

Formulation and Implementation of Standardized Musculoskeletal Injury Treatment Plans in a High School Athletic Population

TBIOMD 494

Aubrey Lund, Dr. Jutta Heller

BACKGROUND & NEED



South Kitsap High School (SKHS)
↓
2,000-2,500 Students
↓
1,000 Athletes
↓
2 Athletic Trainers
↓
High rehabilitation workload

Figure 1. SKHS Athletic Trainer, Chris Hiatt, prepares student-athletes for competition through taping and joint stabilization techniques during ongoing rehabilitation prior to varsity football game in October 2022.

OBJECTIVE

Develop evidence-based rehabilitation protocols for common athletic injuries to improve consistency of care and promote athlete independence during recovery.

METHODS

- Obtained student athlete feedback through QR survey
- Reviewed athletic training room (ATR) sign in/treatment data for September 2025-January 2026

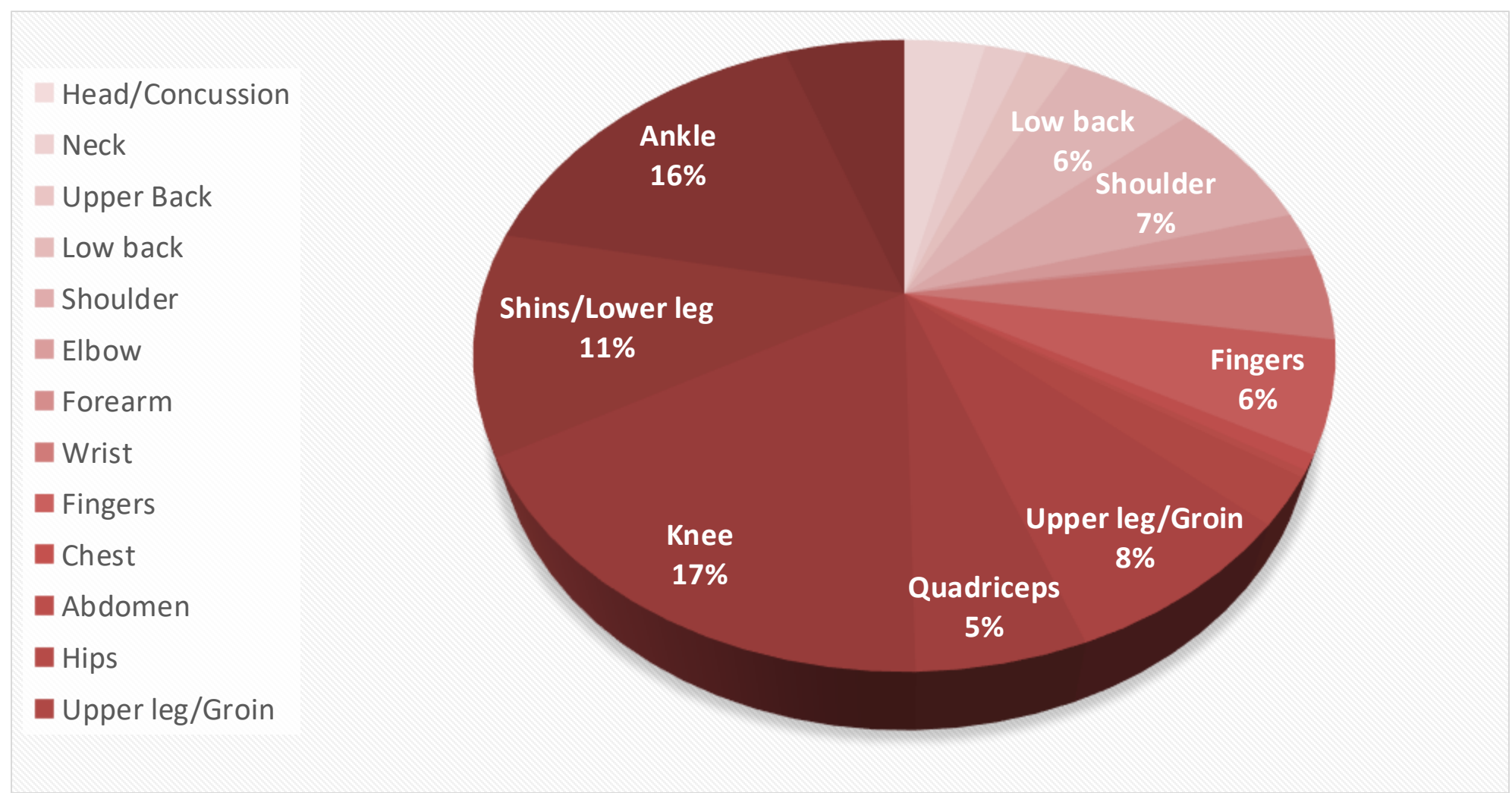
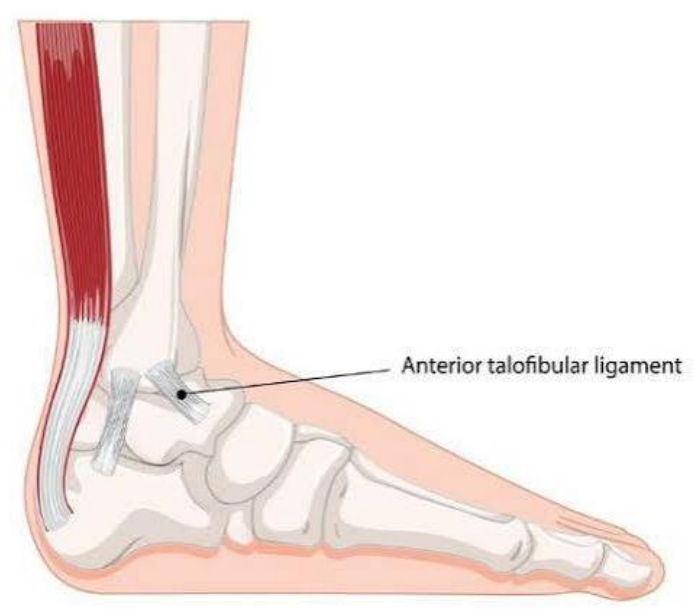


