

Overuse Injuries of the Wrist in Female Gymnasts: What Parents Need to Know

Prevalence

- 57%-88% gymnasts develop wrist pain
- >50% of injuries occur at beginning and middle skill levels

Radial Growth Plate Injury:

- Most common cause of wrist pain
- X-rays positive for up to 50% mid and beginning levels
- Premature growth plate closure, stunting growth of the radius
- Leads to later ulnar wrist pain
- Bone's repair potential overridden by external forces (stress fracture) due to overuse with too little rest

Risk Factors

- 10-14 year old age group
- ↑ training hours (> 35 h/week)
- ↑ skill level
- 80-90% female
- Repetitive loading (handstands, roundoffs)
- Tension from grips during giant swings

Symptoms

- Pain on the back of the wrist, even to touch
- Associated with weight on wrists or extreme bending
- Tender along radius (thumb side) close to wrist

What can we do?

- Catch symptoms early
- Send to an orthopedist!
- Prevention
- Control risk factors
- Thorough rehab following injury

Summary

- Although common, wrist pain is NOT normal.
- Take action immediately if symptoms occur.
- Prevent by decreasing stress to the area and varying training practices.
- Strengthen the forearm to decrease stress on the joints and bones of the limb.

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References

1. Davidson, P. L., Mahar, B., Chalmers, D. J., & Wilson, B. D. (2005). Impact modeling of gymnastic back-handsprings and dive-rolls in children. *Journal of applied biomechanics*, 21(2), 115-128.
2. DiFiori, J. P. (2006). Overuse injury and the young athlete: the case of chronic wrist pain in gymnasts. *Current sports medicine reports*, 5(4), 165-167.
3. DiFiori, J. P., Caine, D. J., & Malina, R. M. (2006). Wrist pain, distal radial physeal injury, and ulnar variance in the young gymnast. *The American Journal of Sports Medicine*, 34(5), 840-849.
4. DiFiori, J. P., & Mandelbaum, B. R. (1996). Wrist pain in a young gymnast: unusual radiographic findings and MRI evidence of growth plate injury. *Medicine and science in sports and exercise*, 28(12), 1453-1458.
5. DiFiori, J. P., Puffer, J. C., Aish, B., & Dorey, F. (2002). Wrist pain in young gymnasts: frequency and effects upon training over 1 year. *Clinical journal of sport medicine : official journal of the Canadian Academy of Sport Medicine*, 12(6), 348-353.
6. DiFiori, J. P., Puffer, J. C., Aish, B., & Dorey, F. (2002). Wrist pain, distal radial physeal injury, and ulnar variance in young gymnasts: does a relationship exist? *The American Journal of Sports Medicine*, 30(6), 879-885.