

Osteopathic Care with Athletes: Aiding in Athletic Performance and Well Being

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## **Introduction**

As a child I had the opportunity to explore a variety of sports and activities. My parents provided my siblings and I with the opportunity to participate in many extracurricular sports. I consider myself grateful for these opportunities as it in turn led me to my passion and career of working in the health industry; specifically with athletes. I currently work with athletes focusing on their functional strength and flexibility. It is not only rewarding, but challenges me as a practitioner to work with these individuals. Their care is not only specialized but also requires knowledge of different outlets concerning health. Manual Osteopathy practice and education cover many of these outlets vital to an athlete's health.

All aspects should be taken into consideration when treating an athlete so the best possible outcome is obtained. You must take into consideration nutritional intake, exercise protocols, and injury management. Injury management being one the most crucial aspects an athlete may benefit from Osteopathic treatment. If patients do not tend to their injury properly then training will most likely be affected, meaning performance is affected.

The foundation of Osteopathy is built on the premise that the role of the practitioner is to facilitate the body's inherent ability to heal itself (Lesho, 1999). This theory resonates with athletes as well, their superior physical condition and lifestyle creates ideal conditions for healing and tissue repair. Many athletes are looking to alternative medical care such as Manual Osteopathy for both treatment and guidance. Manual Osteopath's have the capacity to use an array of treatment techniques to aid in both rehabilitation and injury prevention. A manual osteopathy's knowledge of nutrition, biomechanics and therapeutic exercise provides them with the tools necessary to properly assess and treat an athlete. They are able to address multiple factors that contribute to the performance of the individual. Specifically soft tissue and joint manipulations can aid in the patient's rehab but can also be used as a preventative tool (Burns and Wells, 2006). This multifaceted approach to athletic care can be very effective and I intend to execute, promote and draw awareness to this field.

## **Manipulative therapy- Joint Mobilizations**

“American Academy of Orthopaedic Manual Physical Therapists describes mobilization and manipulation techniques as pain modulation; restoration of mobility of soft tissues, joints, and neural tissue; control of movement, muscle strengthening, and stabilization” (Puniello, 2006). These techniques have shown to decrease pain twenty-four hours after treatment, aiding in restoring proper musculoskeletal activation. The neurophysiological effects are assumed to be caused by activating mechanoreceptors which consequently decreasing nociceptive activity (Hanarahan et al, 2005). This allows the system to function properly allowing such processes as cellular transport, joint lubrication, and osmosis of collagenous and cartilaginous structures (Puniello, 2006). The promotion of the body's natural healing process indicates less of a need for additional medication. Supplementary medication requires digestive processes to be carried out by the body. Osteopathic philosophy states the functions of the body are inseparable, therefore

eliminating the need to take supplementation will allow the system to function without extra stress (Lesho, 1999).

Joint mobilizations are shown to have a mechanical effect on the joint and surrounding soft tissue as well. The soft tissue functions to provide stability and movement to the joint, with immobilization or lack of ROM, tissue homeostasis is compromised. The tissue goes into its plastic deformation phase which can result in formation of collagen cross bridging, decreased water in tissue and finally, tissue thickening (Puniello, 2006). This disruption to tissue homeostasis can result in tissue shortening and loss of elasticity. To avoid this process the tissue must undergo mechanical deformation with movement or stress to regain osteokinematic and athrokinematic motion within the joint. It has been shown that joint mobilization promotes this movement, allowing normal ROM to return, regaining tissue functions and restoring stability (Hanrahan et al, 2005).

Joint mobilizations are not only useful when treating an injured area but can be beneficial to an asymptomatic patient. Decreased ROM of a joint, even without a neurophysiological response from the body (nociceptor) can result in decreased muscle activation of supporting tissue. Clark et al (2010) found that limited joint ROM individuals weren't able to generate as much muscle activation as those with increased joint ROM. For an individual who trains consistently such as an athlete, optimal muscle activation is a key component to their training protocol. Therefore to create optimal muscle recruitment, which leads to increased joint stabilization, joint ROM must be maintained (Hock et al, 2012).

## **Nutrition**

Athletes can be put through vigorous training protocols, which means frequent and intense training. This means the athlete must meet their nutritional needs for both proper recovery and energy output. An inability to meet these needs can result in fatigue or inadequate muscle repair, putting the athlete at risk for injury, or eating associated disorders.

