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NIAGARA ORTHOPAEDIC INSTITUTE

PHYSIO FOCUS

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

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NOI Fitness Classes

Winter 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.

Hatha Yoga
Tuesdays at 7:00 pm
Sequence of standing, seated and kneeling postures linked with your breath which will open the entire body and allow energy to flow more freely.

"IN A DISORDERED MIND, AS IN A DISORDERED BODY, SOUNDNESS OF HEALTH IS IMPOSSIBLE."
-CICERO

Stretching, Flexibility, and Pain Control

Stretching is a common practice in Rehabilitation clinics. Stretching can be used to assist in treating a variety of conditions and helps with improving range of motion (ROM), decreasing pain, and increasing flexibility. There are different types of stretching techniques. The main three are ballistic, static, and proprioceptive neuromuscular facilitation (PNF). Ballistic stretching uses a bouncing or jerking movement, however, the rapid and forceful nature of this movement can theoretically exceed the muscle extensibility limits and cause injuries therefore it is not recommended. The static stretch is to slowly elongate the muscle to tolerance and hold this position for a set amount of time. Finally, the PNF technique of contract/relax and hold/relax involves the use of a brief isometric (no movement) contraction of the muscle to be stretched prior to a static stretch.

There has always been some controversy regarding the length of time to hold a stretch - most research shows that a hold of 30 seconds is the optimal time to hold. Bandy and Irion, (1994) in the Journal of American Physical Therapy Association showed that a hold of 30-60 seconds is more effective for increasing muscle flexibility than stretching for 15 seconds or no stretching. However, there was no significant difference in increasing ROM between a 30 and 60 second hold. Another study by Roberts et al, 1999 showed that holding a stretch for 15 seconds as opposed to a 5 second hold resulted in greater improvements in active and passive ROM of the lower extremity in as little as 5 weeks. Bandy et al (1997), again compared the effects of five daily frequencies and duration of static stretch on hamstring flexibility and the results suggested a 30 second duration was an effective amount of time to sustain a hamstring stretch in order to increase ROM.

Pain is also decreased by stretching. Aoki et al (2009) showed that pain decreased by 15% in patients with knee osteoarthritis who were participating in a home-based stretching program for at least 6 weeks. Pain intensity scores (VAS) were shown to be lower, there was improvement in ROM and quality of life in patients with chronic neck pain after a combination of manual therapy with a home stretching program according to a study by Cunha ACV et al (2008). It was theorized that the increase in ROM is associated with flexibility gains which in turn are linked to pain tolerance. This study also suggests a need for a continuous home exercise program to allow patients to maintain the positive results of their treatment. The clinicians at Niagara Orthopaedic Institute continue to utilize stretching in their treatment practice and ensure that patients will receive optimal, evidence-based treatment to aid in their recovery.

Team NOI Certified as "Rock-Docs"!

This past month, the Niagara Orthopaedic Institute was pleased to host the first local Functional Movement Taping (FMT) course through RockTape Canada! Functional movement taping is a paradigm of applying therapeutic tape to stimulate the nervous system thereby optimizing motor output via the central nervous system.

These techniques were developed with high performance athletes in mind but are easily applied to all client populations for a wide array of conditions. The physiological benefits include: pain control, swelling reduction, postural awareness, and enhanced strength and stability!

9 members of team NOI were certified "Rock-Docs" and entered a very select and highly trained functional taping community. Congratulations to all who attended from NOI and facilities across our province. We look forward to implementing these highly specialized techniques with our clients!

Stress and Your Adrenal Glands

December seems to be one of those months where we tend to have a little more on the go, plus our usual daily stressors. Our adrenal glands that sit on top of the kidneys produce a hormone called cortisol, along with the catecholamine hormones, adrenaline and noradrenaline. These hormones are often referred to as the "stress" hormones. Any time that we experience stress, the adrenal glands are responsible for controlling our day-to-day stress response. Unfortunately, long-term stress can lead to exhaustion, also known as "burn out." Let's review the three stages of stress:

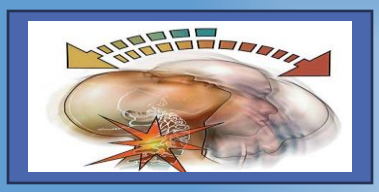
1. **Alarm Stage:** the initial stage where busts of cortisol, adrenalin and noradrenaline are released in response to the "fight, flight or freeze" response.
2. **Resistance Stage:** the body produces higher amounts of cortisol for the body to physically resist stress. When cortisol is elevated for a long period of time, people can experience both fatigue yet feeling "wired," along with anxiety and difficulty sleeping. Excess cortisol can also interfere with other hormones like progesterone, testosterone and thyroid, exacerbating hormone imbalances.
3. **Exhaustion Stage:** occurs after the body has experienced long periods of elevated cortisol leading to reduced cortisol output and an inefficiency of the body to respond to stress. Symptoms of low cortisol can manifest into extreme fatigue, reduced immune function with frequent colds, reduced ability to recover after exercise, allergies, low blood sugar, depression, low libido and rarely feeling "refreshed" on waking.

A popular botanical for regulating the cortisol cycle is *rhodiola rosea*. A double blind cross-over study was performed on stress-induced fatigue on healthy physicians during night shifts. Cognitive cerebral functions were assessed through associative thinking, short-term memory, calculation and ability of concentration, and speed of audio-visual perception. A statistically significant improvement in these tests was observed in the treatment group who received a daily low dose of *rhodiola rosea* with no side effects noted. These results suggest that *rhodiola rosea* can reduce general fatigue under certain stressful conditions.

Health Corner

Effective Treatment for Motor Vehicle Accident Trauma

Nearly 140,000 injury-causing accidents occur on Canadian roads each year. According to Transport Canada, Ontario alone has a rate of over 475 injuries per 100,000 residents occurring due to car accidents each year.



A recent observational study conducted by Chariarotto and colleagues 2014 examined patients with whiplash associated disorders (WAD) that presented with physical and psychological symptoms. These symptoms, in approximately 80% of motor vehicle accident clients, last greater one year, which indicates symptomology persists long after the initial onset of pain. Several studies have shown that therapeutic exercise for motor and sensorimotor control combined with manual therapy in a multimodal rehabilitation (MMR) program is the most effective at improving pain and disability in patient with neck disorders.

The researchers employed an MMR Physiotherapy program that included manual therapy, motor control and sensorimotor control training according to the clinical impairments of each patient. Patients were assessed before and after treatment for their physical and psychological symptoms by means of self-reported questionnaires. Regression models were estimated with pain intensity, disability and post-traumatic stress symptoms (PTSS) as outcomes. Their results indicated that, after treatment, patients exhibited significant improvements in all evaluated outcomes! Therefore patients experiencing WAD had improved outcomes on pain intensity, disability and

This knowledge is essential for clinicians in optimizing outcomes and physical recovery in patients with WAD. These findings in support of early multimodal Physiotherapy care are consistent with current evidence-based guidelines that support Physiotherapy, massage therapy, and active education as the gold-standard treatments for whiplash and other motor vehicle related trauma!

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