



# PHYSIO FOCUS

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

## INSIDE THIS ISSUE:

Ice and Acute Injury Healing.....	1
NOI Fitness Class Information .....	1
Therapeutic Ultrasound.....	2
NOI Feature Athlete: September...	2
Health Corner: Backpack Safety....	2
Contact Info .....	2

## NOI Fitness Classes

### **Summer/Fall Class Schedule**

Please sign up at front desk!

### **Pilates Mat Mondays and Wednesdays 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.



### **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.



“AS I SEE IT, EVERY DAY YOU DO ONE OF TWO THINGS: BUILD HEALTH OR PRODUCE DISEASE IN YOURSELF”

– ADELE DAVIS

## **Ice and acute injury tissue healing: the recent controversy**

For years health care professionals have recommended ice as a tool to help decrease swelling and pain and to assist with the healing process of an acute injury. In 1978 Gabe Mirkin, MD coined the term RICE (Rest, Ice, Compression, Elevation) for the treatment of athletic injuries. This has been widely accepted as the optimal initial course of care for an injury. Recently there has been debate in the literature regarding the effectiveness of ice in facilitating the healing of acute injuries.

The influence of icing on muscle regeneration was analyzed on an acutely injured skeletal muscle of anaesthetized rats (Takagi et al 2011). The results of this study showed that the non-icing group had increased markers of healing at the cellular level in comparison to the icing group. It can be implied from these results that icing an acutely injured muscle may actually hinder the healing process.

A systematic review (Bleakley et al 2004) of 22 clinical trials concluded that there was little evidence to support adding ice to compression for acute injuries.

Another study (Tseng et al 2013) looked at the use of ice versus sham ice treatment in recovery from eccentric exercise-induced muscle damage in athletes. After 2 and 3 days the athletes who received ice had significantly increased markers of muscle overload compared to the sham ice group. They also subjectively reported increased fatigue. This indicated that ice delayed recovery from eccentric exercise-induced muscle damage.

Do these results indicate that ice is no longer the best treatment option for an acute injury? The answer remains NO. *Ice is still and should be an effective modality to reduce further swelling and pain immediately following an acute injury.* What has not been cited in the studies above, is that short cooling applications for 10-15 minutes will not “cause” a reduction in healing, only longer applications result in this potential phenomenon. Furthermore, Bleakley and colleagues 2012 concluded that it is still recommended to utilize a short cooling period (less than 20 minutes) with a progressive warm-up before returning to athletic competition. If a proper warm-up is completed with a short ice application, then no negative physiological effects will be seen with respect to athletic proficiency.

It is possible that with continued research in this area that a fundamental change in how acute injuries are managed is in the near future. However, the overreaction of the media has contributed to the blanket notion against ice application.

Currently, research DOES support the use of ice for acute injuries as long as it is less than 20 minutes in duration and followed by a progressive warm-up, if returning to sport immediately following cooling. The clinicians at Niagara Orthopaedic Institute will continue to pay close attention to the most up to date literature to ensure that their patients will receive optimal, evidence based treatment to optimize recovery from injury.

## NOI Feature Athlete for September Stephanie Iannacchino



Stephanie Iannacchino is a 22-year-old student athlete, born and raised in St. Catharines. After very successful seasons at St. Paul High School, along with the St. Catharines Rowing club, Stephanie made her way down south to begin her new rowing career. Stephanie was offered an athletic scholarship for the Buffalo Division 1 rowing team. Stephanie is completing her final year at The State University of New York at Buffalo, studying Health Promotion & Nutrition. The University at Buffalo student athletes are committed to community outreach and are role models for social change. Stephanie has done a variety of volunteer work through her University and on her own. Currently most of her volunteer work is done through the Heart and Stroke Foundation, and the Canadian Coast Guard.

### Therapeutic Ultrasound and Tissue Recovery!

With the significant advancement in technology over that past decade, there has been an emergence of numerous clinically relevant modalities in Physiotherapy practice (Shockwave therapy, low level laser therapy, MRS). However, therapeutic ultrasound (t-u/s) continues to be the most widely used modality to reduce pain and promote soft tissue healing. The high use rate by professionals is due to the fact that ultrasound therapy continues to show significant improvements with respect to healing and pain relief in the literature!

Saini et al 2002 conducted a study on the Achilles tendon in five dogs with torn Achilles tendons. Two groups were used in analysis: group I (control group, no ultrasound) and an ultrasound treatment group (ultrasound therapy was given to the animals of group II at 0.5 W/cm<sup>2</sup> for 10 min daily). Post-operatively, healing of the Achilles tendon was monitored using clinical observations, ultrasonography, gross and histomorphological observations at various intervals up to 120 days in both groups.

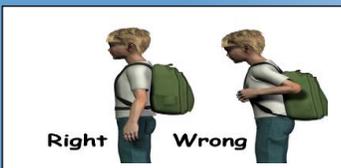
Their results indicated that the dogs showed significant "lameness" for the first 4-5 days, which disappeared earlier in the ultrasound-treated (group II) animals than the controls group. Ultrasonography showed anechoic to hypo-echoic echo-texture on days 3 and 7 after repair. By day 40, the echo-texture started to improve to hypo-echoic in group II, but in group I anechoic areas were still observed. Gross observations suggested that the Achilles tendon in group II showed comparatively fewer adhesions than in group I animals. Histologically, in group II (treated), on day 40, the union was comparatively better without any inflammatory reaction. Bundle formation had begun in the ultrasound-treated animals which was not observed in the control animals. By day 90 and 120 these positive changes continued to be accentuated in the ultrasound group when compared to the control group tendon.

These results indicate that therapeutic ultrasound therapy was effective in providing pain relief and promoting Achilles tendon healing! Therefore, ultrasound therapy is a very useful clinical tool and should continue to be utilized as a supplementary Physiotherapy modality.



## Health Corner

### Backpack Safety Tips for Back to School



Backpacks are used by almost every child and young adult when carrying objects to and from school. There exists a large variety of designs and styles to choose from but which ones are the safest for your child's body? The American Academy of Orthopedic Surgeons provides useful guidelines to follow when selecting the most appropriate backpack for your child.

When choosing a backpack, look for one that is appropriate for the size of your child. In addition, look for some of the following features: wide straps, padded shoulder straps, two shoulder straps, padded back, waist strap, lightweight backpack, and rolling backpack.

To prevent injury when using a backpack, do the following:

- Always use both shoulder straps to keep the weight of the backpack better distributed across the child's back. A crossbody bag can also be a good alternative for carrying books and supplies.
- Tighten the straps to keep the load closer to the back (reduces stress on the spine)
- Organize the items: pack heavier things low and towards the center.
- Pack light, removing items if the backpack is too heavy. Carry only those items that are required for the day, and if possible, leave unnecessary books at home or school.
- Lift properly by bending at the knees when picking up a backpack