Kimmerle et al, (2012) investigated the increasing role of Complementary and Alternative Medicine in athletes. They found that the diminishing role of physicians has resulted in an increasing popularity of alternative medical practices, such as Osteopathy. These medical practices have become more prominent in fields such as physical-therapeutic, dietary-therapeutic, pharmaceutical-therapeutic, movement-therapeutic, psycho-spiritual-therapeutic and energy-therapeutic. Osteopaths can use their knowledge of nutrition, and digestion to address the dietary-therapeutic aspect of their training. Having a practitioner aid in nutrition can not only benefit their performance but act as a safety precaution. Athletes are at risk for many eating associated disorders, iron deficiency or decreased caloric intake caused by overtraining. They are able to advise and instruct the patient on supplementation, preparation for competition and weight management. This instruction and monitoring can prevent the prevalence of eating and weight disorders seen in the athletic world.

## **Therapeutic Exercise**

As discussed earlier, athletes are put through rigorous training protocols. These protocols may be designed and executed with the assistance of other professionals such as trainers, or coaches. A protocol will vary between athletes and their sports but should always consist of therapeutic exercise. Research shows core strength is a key factor in athletic performance, but also as prevention for low back injury (Akuthot et al, 2008). Joint stabilization as well as stretching are also key factors for injury prevention.

Manual osteopaths are equipped with the knowledge of these exercises, as well as the biomechanics of the body, which will ensure the exercises are executed with precise form. Therapeutic exercise can aid in not only physical condition but mental and total health (Ross and Thomas, 2010). Cotman et al, (2007) discussed how exercise ensures and promotes proper brain function. This will aid in focus, motivation and mental clarity in all aspects of their training. A protocol should be specific to the issues in which an athlete has dysfunction. This can include and vary from exercises that focus on stability, flexibility, mobility, core strength or plyometric strength. To design a proper protocol, an Osteopath would perform strength and biomechanical assessments. The assessment would give direction for the protocol to ensure 'weaker' or 'problem' areas are addressed. The protocol would constantly adapt as progress occurs or with new injury complaints. Frequent treatment would allow the practitioner to alter the program or give feedback to fellow health care providers, resulting in specialized treatment and training for the athlete.

## **Discussion and Conclusion**

Osteopathic care, along with other alternative medical fields have had growing popularity throughout Canada and the United States (McFarland et al, 2002). This growing popularity has brought more awareness to the field of Osteopathy and their scope of practice. I believe this practice is not limited to injured or diseased populations but also healthy athletes. Athletes today are facing a very competitive field, which means all aspects of their training and preparation must be monitored closely. To properly aid an athlete, you must have knowledge of all aspects incorporated in this training. We broke down just a few topics in which Osteopaths are skilled and capable of treating within their scope of practice.

Nutrition is one component that is very important for everyone's health. The high stress and expectations put on athlete's pre-disposes them to eating disorders, insufficient caloric intake, and anemias (Burke, 2001). The pressure to succeed and obtain the ideal stature can outweigh health concerns. An Osteopath's role would be crucial in this scenario to keep the patient on track, allowing them to be successful in their training while keeping the patient's health the number one priority.

When dealing with any individual who trains as consistently as athletes, specific strengthening is required. Strengthening protocols can be designed by an Osteopath to focus on injuries or be used preventatively for injury prone areas. Osteopaths train extensively to understand the biomechanics of the body, this knowledge combined with exercise education creates a well rounded protocol for the athlete. Keeping an athlete injury-free can lead to more effective training, which can lead to performance enhancement.

When an athlete is unable to complete training due to injury, it can have a negative effect on their performance. To minimize time off from training, an athlete should receive regular

treatment to promote healthy joint movement and soft tissue activation. Joint mobilizations and manipulations create therapeutic effects in the body. These effects promotes healthy musculoskeletal facilitation but also aid in neuromuscular restoration (Lesho, 1999). Manual techniques encourage the body's healing process, reducing time the athlete is unable to train. They can also act as a precautionary tool by treating asymptomatic but restricted tissue. Restrictions can disrupt tissue homeostasis, but with effective treatment, homeostasis can be returned before failure or injury occurs. This premeditative care can become beneficial to an athlete as it is clear that every component of their health can affect their performance. To aid in an athlete's performance you must be knowledgeable and skilled in treatment, nutrition, and exercise biomechanics. Osteopaths are proficient in addressing all of these aspects of an athlete's health. Their training and education allows them to confidently advise and treat these individuals, ensuring success in training and competition.

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