High Intensity Interval Training (HIIT)

What is it?
High intensity interval training (HIIT) is a type of physical activity that involves alternating periods of high intensity exercise with low intensity recovery periods.

Why do it?

Improved athletic performance - Incorporating HIIT training into workouts can help increase endurance and speed.
*Example:* An 8.2 second improvement in 2000m rowing time was found in well-trained rowers following 4 weeks of HIIT training.

Weight loss – The high intensity of interval training burns a large amount of calories, often more than what would be achieved by exercising for a longer period of time at a lower intensity!

Increased metabolic rate - Resting metabolic rate (RMR) is the amount of calories burnt at rest. Interval training increases the body's RMR for 24 hours following exercise, resulting in higher calorie utilization even when your workout is over.

Aerobic and anaerobic systems -
Your aerobic energy system uses oxygen to provide energy during low intensity exercise (think steady pace jogging) while your anaerobic energy system does not use oxygen and is used at the start of exercise and during high intensity exercise. HIIT training improves both these energy systems, meaning that you will be able to go for a longer bike ride, and that you will be less breathless after sprinting to catch the bus.
How To Get Started!

Basic protocol:
Alternate high intensity exercise with low intensity recovery periods. The HIIT protocol is pretty simple and can be applied to almost any exercise! Examples are provided below to assist with incorporating interval training into your daily life:

**TABATA**

**Example Tabata Protocol:**
- 8 repetitions each round
- 20 seconds on, 10 seconds rest
- 1 minute recovery period between each round

Tabata is a popular form of interval training in which you complete 8 repetitions of each exercise. Each repetition is performed at maximal intensity for 20 Running and HITT perform them using the example Tabata protocol.

Why do it? (Continued)

**Workout efficiency**– The most common reason people don’t exercise is because they have trouble making time for it in their busy lives. With HIIT training, it is easy to adjust the duration of your exercise to fit into your schedule or to perform mini HIIT workouts throughout the day!

*Example:* Improvements in insulin sensitivity were seen after a 4 week training plan involving interval training 3 days per week. Each workout simply consisted of gently cycling for 2 minutes and then cycling at maximal effort for 20 seconds, repeated 3 times. Increased insulin sensitivity is associated with decreased risk of type 2 diabetes, therefore only 7 minutes of exercise per day was demonstrated to improve health!
As you can see, interval training can be applied to almost any form of exercise, including cycling, rowing, skating, swimming, etc. Just rotate between high intensity and low intensity exercise, adjusting the duration of exercise to suit your needs.

**Things to Remember**
- Always perform a proper warm-up before taking part in any exercise, and complete a full stretch following exercise to avoid injuries.
- Be sure to have plenty of water on hand during exercise and hydrate well following your workout!
- Listen to your body. If you are too sore to exercise or have planned a workout that is beyond your current fitness abilities either take a rest day or enjoy a low-impact activity such as a brisk walk. It is always better to take it easy than to endure an injury.
- If you have any concerns about persisting pain, or your exercise routine, consult a registered health professional.

**Beginner Runners**
For those new to running, an effective way to incorporate running intervals into your workout is to use a work to rest ratio of 1:2. Following a brisk walk as a warm-up, run for 30 seconds, and then walk for 60 seconds. Try repeating this 5-10 times.

**Experienced Runners**
For those with a solid running foundation, a 1:1 ratio of work to rest will be more effective in adding HIIT training to your workout routine. After moderately jogging for 1-2 km as a warm-up, sprint for 30 seconds and then walk for 60 seconds. Repeat 5-10 times.

For more information on this program or to request a brochure, contact us at hpc@uoguelph.ca.
HPC Services

The Health and Performance Centre at the University of Guelph can play an integrative role in assisting you with leading a healthy active lifestyle.

References and Further Reading

- http://www.tabatatraining.com/tabata-intervals/
- http://sportsmedicine.about.com/od/tipsandtricks/a/Intervals.htm

Nutrition Counseling Services

It is very important to eat properly before and after exercise in order to fuel your body prior to physical activity and to replace nutrient stores post-exercise. The Registered Dieticians at the HPC can provide valuable insight into the relationship between nutrition and exercise.

Physiotherapy Services

Injuries can unfortunately force people to take a break from their workout routine. If you experience aches or pains during exercise (knee or back pain, ankle sprains, etc) it is often caused by an underlying issue such as a muscle imbalance. Physiotherapists at the HPC can use their knowledge of anatomy and rehabilitation techniques to prevent and reduce injuries and to get you back to taking part in physical activity as soon as possible.

For more information on services offered by the Health and Performance Centre visit: https://www.uoguelph.ca/hpc/our-services