9018 - Interval Training

Vary your training intensity to boost your performance

Interval training has been the basis for athletic training routines for years. The first forms of interval training, called 'fartlek' involved alternating short, fast bursts of intensive exercise with slow, easy activity. Fartlek was casual, unstructured training that perfectly fit it's english translation: "speed play."

The interval programs of today have become highly sophisticated methods of structured training for athletic performance enhancement. Physiologists and trainers have designed interval programs that are specifically suited to individual athletes. These sessions include precisely measured intervals that match the athlete's sport, event and current level of conditioning. Often the appropriate intensity and duration of the intervals is determined by the results of anaerobic threshold testing (AT) that includes measuring the blood-lactate of an athlete during intense exercise.

Interval training works both the aerobic and the anaerobic system. During the high intensity effort the anaerobic system uses the energy stored in the muscles (glycogen) for short bursts of activity. Anaerobic metabolism works without oxygen. The by-product is lactic acid, which is related to the burning sensation felt in the muscles during high intensity efforts. During the high intensity interval, lactic acid builds and the athlete enters oxygen debt. During the recovery phase the heart and lungs work together to 'pay back' this oxygen debt and break down the lactic acid. It is in this phase that the aerobic system is in control, using oxygen to convert stored carbohydrates into energy.

This repetitive form of training leads to the adaptation response. The body begins to build new capillaries, and is better able to take in and deliver oxygen to the working muscles. Muscles develop a higher tolerance to the build-up of lactate, and the heart muscle is strengthened. These changes result in improved performance particularly within the cardiovascular system.

Interval training also helps prevent the injuries often associated with repetitive endurance exercise, and they allow you to increase your training intensity without overtraining or burn-out. In this way, adding intervals to your workout routine is a good way to cross train.

According to the American College of Sports Medicine, more calories are burned in short, high intensity exercise. If you are counting calories burned, high intensity exercise, such as intervals, beats long, slow endurance exercise hands down - but you may pay a price. Read more about the benefits and dangers of high intensity exercise.

You don't need to be a world-class athlete and have sophistocated blood analysis to take advantage of the benefits of interval training. The standard 'speed play' training of fartlek works well for the rest of us. This type of interval work is based upon your subjective needs. Simply pay attention to how you feel and set your intensity and duration accordingly.

Precautions for Safe Interval Training

- Warm Up before starting intervals
- Assess current conditiong and set training goals that are within your ability
- Start slowly. (for example: walk 2 minutes/ run 2 minutes) In general, longer intervals provide better results
- Keep a steady, but challenging pace throughout the interval
- Build the number of repetitions over time
- Bring your heart rate down to 100-110 bpm during the rest interval
- To improve, increase intensity or duration, but not both at the same time
- Make any changes slowly over a period of time
- Train on a smooth, flat surface to ensure even effort
- You can also use circuit training as a form of interval training

Advanced Interval Training
You can take a more scientific approach to interval training by varying your work and recovery intervals based on your pre-determined goals. Here are the four variables you can manipulate when designing your interval training program:

- Intensity (speed) of work interval
- Duration (distance or time) of work interval
- Duration of rest or recovery interval
- Number of repetitions of each interval

It is recommended that you consult an athletic trainer, coach or personal trainer prior to designing an interval training program.

Short, High Intensity Exercise Burns More Calories

When it comes to calorie burning during exercise, research shows that short, high-intensity aerobic sessions burn more calories than longer, lower-intensity aerobic workouts. According to the American College of Sports Medicine, more calories are burned in short, high intensity exercise.

For example, a 154 pound person who runs at a pace of 8 mph will burn 320 calories in 20 minutes. That same person, walking at 3 mph for an hour, will burn 235 calories.

Safety Considerations
Although shorter, high-intensity workouts burn the most calories, they aren't always the best option. They are not recommended for a novice exerciser because they can contribute to injuries in individuals who aren't prepared for the physical demands of this type of workout. They are also hard to maintain and should be used sparingly.

Even a highly fit athlete should vary his workout and have some long and slow days for endurance and recovery. Finally, if you work at a high intensity, odds are you will fatigue sooner and be forced to stop after about 20 minutes. If you go slow, you will likely to be able to continue exercising for several hours.

If you're already exercising regularly and progressing in your exercise intensity, you may want to try shorter, more intense workouts to enhance your calorie burning. However, if you're just starting an exercise program, a slow and steady progression of longer and less intense exercise is probably a better option.

The sort of exercise you chose depends upon your ultimate goal. If you are training for mountaineering or backpacking, you'd better plan some long, steady days of hiking. If you want to lose those newly acquired holiday pounds, give the high intensity workout a try.

Keep in mind that if you have specific training goals you should adhere to the principles of conditioning and follow an appropriate training program for your sport.

It is recommended that you see your doctor before starting an exercise program if you're older than age 40 and have never exercised, a smoker, overweight or have a chronic health condition.