Figure 2. Percentage breakdown of injuries sustained by SKHS student-athletes between September 2025 and June 2026. Injury frequencies were calculated from athletic training sign-in records collected prior to evaluation and treatment. Knee (17%) and ankle (16%) injuries were the most frequently reported injury locations.

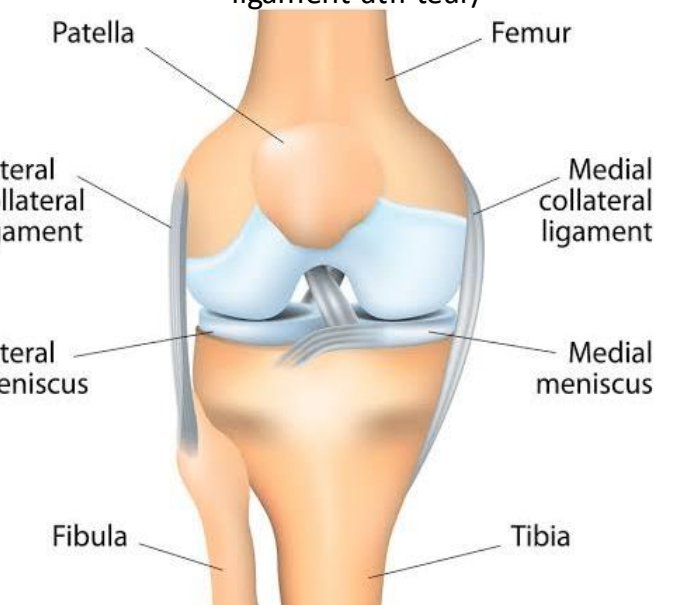
METHODS cont.

Selected injuries for further research and treatment plan development:

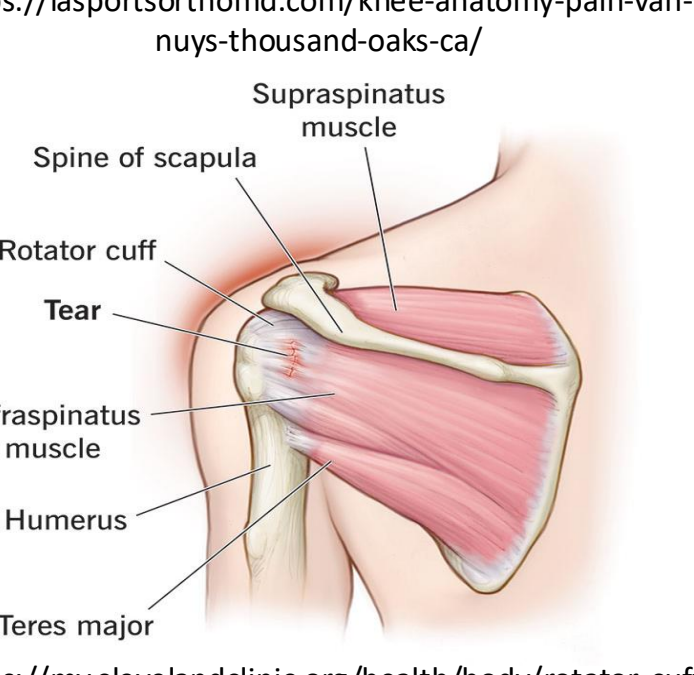
- Anterior talofibular ligament (ATFL) ankle sprain
- General ligamentous knee injury
- Overhead shoulder injury
- Mechanical, non-specific, low back pain



<https://sportsfootankle.com/antior-talofibular-ligament-atfl-tear/>



<https://lasportsorthomd.com/knee-anatomy-pain-van-nuys-thousand-oaks-ca/>



<https://my.clevelandclinic.org/health/body/rotator-cuff>



<https://www.shutterstock.com/>

Protocol design process

- Literature review on tissue healing in the phase model
 - Phases: inflammatory, repair, remodel
- Develop goals for each phase
- Determine exercises
- Understanding what sport(s) look like in each phase
- Develop phase progression
- Determine complete return to play
- Long term treatment/injury prevention routine

