

Back

Mechanical or Gymnast Low Back Pain

Described as an injury to the low back which is usually a diagnosis of exclusion, meaning other injuries were previously ruled out based on signs/symptoms, physical exam, and diagnostics tests (x-ray or MRI).

Mechanism of Injury

Gymnasts who are performing repetitive flexion and extension can irritate their lumbar spine by having poor mechanics at the lumbar spine.

Physical Exam

On exam, you may have tenderness to palpation (touch) on your lumbar spine, pain with flexion (bending forward) and/or pain with extension (arching backwards).

Diagnostic Images

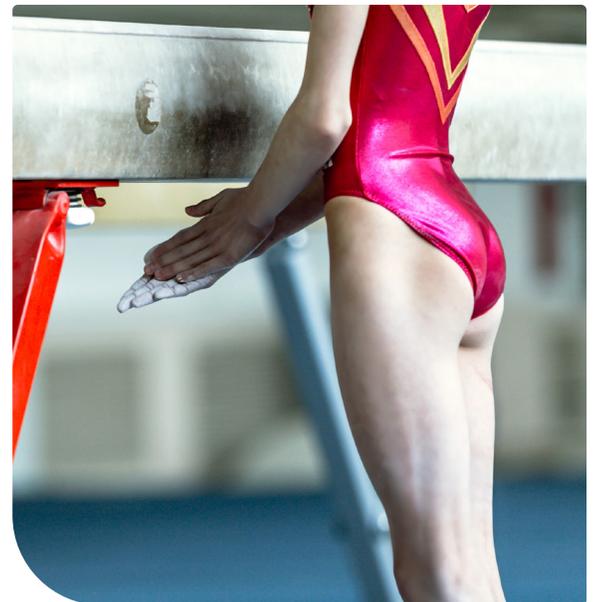
Your physician may order an x-ray, but more likely, a 3T Lumbar spine MRI will be ordered to rule out other injuries to your lumbar spine and confirm this diagnosis through exclusion.

Treatment

There are many different forms of treatment. This can be a very frustrating diagnosis and long recovery as the cause is from “faulty mechanics” and it takes time to work on flexibility, muscle imbalances and to improve technique. Some treatment suggestions include but are not limited to:

- **Medication:**

- Non-steroidal anti-inflammatory medication (NSAIDs) and/or lidocaine patches may be recommended by your Medical Provider.



- **Brace**

- **Physical Therapy (PT):**

- Strength: Antilordotic, core/abdominal strength exercises, pelvic tilt (to neutral position). Lumbar extensors from full flexion to neutral, hip strength (abductor, ER), glute in non-lordotic ranges, lower extremity strength (ankle, calf, hams, and quads), and upper body strength (RC, and peri-scapular strength).
- Range of Motion (ROM): Shoulder forward flexion, hip flexor ROM-iliopsoas and rectus (avoid extension of lumbar spine), piriformis, ITB, thoracic mobility, hamstring, latissimus dorsi flexibility, and pectoralis and scalene.

- Modalities: Massage, e-stim, heat, ice, dry needling.
- Other: Proprioception/balance, posture, splits with square hips, and please be sure to avoid any extension of the lumbar spine or any painful maneuvers.

- **Injections**

- **Sports Psychologist or Mental Performance Coach**

- **In Terms of Gymnastics:**

- There is traditionally no “true gymnastics skills” for 2-8 weeks to allow the back to heal, work on muscle imbalances, decrease inflammation, and rest.

Risk Factors for Having Back Pain:

- Abdominal muscle weakness
- Tightness with hip extension, shoulder flexion, and thoracolumbar fascia
- Increased femoral anteversion
- Genu recurvatum (hyperextended knees)
- Increased thoracic kyphosis
- Repetitive motions (specifically extension)

Prevention:

- Splits: Focus on performing splits with square hips. If you can increase your hip/spilt flexibility with proper technique you can decrease the hinging motion from your low back.
- Landing Mechanics: Evaluate your gymnasts landing mechanics. Look to see if they land in a hyperextended position from in their back and see if they can absorb the forces on their landing.
- Bridge: Have your gymnast perform a bridge and look to see if he/she can perform a bridge without excessively hinging from their low back.

Injury Prevention: Proper Technique

Incorrect:

- Temple/triangle position
- Hinging from your low back causing the pressure/force to all be in the low back
- Hips and knees are both flexed



Correct:

- Rainbow position
- Pushing with her shoulders to open up her chest and hinge from the entire spine and shoulders
- Hips are open and legs are straight

