# Sprint program vs. continuous training

According to a recent study conducted by McMaster University in Ontario, Canada, the physiological effects of sprint interval training (SIT) are congruent with the effects of moderate-intensity continuous or endurance training (MICT). Sprint interval training consists of several short periods of intense exercise, each followed by a period of low-intensity exercise, whereas moderate-intensity continuous exercise is characterized by a constant level of moderate exercise for a long period of time.

Over a period of 12 weeks, researchers recorded the changes in body fat, heart and lung fitness, blood sugar control, and skeletal muscle content in participants who were deemed inactive by an International Physical Activity Questionnaire. The total body fat percentage in all participants decreased by two percent, and the maximum oxygen intake increased by about 19 percent for both the SIT and MICT groups. Additionally, the body's ability to absorb blood sugar similarly increased in both groups, and the concentration of an energy-metabolizing protein in muscle cells increased by 48 percent and 27 percent in the SIT and MICT groups, respectively.

Twelve weeks of sprint interval training decreased body fat and increased cardiorespiratory fitness, blood sugar control, and skeletal muscle fitness to the same degree as moderate-intensity training; the only difference between these two exercise methodologies is the length of time each one took. A session of SIT took ten minutes, whereas a session of MICT took 45 minutes—almost an 80 percent difference in time commitment. While SIT may appear to be a better option than MICT with regard to time commitment, not all people have the level of physical activity, fitness, and motivation that SIT requires.

Dr. Steven Chudik and the Orthopaedic Surgery & Sports Medicine Teaching & Research Foundation (OTRF) along with Fitness Consultant and Personal Trainer, Keith Tesch, CSCS, CNT, developed a sprint interval training program.

Before starting any program, you should consult your physician. Also, always warm up for several minutes before beginning any workout and never exercise beyond the level at which you feel comfortable. The following are some specific warm-up exercises to be performed before each sprint interval training session.

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# OTRF Sprint Training Program

| Fitness Level | Jog/Sprint Time (Seconds) | Number of Sets by Weeks 1-7 | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** |
| **Bad Shape** | 60/15 | 5 | 6 | 7 | 6 | 7 | 8 |
| **Average Shape** | 60/15 | 6 | 7 | 8 | 7 | 8 | 9 |
| **Good Shape** | 60/30 | 5 | 6 | 7 | 6 | 7 | 8 |
| **Great Shape** | 60/45 | 6 | 7 | 8 | 7 | 8 | 9 |
| **Elite Athlete** | 60/45 | 7 | 8 | 9 | 8 | 9 | 10 |

| Fitness Level | Jog/Sprint Time (Seconds) | Number of Sets by Weeks 7-12 | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Week 7** | **Week 8** | **Week 9** | **Week 10** | **Week 11** | **Week 12** |
| **Bad Shape** | 60/15 | 9 | 6 | 7 | 8 | 9 | 10 |
| **Average Shape** | 60/15 | 10 | 7 | 8 | 9 | 10 | 11 |
| **Good Shape** | 60/30 | 9 | 6 | 7 | 8 | 9 | 10 |
| **Great Shape** | 60/45 | 10 | 7 | 8 | 9 | 10 | 11 |
| **Elite Athlete** | 60/45 | 11 | 8 | 9 | 10 | 11 | 12 |

This is a 12-week sprint interval training (SIT) program. One begins by estimating their starting fitness level either “bad shape,” “average shape,” “good shape,” “great shape,” or “elite athlete.” After a proper warm up (see next page), one performs a comfortable jog for 60 seconds followed by 15 to 45 seconds of a continuous and sustained sprint (based on fitness level chosen) to complete a set. Sets of jogging and sprinting are repeated a number (five to 12) of times without rest based on your fitness level and the week number (see above chart). Start at a conservative speed for week one. Each week as you increase your sets, you also can increase your sprint speed. Keep the jogging speed the same each week. As your conditioning level progresses, you can advance your fitness level as tolerated.

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| Warm Up Exercises | Reps |
|---|---|
| Jumping Jacks | 30 |
| Foot to Hand | 10 each side |
| Inchworm | 5 |
| Leg Swings Forward and Back | 10 |
| Leg Swings Side to Side | 10 |
| Butt Kicks | 20 |

Good body and running mechanics also are very important to minimize injury and ensure you benefit from the program. Here are a tips to remember as you perform the sprinting exercises in the program.

**Some tips on proper running mechanics**

- Stay relaxed in your face, neck, and shoulders
- Keep your upper body tall and upright
- Keep your elbows tight to your body
- Avoid crossing your body with your arms.
- Swing your arms at your shoulders, not your elbows
- Lift your leg at the hip
- Drive your foot into the ground