

## **Unstable Surface Training Following Injury**

Recently, a trend has been established in exercise fields concerning rehabilitation for an ankle or knee injury using unstable surface training. This unstable surface training is implemented primarily for the lower limbs of the human body specifically for rehabilitation and involves a significant amount of balance and proprioception. This post will serve as an in depth overview summarizing the implications of such and how it can practically be applied to our lifestyles should we ever see the need for such.

Due to the large amount of balance and proprioception required for unstable surface training the aspect of such corresponds a great amount with our latest post concerning sensorimotor function. At the very least, implementing unstable surface training will without a doubt challenge our minds and awareness of the movement that we are participating in due to the extreme amount of focus required. Such motor control relies heavily on the sensorimotor system and will without a doubt enforce movement with intention and purpose - and thus excelling the process of development for this system.

However, adding unstable surface training / instability to the mix is not going to be beneficial if one has not yet mastered the ground. There is really not much benefit to putting someone who has never done any form of balance training before onto a challenging surface before they learn how to balance themselves in space on a solid surface a.k.a. the ground. This aspect of progression is critical when it comes to rehabilitating an injury. Once a person is able to put their full weight on the area, proprioceptive training is then started for the recovery of balance and control of posture. This can occur through many varied forms. A common progression when performing balance exercise is to move from a position of non-weight bearing

to weight bearing, bilateral stance to unilateral stance, eyes open to eyes closed, firm surface to soft surface, uneven or moving surface. This variation of surfaces and conditions is vast, which allows for ample opportunity to offer fresh challenges during the process of rehabilitation.

Proprioception is useful for preventing injury in slow, moderately rapid, or even rapid tasks. A common mistake when performing proprioception and balance exercises is the lack of variability in speed and intensity. However, in our sport we should not have a problem with implementing such as we are not only masters of variability, but also speed and intensity.

Overall, rehabilitation of injuries should be structured and individualized. In the acute phase, the focus should be on controlling inflammation, reestablishing full range of motion, and gaining strength. Once pain-free range of motion and weight bearing have been established, balance-training exercises should be incorporated to normalize neuromuscular control and call upon the sensorimotor system. In the latter phases of rehabilitation activities should focus on regaining normal function. This includes exercises specific to those that will be performed during the athlete's sport. Overall, this is just a basic template to follow for the rehabilitation of injuries, but it is important to remember that individuals respond differently to exercises. Therefore, each program needs to be modified to fit the individual's needs.

*\*Note, this post is specifically summarizing the conclusions of rehabilitation following an injury with unstable surface training and does not deal with the implementations of such in a training program for healthy persons. For more information on this topic - Eric Cressey, who completed a masters thesis on the topic of unstable surface training, wrote an excellently cited article for T-Nation **HERE** outlining some of the significant findings from the research world regarding unstable surfaces.*

## References

- Mattacola, C. G., & Dwyer, M. K. (2002). Rehabilitation of the Ankle After Acute Sprain or Chronic Instability. *Journal of Athletic Training*, 37(4), 413–429.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC164373/>
- <https://www.t-nation.com/training/bosu-ball-the-good-bad-and-ugly>