RESULTS & IMPLEMENTATION

Four treatment plans were created and implemented

Example: General ligamentous knee

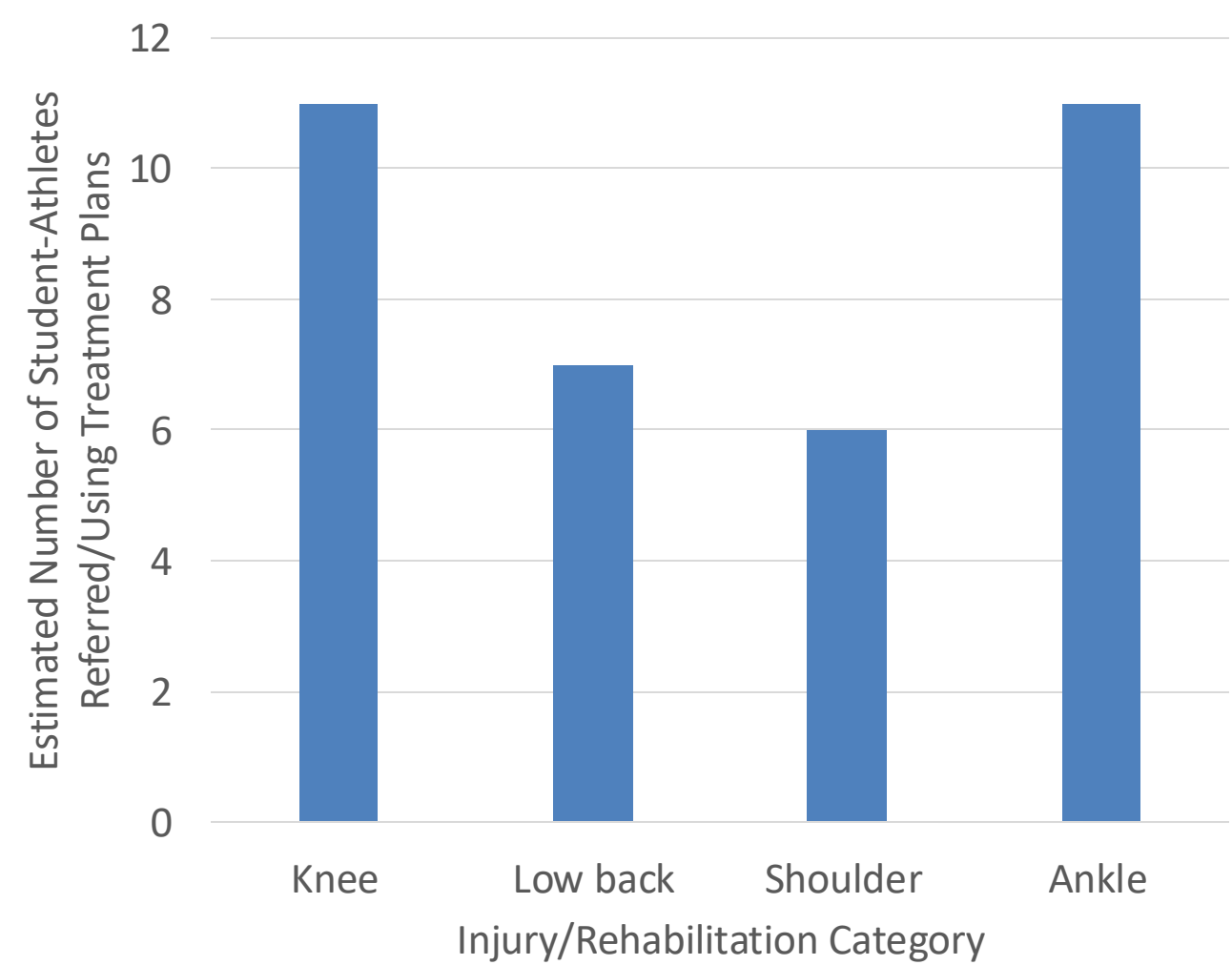


Figure 3. Estimated number of students treated in the Athletic Training Room (ATR) using the developed rehabilitation plans from March 5, 2026, through June 19, 2026. Estimates were based on athletes treated by one athletic trainer and are limited by the lack of long-term utilization and outcome tracking.

LIMITATIONS

- Student survey results, n=6 responses
- Project duration, 11 weeks only giving time for development of four treatment plans
- Generalized injury categories
- Lack of outcome data given the short time frame from implementation to end of year

FUTURE DIRECTIONS

- Expanding the treatment plan programs to include other common injuries
- Evaluation of implementation outcomes
- Comparing outcomes before and after implementation
- Possible collaboration with other surrounding high schools

ACKNOWLEDGEMENTS

I would like to extend my gratitude to my mentor, Dr. Jutta Heller, who took a chance on my unconventional idea and helped make it a reality. I am also very thankful to Jeff Spaulding and Chris Hiatt for giving me space in the ATR to toss around ideas, research, and collaborate on implementation for the school. And lastly, I would like to thank my wonderful husband who spent countless nights listening to me overwhelm him with lectures on the newest research I came across.

REFERENCES

