

The effectiveness of developing player specific proprioception training programs in an attempt to prevent ankle injuries in high level basketball



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Background

- Ankle injuries (especially lateral sprains) are the most frequent injury in Basketball, accounting for 14.7% of all injuries over 17 years in the National Basketball Association (NBA).¹
- Ankle injuries result in the second highest number of games missed from injury or illness.¹
- Long term effects of ankle injury include joint instability and osteoarthritis.
- Screening for players at risk of ankle injury can inform player-specific injury prevention and rehabilitation programs.
- Injury prevention programs focusing on balance and proprioception are most effective.²
- These screening-informed injury prevention programs are yet to be adopted widely in either professional or amateur competitions in the UK.



Aims

- Learn about the most effective methods of screening and reducing ankle injuries in professional basketballers.
- Work with a professional British basketball team to explore ways to implement a pre-season program to prevent ankle injuries.

Turin, Italy:

- From the 22nd July to the 2nd August, I studied with Dr Riva and his team at his Proprioception Centre in Turin to learn about the most successful ankle prevention program reported in the literature to date.
- The Riva technique trains proprioception using DELOS S.R.L. rocking boards to increase proprioceptive control to decrease fall and injury risk.
- Evidence from a 6 year prospective study found that ankle injuries were reduced by **81%** in the Cantù basketball team after adopting the Riva Method.³
- **18 NBA teams** use the Riva technique and unpublished data from this competition support the original findings.
- The 2nd most effective prevention technique reported in the literature (still proprioception training) found a reduction of ankle injuries by **35%**.⁴



Newcastle:

- Back in Newcastle, I have continued my research into ankle injury prevention.
- I have met with the Newcastle Eagles medical team at the English Institute for Sport to discuss how to implement an effective ankle injury prevention program at the Newcastle Eagles.
- Working as part of a multi disciplinary medical team, screening exercises have been chosen, which will lead onto a low tech injury prevention program.
- Initially, I will lead on pre-season proprioception screening. This will help create individual baselines to inform return-to-play and rehabilitation programs if injury occurs.
- We hope implementation of this program will reduce the occurrence and severity of ankle injuries, increasing court time for players, and reducing pain and possible disability in later life.

My Experience:

- I have learnt so much from Dr Riva and his team. From first hand experience of being trained on the boards, learning how to use the Delos equipment and talking through the background theory to why this approach is so effective.
- This opens up the start of a future career specialising in injury prevention/rehabilitation.
- In the future, I will keep in contact with Dr Riva and his team, and hope to complete more training with them, and continue to develop injury prevention at Eagles.
- This research and work experience has been invaluable for my career and has changed my perspective on effective injury prevention.



References:

1. Drakos et al., J Sports Health 2010, 2(4) p284-290.
2. Taylor et al., J Sports Health 2015, 7(5) p392-398.
3. Riva et al., J Strength Cond Res 2016, 30(2) p461-475.
4. Eils et al., J Med. Sci. Sports Exerc. 2010, 42(11) p2098-2105

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