ACL Injury and Proprioceptive Training

Background & Literature

The purpose of my research paper is the effects of proprioceptive training on ACL injury. The primary focus is on how proprioceptive training before being injured can help prevent injury, as well as the effects of applying proprioceptive training into the rehab for those with ACL injuries. The importance of such training is often overlooked by therapists as well as doctors, but the evidence displayed within the research shows its importance.

The first article referenced focused primarily on preventative actions of Anterior Cruciate ligament injuries by utilizing proprioceptive and neuromuscular training. Their study had a total of 24 groups with 1093 participants in total. These groups of studies were gathered by two authors and broken down to see which fit their criteria before actually studying them. As a result, They found that after the interventions of neuromuscular and proprioceptive training exercises, the ratio of those being injured decreased dramatically. This was done with 95% confidence level. In conclusion, they stated that neuromuscular proprioceptive training appeared to decrease the amount of injuries at the knee, specifically the ACL, but they did also state that no specific group of exercises proved to be better than any others within the study.

The second article studied focused primarily on the role of proprioceptive training in ACL injuries, that did not have surgery to repair them. The importance of this study is the utilization of proprioceptive training, but on individuals who have torn their ACL, but not to the point where operative repairs are considered needed. This can save

individuals money, time, and recovery complications from surgery. Within this study, they had 45 subjects with ACL injuries and put them into three different groups at random. The first two groups, A and B, were given proprioception exercise training and balance exercises. They also were given conventional strengthening exercises. The third group, group C, was only given strengthening exercises, making them the control group. After three weeks of intervention, they tested a few areas to see which groups had the best results. These areas included calf/toe raises, squatting, steps, lunges, figure of ‘8′ walking, wobble board exercises, single leg standing, and stationary cycling. As a result, they found that those who were in groups A and B had significantly more strength and balance than those within group C. This was a result to the proprioceptive training and balance exercises.

The third and final article studied focused on if college female soccer athletes and their supposed decreased risk for ACL injuries with a proprioceptive training program for both pre and in season training. This study pairs very well with the first article. After studying many different articles, much like the first study, concluded that there are no conclusive training programs indicating that this form of training decreases female soccer athlete ACL injuries specifically, but there were many studies on how it could be done. Further research needed to be done developing an evidence based prevention program for this topic.

Method / Results

The main focus of this study was on the effects of proprioceptive training on ACL. To observe the effects, within this study, we focused on the comparison between

those who underwent the proprioceptive training along with the normal strengthening and just the normal training and no proprioceptive training. This method is primarily where the most relationships were found. We also studied how proprioceptive training during preseason and during the actual season would affect female athlete ACL injury rates.

Discussion

As seen in the second study, those who underwent both had much better results than those who did not. An additional factor for this particular study was that the population did not undergo surgery. For those who did undergo surgery in the other articles, it was found that there was no significant difference between those who had the proprioceptive training and those who did not. Likewise, no significant relationship was found between those who had proprioceptive during preseason or during the preseason within female soccer athletes and them not suffering from ACL injuries. The only real conclusion that can be found is that, those with ACL injuries that do not need surgery to heal, can be treated and strengthened with proprioceptive training along with the normal training to allow them to heal faster with better results.

Limitations

Being that this was a literary review, obtaining numerical data for this project proved to be fairly difficult. The best articles, the ones including those above, required a subscription not given by the school nor my position at the hospital I work at. I would need to prescribe to be given access to the data needed to create charts, t-test, show means, standard deviations and other numerical representations of the sort. For future

research, I suggest completing the research on clients that are willing to partake rather than a literary review due to the lack of funds for research such as this.

Works Cited

1. Dargo, L., Robinson, K. J. 1. binderke@mail. gvsu. ed., & E. Games, K. E. . (2017). Prevention of Knee and Anterior Cruciate Ligament Injuries Through the Use of Neuromuscular and Proprioceptive Training: An Evidence-Based Review. *Journal of Athletic Training (Allen Press)*, *52*(12), 1171–1172. https://doi-org.ezproxy.rowan.edu/10.4085/1062-6050-52.12.21

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