

High Intensity Interval Training (HIIT)



Introduction

HIIT is an exercise strategy that uses short periods of intense anaerobic exercise interspersed with periods of less-intense recovery. It is cardiovascularly intensive and not recommended for those needing cardiac rehabilitation following heart injury or those requiring a more moderate intensity workout. The HIIT training session generally lasts from 4-30 minutes and these short, intense workouts can provide improved athletic capacity and conditioning in addition to effective blood sugar control and weight loss.

Basic Examples

TABATA (Named after Dr. Tabata): stands for the equation $20/10 \times 8 = 4$

- 20 seconds of intense exercise work
- Followed by 10 seconds of rest and recovery
- Repeated 8 times
- For a total of 4 minutes

This process can be applied to many types of exercise, for example:

1-movement: Sprints

- Run sprints for 20 seconds
- Rest for 10 seconds
- Repeat above cycle 8 times

2-movements: V-sits, Supermans

- V-sits for 20 seconds
- Rest for 10 seconds
- Supermans for 20 seconds
- Rest for 10 seconds
- Repeat above cycle 4 times

4-movements: Push-ups, Pump-up Jumps, Hi-knee running on the spot, Burpees

- As above do each movement for 20 seconds, resting for 10 seconds between each one and then repeat 1x.

IE. <http://tabatagenerator.net/>

General Procedure

The general flow of a HIIT workout includes a moderate warm up period. This is followed by several repetitions of intense exercise separated by medium intensity exercise recovery times and finishes with a cool down period. The number or intensive intervals and total duration may vary from time to time.

Research

In randomized controlled trials HIIT has been found to be equally effective as endurance training in improving cardiovascular fitness in adults aged 18-45 however VO2Max rates are shown to improve more with HIIT. Some meta-analysis have shown that HIIT with four-minutes at 85-90% max heart rate with threeminute intervals at 60-70% of max heart rate was more effective than moderateintensity continuous training at improving blood vessel function and other markers of vascular health.

HIIT also significantly lowers insulin resistance as compared to moderate intensity continuous training and lead to decreases in fasting blood glucose and weight loss.

Easy 15 minute HIIT Routine

3 rounds, 45 seconds work, 15 seconds rest

- Jumping jacks
- Sumo squats
- Butt kicks
- Tricep dips
- Side lunges



Resources

Ramos JS, Dalleck LC, Tjonna AE, Beetham KS, Coombes JS (May 2015). "The impact of high-intensity interval training versus moderate-intensity continuous training on vascular function: a systematic review and meta-analysis". *Sports Med (Systematic Review and Meta-Analysis)*. 45 (5): 679–92.

Weston KS, Wisloff U, Coombes JS (August 2014). "High-intensity interval training in patients with lifestyle-induced cardiometabolic disease: a systematic review and metaanalysis". *Br J Sports Med (Systematic Review & Meta-Analysis)*. 48 (16): 1227–1234.

Jelleyman C, Yates T, O'Donovan G, Gray LJ, King JA, Khunti K, Davies MJ (November 2015). "The effects of high-intensity interval training on glucose regulation and insulin resistance: a meta-analysis". *Obes Rev (Meta-Analysis)*. 16 (11): 942–61.