain acceptable **during the activity, later that day, and the next morning**. New swelling, limping, altered alignment, loss of control, or a clear pain increase means the load exceeded current capacity.

7.1 Knee progression

1. Comfortable walking, stairs, sitting, and basic knee motion.
2. Controlled squat or demi-plié within the permitted range without collapse or pain increase.
3. Supported barre and single-leg balance.
4. Centre control, slow turns, and deeper range only as tolerated.
5. Two-leg small jumps with symmetrical takeoff and landing.
6. One-leg jumps, repeated sequences, and directional changes.

7. Large jumps, fast turns, kneeling/floorwork, and role-specific demands.
8. Full class and rehearsal volume without swelling or next-day escalation.

8 Reducing recurrence

No single stretch, shoe, or screening test prevents every dance injury. The most useful prevention system combines load management, technique, physical capacity, recovery, and early communication.[8, 9]

1. **Track meaningful load changes.** New pointe work, more jumps, longer rehearsals, harder flooring, a role change, a growth spurt, and added cross-training can all increase tissue demand.
2. **Build capacity outside choreography.** Strength, balance, landing control, trunk control, and gradual exposure give tissues a larger margin before fatigue changes technique.
3. **Use available range rather than forcing an ideal.** Turnout, extension, pointe range, and back extension should come from the joints that possess that motion, with control.
4. **Recover enough to adapt.** Sleep, rest days, and regular meals and snacks support repair. Recurrent bone-stress injuries, persistent fatigue, declining performance, delayed or disrupted menstrual function, or other signs of under-fuelling deserve confidential medical and nutrition support.[5, 10]
5. **Report early.** A small, repeatable symptom is easier to modify than a pattern that has already changed walking, class technique, or sleep.

9 Bring this information to an assessment

Exact location	_____
Date and mechanism of onset	_____
Sudden or gradual	_____
Dance movements that provoke it	_____
Walking, stairs, sleep, or rest symptoms	_____
Swelling, bruising, clicking, locking, weakness, numbness	_____
Recent change in class, rehearsal, pointe, jumps, floorwork, lifts, or cross-training	_____
What improves it; what worsens it the next morning	_____
Prior injury to the same area	_____

Key idea

Bring shoes or equipment associated with the symptoms when useful, and bring a short video only if recording was safe and the movement did not require provoking a potentially serious injury again.

10 Evidence scope and limitations

This guide prioritizes dance-medicine reviews, pediatric and sports-medicine guidance, clinical practice guidelines, and authoritative professional resources. Research on dancers is uneven across genres and body regions; evidence from related weight-bearing or artistic sports is used only where the mechanical demand is clearly similar. Individual diagnosis, imaging, treatment, and return restrictions belong to a qualified clinician who can examine the dancer.

Key idea

Medical review date: July 2026. Suggested review cycle: every two years, or sooner when a major guideline changes. Kinesphere Lab should obtain review by a physician or physical therapist with dance-medicine experience before studio-wide clinical distribution.

Selected evidence and guidance

- [1] American Academy of Pediatrics. *After a Sports Injury: When to See the Doctor*. 2025. URL: <https://www.healthychildren.org/English/health-issues/injuries-emergencies/sports-injuries/pages/After-a-Sports-Injury-When-to-See-the-Doctor.aspx> (visited on 07/18/2026).
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- [3] “The influence of ballet grand plie on knee joint rotation and loading”. In: *Journal of Dance Medicine and Science* (2018). URL: <https://pubmed.ncbi.nlm.nih.gov/30204825/> (visited on 07/18/2026).
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- [11] International Association for Dance Medicine and Science. *Technique Class Participation Options for Injured Dancers*. 2025. URL: <https://iadms.org/media/24lfewse/iadms-resource-paper-technique-class-participation-for-injured-dancers.pdf> (visited on 07/18/2026).