



PHYSIO FOCUS

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

INSIDE THIS ISSUE:

Shockwave Therapy1
 NOI Fitness Class Information1
 Muscle Regeneration..... 2
 Exercise of the Month..... 2
 Health Corner: Core Training 101...2
 Contact Info2

NOI Fitness Classes

Summer 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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“A positive attitude will lead to positive results”

Shockwave Therapy and Calcific Tendonitis

Calcific tendonitis of the rotator cuff with an accepted incidence rate of between 12-20% of the population making it one of the more common injuries experienced in Ontario. Surgical intervention has been found to have minimal role in improving long-term pain and function in this subgroup of clients. This fact, coupled with the high incidence, has made treatment from a conservative standpoint of paramount importance. A proper clinical differentiation between a rotator cuff tear is paramount in determining potential surgical referral.

A landmark randomized control trial was conducted by Gerdesmeyer (2003) to determine if extracorporeal shockwave therapy (ESWT) improves function, reduces pain, and diminishes the size of calcific deposits in patients with chronic calcific tendonitis. Either high energy ESQW, low energy ESWT, or a sham treatment was applied followed by physical therapy. Outcomes were analyzed at 3, 6, and 12 month intervals.

Their results indicated both low energy and high energy ESWT resulted in statistically significant improvements, when compared to the sham treatment, in self-rated pain, function, and radiographic changes at all three intervals examined. They also found that high energy ESWT provided greater benefits when compared to the low energy ESWT.

The researchers defined a high energy application as 1500 shocks applied prone of 0.32 mJ/mm² per treatment with 120 pulses per minute. The authors maintain that these application parameters combined with physical therapy provided the most clinically significant benefits for reducing pain, improving function, and reducing calcific footprint. The physical therapy program included manual therapy, active and passive exercise mobilization, and massage to prevent worsening in range of motion, muscular deficit, or imbalance.

NOI is pleased to have one of the very few Shockwave devices in the Niagara region capable of producing these treatment parameters.

*Gerdesmeyer et al. **Extracorporeal shock wave therapy for the treatment of chronic calcifying tendinitis of the rotator cuff.** JAMA, 2003; 290(19): 2573-2580.

Exercise of the Month: Bosu Plank!



It is very common in rehabilitation that we see non-compliance to an exercise prescription due to the exercise being perceived as “boring”. The featured exercise for this month is the Bosu plank, which is anything but “boring”!

The number of technique and exercise progressions certainly allows this exercise to be integral for clients of all levels of fitness. Shoulder stabilization and posture are enhanced as it targets multiple muscle groups all while providing a challenge to your core!

Ask one of NOI's Certified Personal Trainers how this exercise can be added to your current rehab program!

Muscle Regeneration through MENS

Skeletal muscle injury is one of the most common injuries in sports-related trauma. The standard therapeutic method of treating such injuries is conservative care including physiotherapy and rest. However, research has indicated that recovery and repair can take months depending on the extent of muscle damage². This poses a serious problem for athletes returning to sport and non-athletes returning to functional life tasks. A too early return can often prevent the injured muscle from healing completely thus yielding a chronic pain and dysfunction cycle.

Fujiya and colleagues (2015) studied the effect of microcurrent electrical neuromuscular stimulation (MENS) of muscle regeneration and on satellite cell activation. The authors injected CTX into the tibialis anterior muscle of mice to induce the necrosis-regeneration cycle. Then for 60 minutes a day for three days a week over a three week period the MENS device was applied to the tibialis anterior muscle of the mice.

The authors performed dissections of the muscle tissue at weekly intervals and found that MENS facilitated the recovery of dry muscle weight, increases in muscle protein concentration, increase in cross-sectional muscle size and substantial increases Pax7-positive satellite cells. [These findings indicate that this form of neuromuscular electrical stimulation was able to regenerate injured skeletal muscle by activating the regenerative potential cycle!](#)

² Fujiya H. et al. **Microcurrent electrical neuromuscular stimulation facilitates regeneration of injured skeletal muscle in mice.** Journal of Sports Science & Medicine 2015; 14: 297-303.



Health Corner

Core Training 101 - Low Back Stability / Mobility Relationship and Strength

It is widely believed that stretching the back, and increasing the range of motion is beneficial and reduces back problems. According to Stuart McGill, Phd, spine biomechanics expert, on average, those who have more range of motion in their backs are faced with a greater risk of (future) troubles. There is a trade-off between mobility and stability where the optimal balance is a very personal and individual variable. Not only is this mobility-stability balance important in spinal mechanics, it is also important in other joints and areas of the body as poor mobility-stability in one area can create potential injury mechanisms elsewhere.

Low Back Strength- one of the generally perceived goals of core training is to increase low back strength and believing that “no pain no gain” philosophy. Strength has very little association with low back health, in fact, a good majority of people injure their backs in an attempt to increase strength. Muscle endurance, as opposed to strength, has been repeatedly shown to offer a better protection mechanism for future trauma. When incorporating core training into a workout or training program, adjusting loads, sets, repetitions, and rest periods is very important if you want to arrive at a predetermined objective.

Want to improve your core stability? Try a plank! This exercise is stimulating and more challenging than you think if performed correctly. It will expose weaknesses and muscle imbalances you didn't know you had- which is great because your body is only as strong as its weakest part.