



PHYSIO FOCUS

PHYSIO FOCUS is a bi-monthly publication geared towards providing practical physiotherapy and health information.

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NOI Fitness Classes

Winter/Spring Class Schedule

Please sign up at front desk!

Pilates Mat

Mondays at 5:30 pm

A floor based exercise program that uses your own body or small props to build core strength and retrain proper muscle patterns while increasing your mind-body awareness.



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“Just because you’re not sick doesn’t mean you’re healthy”

Foot Flexibility and Shin Splints

Medial tibial stress syndrome (MTSS), shin splints, is a common impairment that affects 5%-35% of athletic population¹. It is caused by the repetitive loading stress during running and jumping and is characterized by pain and swelling on the inside of the lower leg/ankle. MTSS encompasses a spectrum of injuries that involve periostitis of the tibial, including tendinopathy, periosteal remodeling, and a stress reaction to the tibia (i.e stress fracture).

Kudo and Hatanaka (2015) aimed to investigate the association between medial tibial stress syndrome and the flexibility of the foot arches: medial longitudinal arch (MLA) and the transverse arch length (TAL). The authors measured the MLA and TAL in both the rearfoot and forefoot of subjects suffering from MTSS and compared these values to subjects not affected by MTSS.

Their results indicated that the MLA ratio was higher in normal feet than MTSS feet and the diff-TAL was lower in the MTSS feet. Clinically these findings suggest that decreased flexibility of the transverse arch and reduced MLA ratio are risk factors for those who developed MTSS.

Interestingly, the flexibility of the MLA and the height of the transverse arch were NOT risk factors for MTSS. Further analysis of their data showed that subjects with a navicular drop (.10mm) were almost two times more likely to develop MTSS.

Practically speaking, Physiotherapists must ensure flexibility of the TAL, optimize forefoot flexibility and correct biomechanics of the foot joints to reduce the stresses transmitted through the medial shin. Also, posterior tibialis myofascial release and eccentric muscle training should also be included in any rehabilitation program to further reduce periostitis, pain, and inflammation. Shockwave therapy and tissue distraction therapy (cupping) have also been shown to have regenerative properties and inflammatory reduction, respectively, for MTSS but were not a component of the above research design.

¹Kudo, S. & Hatanaka, Y. **Forefoot flexibility and medial tibial stress syndrome.** Journal of Orthopaedic Surgery, 2015; 23(3): 357-60.

Exercise of the Month: Pilates Teaser!



With all of the “fancy” machines one may see at their local gym, it is important to remember that core muscle activation requires controlling one's body in space in synergy with functional movements. This “functional stability” is essential in engaging the appropriate muscle groups, and consequently your core.

This month's featured exercise is the Pilates Teaser. This movement focusses on core muscle recruitment while distal positioning is maintained. Check out NOI's Pilates classes every Monday night at 5:30pm to learn more!

Natural Solutions for a Muscle Tear Injury

If you have ever experienced a muscle tear, you know that it takes time to heal, regenerate muscle and a lot of patience. Muscle tears can occur anywhere and at any time when excessive or repetitive strain is placed on the muscle. Symptoms include: localized pain with or without movement, weakness of the muscle, along with localized swelling, redness or bruising. Muscle recovery involves a pathway of acute inflammation, regeneration, remodelling and healing. Depending on the recovery stage, specific natural supplements can optimize the healing time and get you back to the activities that you once enjoyed. Here are my top supportive therapies that help aid in muscle regeneration for a faster recovery time:

1. **Systemic Proteolytic Enzyme Therapy:** we often think of enzymes as a digestive aid to break down food, but when taken away from food at an appropriate dose, enzymes are excellent for breaking down clotted blood (bruising), dead cells and damaged tissue to help initiate the recovery stage. This process also leads to improved circulation to ensure that nutrients meet the injury site for faster repair.
2. **Curcuma longa, Bromelain and Boswellia serrata:** are natural anti-inflammatories to reduce pain and inflammation. These supplements are often found in combination products and can help reduce the need for acetaminophen and NSAIDS.
3. **High quality vitamin-mineral supplement:** more specifically, vitamin A, B, C and D, along with calcium, iron, copper, magnesium, zinc and manganese are important for injury recovery.
4. **L-arginine:** an amino acid that stimulates anabolic hormones to stimulate protein synthesis and collagen deposition. L-arginine also improves nitric oxide production for arterial relaxation and improved circulation. This supplement is best taken after bruising and swelling have been reduced.
5. **L-glutamine:** an amino acid that is highly concentration in skeletal muscle. L-glutamine can be affected by injury, infection, prolonged stress, malnutrition, and the use of glucocorticoids. Restoring glutamine can help improve and speed up wound healing.

In addition to natural supplements, an anti-inflammatory diet will remove unnecessary inflammation in the body, enhance the immune system and provide optimal nutrition to allow an injury to fully heal. By integrating physiotherapy, proper nutrition, plenty of rest and targeting supplement therapy, healing potential can be maximized and injured muscles can return to normal functioning.

– Dr. Jennifer Cox

Health Corner

The Benefits of Cod Liver Oil

Liver and cod liver oil are nutrient-packed super-food supplements that have been shown in the literature to help boost energy, libido, muscle growth, brain power, and general health. They are abundant sources of nutrients difficult to obtain elsewhere, such as vitamin A, arachidonic acid, DHA, and B vitamins. It has also been shown to be extremely rich in carnitine, lipoic acid, and other energy-related nutrients whose food sources have not been sufficiently researched.

As a result of this nutrient composition, cod liver oil has been shown to have the following benefits:

1. Vitamin A has been understood to promote healthy vision, promote healthy fertility in males and females, and allow for proper embryonic development. It has also been shown to protect against oxidative stress and against environmental toxins, prevent kidney stones, regulate the amount of fat tissue in the body, regulate blood sugar, and protect against fatty liver disease.
2. Arachidonic acid and DHEA has been shown to assist in proper growth and brain development, provide building blocks for muscle tissue, aid in hydration of our cells, and maintain a healthy gut. Arachidonic acid is considered an essential fatty acid.
3. Other nutrient related benefits include optimized energy expenditure and fat metabolism.

Whether you are recovering from an injury, had a recent surgical procedure, or are looking to optimize your overall health and wellness, the addition of cod liver oil to your diet has a multitude of positive benefits!