Muscle Injuries And Nutritional Interventions

The concept of injury prevention has been discarded and substituted by injury minimization as the unpredictability of some injuries is impossible to prevent, in some cases injuries usually force the players to minimize their training or even cease any activity. Research from the past decade showed that from half of the injuries recorded on sports clubs half of them were classified as serious, which led to a minimum of 3 weeks away from training (Chomiak et al 2016; Alsheikhly and Alsheikhly 2018; Dhillon et al 2017). An overlooked method of recovery is nutrition, the increasing popularity of the question, why would you choose a specific food source over another to aid in healing? has inspired a vast amount of studies regarding the topic of nutrition for injuries in sport. Hence exploring new ways to intervene and reduce their resting time is crucial in treating injuries.

This study will analyze the benefits of nutritional interventions on soft muscle injuries. In order, these healing stages are; Necrosis, inflammation, proliferation, remodeling, and fibrosis, these are all interconnected with each other and are reliant on time (Huard and Fu 2002).

The first healing stage usually lasts up to 48 hours and can result in complete immobilization dependent on the severity of the injury (Leong et al., 2010) Before the inflammatory stage there is a destruction and necrosis phase (Hurme and Kalimo 1992), typically when structures have damaged, a surge of neutrophils arrive at the site of injury by the processes of rolling, adhesion and migration (Freitas et al 2016). Due to the presence of Neutrophils its jumpstarts Phagocytosis to help remove waste and necroed cells with monocytic cells (Pedersen et al 1998).

The second stage is proliferation, which can last up to 14 days dependent on the severity of the injury, Through that time a series of smooth muscle cells, endothelial cells, and fibroblasts start to act on the wound. The aim of these cells and processes is to promote angiogenesis, collagen synthesis, and to restore tissue by matrix deposition (Berthed et al 2006).

In the final stage the remodeling phase, the aim is to bring the tissue to the normal state of preinjury, as the wounded tissue is gradually remodeled the scar formation is less vascular and will present itself with a higher concentration of type I collagen tissue (Kumar 2010). Depending on the severity of the injury full recovery can take up to a few years (Rittweger and Felsenberg., 2009), hence providing nutritional support can help athletes return to sport faster, this research would be backed by the same principle of the effect of nutrition on muscle growth(Schiaffino et al., 2013).

This study aims to explore current literature regarding studies that focused on nutritional interventions in each healing phase to help athletes recover faster as well as find and fill gaps in such studies, with a secondary aim to provide the reader a nutritional guide on the most popular supplements and food sources used to recover. As a graduate sport Rehabilitation, we are not qualified on providing nutritional advice only advising patients to go to a nutritionist, furthermore having an overall knowledge of nutrition is an advantage to being able to assess where patients might be lacking and use that information to assess and treat them.