



# PHYSIO FOCUS

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

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## NOI Fitness Classes

### **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.

### **Meditation for Healing**

#### **Mondays at 6:35 pm**

This experience is truly unique in that you will learn to use your breath and awareness to connect to the healing power that lies within you. The focus will be on unlocking this inherent healing potential inside all of us.



**From the bitterness of disease man learns the sweetness of health.**  
~Catalan Proverb

## **Shoulder Pathologies: Rotator Cuff and Biceps Tendon**

Supraspinatus tendinopathies (impingement, micro-trauma, devascularization, or degeneration) are the most common cause of shoulder pain and functional impairment in those aged 35 and older. *“The role of the Supraspinatus is of such importance, that when there is an injury or weakness thereof, the normal balance of forces acting on the glenohumeral joint is interrupted, thus causing instability to said joint.”* As a result, it triggers an instability in the long head of the biceps tendon, the main stabilizer of the glenohumeral joint. On the other hand, the pathologies of the long head of the biceps tendon (LHB) also present an important source of shoulder pain, often causing significant reductions in shoulder joint flexion. LHBT tendinopathy is generally due to inflammatory, traumatic and degenerative causes related to overuse, becoming chronic in most cases [1].

Redondo-Alonso (2014) performed a systematic review to evaluate the prevalence of LHB lesions in those individuals diagnosed with chronic rotator cuff (RC) pathology involving the Supraspinatus (SS) tendon. **The results of their review indicated a 22%-78.5% prevalence association between LHB and SS tendon injury, indicating a significant epidemiological relationship between the two tendons.**

The high association between SS and LBT tendon injuries can be attributed to many biomechanical and anatomical factors within the glenohumeral joint complex. The functional relationship between the two tendons is evident as the both contribute to the “biceps pulley” system that’s primary role is to maintain stability of the biceps tendon in the shoulder. These tendons work in conjunction with the coracohumeral ligament, subscapularis tendon, and the superior glenohumeral ligament.

The acknowledgement of this anatomical and functional relationship is essential for health practitioners dealing with rehabilitating shoulder pathologies and injuries. Manual therapy application should be directed both tendons in order to facilitate proper tendon mechanics and adhesion removal. Exercise prescription must optimize glenohumeral and periscapular mechanics to enhance and optimize the biceps pulley system. Therapeutic modality prescription (ultrasound therapy, shockwave therapy, low level laser therapy) must also address tissue deficiencies with both tendons.

<sup>1</sup>Redondo-Alonso L, Chamorro-Moriana G, Jiménez-Rejano JJ, López-Tarrida P, Ridao-Fernández C. **Relationship between chronic pathologies of the supraspinatus tendon and the long head of the biceps tendon: systematic review.** BMC Musculoskeletal Disorders. 2014 Nov 18; 15:377.

## NOI adds 2 Registered Physiotherapists to Expanding Team!



NOI is pleased to announce the addition of two dynamic Physiotherapists to their expanding multidisciplinary team! Joe Marrara MPT, joins the team as a graduate of the University of Western Ontario. He brings an extensive manual therapy skill set and evidence-based practice treatments to NOI with special interests in ankle manipulation and athletic rehabilitation.

Peter Nguyen DPT is a graduate of D'Youville College. Peter brings an expertise in soft tissue and joint mobilizations and acupuncture application. He has special interests in functional movement patterns and neuromotor control.



## Health Corner

### How is Mobile Phone use impacting your Health?

Mobile phone use continues to be on the rise, especially among youth populations, with current rates indicate approximately 86.7 % of people use a cell phone. Mobile phones emit electromagnetic radiation within the microwave frequency range (900–2450 MHz) causing both thermal and nonthermal effects. Current research has found that mobile phone use contributes to genotoxicity, carcinogenicity, and sleep disorders.

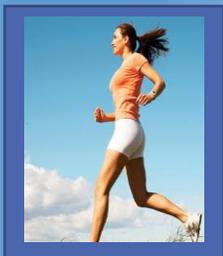
A recent study by Sieroń-Stołtny (2015) and colleagues focused on the influence of electromagnetic field generated by mobile phone on the skeletal system of rats. They assessed this impact by measuring the macrometric parameters of bones, mechanical properties of long bones, calcium and phosphorus content in bones, and the concentration of osteogenesis and bone resorption markers in blood serum. The study divided male rats into two groups: an experimental group subjected to 28-day cycle of exposures in electromagnetic field of 900 MHz frequency generated by a Nokia mobile phone and a control group, no exposure to electromagnetic field.

Their results indicated that the mobile phone-generated electromagnetic field *“altered the mechanical properties of the rats bones (stress and energy at maximum bending force, stress at fracture), it decreased the content of calcium in long bones and L<sub>4</sub> vertebra, and it altered the concentration of osteogenesis and bone resorption markers”*. It was concluded that electromagnetic field generated by 900 MHz mobile phone alters the processes of bone mineralization and the intensity of bone turnover processes and thus negatively influences the mechanical strength of bones.

The negative mechanical impact of mobile phone use on bone strength and osteogenesis, coupled with the contribution to sleep disorders, carcinogenicity, and gene toxicity, requires the health care community to advocate for the reduction of cell phone use as a health and wellness necessity.

<sup>2</sup> Sieroń-Stołtny K, Teister L, Cieślak G, Sieroń D, Śliwinski Z, Kucharzewski M, Sieroń A. **The influence of electromagnetic radiation generated by a mobile phone on the skeletal system of rats.** Biomed Res Int. 2015; 896019.

### Running Tips for this Spring!



With the outdoor running season around the corner, it is paramount that as runners we progress into the outdoors safely and efficiently to avoid injury. The varying ground reactive forces pose many new biomechanical challenges to our muscular, skeletal, neurological, and cardiovascular systems. A proper progression into these new forces can help avoid many acute and potentially chronic injuries from developing in our bodies. The following are tips to help you avoid and mitigate the impact of the “runners injury cycle”:

1. Ensure that you have proper footwear suitable for your foot type and running pattern,
2. Ease into it! Start with 1 or 2 outdoor runs per week- progress by adding a day per week until you reach your desired program frequency,
3. Split long runs between indoors and outdoors initially if training for a marathon,
4. Stretch! Be sure to stretch properly before and after a run. Consult a Physiotherapist for stretches appropriate for your body,
5. Listen to your body: If you feel pain or discomfort stop and seek professional advice and treatment,
6. Maintain your in-season strength, stability and mobility program to prevent injuries,
7. Plan your route in advance and be aware of your surroundings,
8. Be visible and carry I.D: running with a partner or in a group not only is motivating but safe as well,
9. Enjoy the fresh air and sunshine!

If you have any questions about how to safely and effectively implement outdoor running into your exercise program please consult a health care professional at NOI!

