

**Kinesiology/Exercise Biomechanics**

Problem Title	To tape or not to tape a previously sprained ankle?
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Learning Outcome(s)	
1	Discover how taping (and bracing) impacts ankle range of motion and muscle involvement/recruitment.
2	Assess the effectiveness of different treatment (taping/bracing) options on an athlete.
3	Formulate a preventative management plan for an athlete who previously suffered an inverted ankle sprain

Concepts / Competencies expected to engage with	<ul style="list-style-type: none"> <li>Lateral Ankle Sprain treatment</li> </ul>
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Course Level	Undergraduate - Introductory
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This problem involves data analysis	Yes	<b>No</b>	Maybe
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Approximate Length	30 minutes
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Class/ Group Size	Class size 20-30; Group size 2-3
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Useful References	<ul style="list-style-type: none"> <li>Cordova, M. L., Ingersoll, C. D., &amp; LeBlanc, M. J. (2000). Influence of ankle support on joint range of motion before and after exercise: a meta-analysis. <i>Journal of Orthopaedic &amp; Sports Physical Therapy</i>, 30(4), 170-182.</li> <li>Raymond, J., Nicholson, L. L., Hiller, C. E., &amp; Refshauge, K. M. (2012). The effect of ankle taping or bracing on proprioception in functional ankle instability: a systematic review and meta-analysis. <i>Journal of Science and Medicine in Sport</i>, 15(5), 386-392.</li> <li>van Den Bekerom, M. P. J., van Kimmenade, R., Sierevelt, I. N., Eggink, K., Kerkhoffs, G. M. M. J., van Dijk, C. N., &amp; Raven, E. E. J. (2016). Randomized comparison of tape versus semi-rigid and versus lace-up ankle support in the treatment of acute lateral ankle ligament injury. <i>Knee surgery, sports traumatology, arthroscopy</i>, 24(4), 978-984.</li> </ul>
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Mode of Instruction	Face-to-face
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### The Scenario:



A running back on the football team suffered a second-degree inverted ankle sprain in the last game of the previous season. After six weeks of rehabilitation following the season, the team doctor released him for full activity. This year as the start of camp comes around, he is insistent on getting his ankle taped every day. He is approximately seven months post initial injury. You believe this athlete wants to tape his ankle out of fear of being reinjured.

### The Questions:

As an athletic trainer with full knowledge of his history, do you encourage taping, bracing, some combination of both, or neither? Why or Why not?

Does your answer change if the athlete experienced a third-degree inverted ankle sprain instead of second degree?

### Expected Outcomes:

Students will work in small groups within class-time to discuss and come up with a solution for this scenario. References will be made available to the students beforehand. Students will formulate an answer based on previous research and information provided to present to the rest of the class. Instructor will record group determination (tape/partial/brace/none) on either a white board or overhead projector. This PBL scenario allows students to see how there may not be just one correct answer to a given scenario.

### Guided Questions (Hints):

- What is the likelihood of his ankle returning to full strength?
- Would the taping impact ankle range of motion?
- How would limited range of motion impact muscle recruitment?
- If the ligaments are permanently stretched, meaning that stress applied caused permanent deformation of the ligaments, what takes on a heavier role stabilizing the ankle?
- Do you tape just in practice? Training? Game? All? Or some combination? Support your decision...