



High Intensity Interval Training and the CSEP-CPT Scope of Practice

In recent years, interval training in the forms of high intensity interval training (HIIT) and sprint interval training (SIT) have become a popular form of exercise. Research on interval training has demonstrated that this style of training can have positive effects on fitness and health (1-5). HIIT has been shown to be safe and effective for healthy adults (6, 7) and also for individuals with chronic conditions (8-11). HIIT may also be more enjoyable for many people than traditional moderate intensity continuous exercise (1, 9).

CSEP-CPTs are sanctioned to administer sub-maximal exercise testing and prescription. CSEP-CPTs are not sanctioned to utilize any assessment protocols or design exercise programs that require maximal heart rate. This raises questions about CSEP-CPTs prescribing HIIT for clients.

The definition of HIIT has been inconsistent. A systematic review (11) has recommended a classification scheme to standardize this terminology. *Specifically, HIIT is defined as interval training with a target intensity between 80% and 100% of peak heart rate and SIT is defined as supramaximal, or “all-out” exercise with a target intensity of 100% VO₂max.* While SIT may be appropriate for young healthy individuals it may be less safe and less tolerable or enjoyable for others, especially individuals with greater health risks (9).

Thus, there have been other HIIT protocols developed that are still effective and time efficient but have less risk as they do not require maximal or supramaximal exercise intensity (9). HIIT protocols that require exercise intensities below 90% of peak heart rate are within the CSEP-CPT Scope of Practice (SOP).

It is the CSEP-CPT's responsibility to understand which of the large number of HIIT protocols will fit within their Scope of Practice. Standard screening processes still apply and all clients should be monitored for exercise tolerance, especially given the more vigorous nature of this type of exercise. As always, CSEP-CPTs are encouraged to engage in continued professional development to expand and strengthen their expertise, and additional education in HIIT would be beneficial for all CSEP-CPTs and CSEP-CEPs who wish to use this style of training with their clients. A CSEP HIIT Module will be released in 2017.

A CSEP-CPT is not sanctioned to use maximal exercise protocols for testing or training. CSEP Professional Liability Insurance coverage would be void for CSEP-CPTs working outside their SOP. Certified members who wish to use maximal or supramaximal testing and training protocols should consider obtaining certification as a CSEP-CEP. There are many HIIT training protocols that would fall within the CSEP-CPT SOP, the following are three examples of generic HIIT protocols and how they may be used for



specific clients. Each of these protocols can be adapted as necessary to fit your specific client's needs. Examples of adaptations include the use of different equipment (steps) or no equipment (walking/running outdoors, body weight) and methods of intensity increase (incline vs. speed vs. resistance).

Example 1: 30-minute training session

Protocol Summary:

Warm up – 5 minutes moderate intensity aerobic

HIIT – 10 rounds: 1 minute “very hard” intensity (RPE 15-17); 75-85% of HRR (154-166bpm), or 80- 90% HRmax (146-165bpm), 1 minute active low intensity recovery

Cooldown – 5 minutes low-intensity

Client profile: Age 37, male, runs or cycles 1-2 times a week, does resistance training occasionally. mCAFT score was “Good”. Resting heart rate is 68. He wants to improve fitness but has 3 children so free time outside of work is limited. He is looking for an option to squeeze in a high intensity workout on 1-2 lunch breaks per week. Time is a barrier for him as he has a maximum of 1 hour, including changing, showering, etc.

Warm-up: 5 minutes moderate intensity cycling.

HIIT: Cycling on spin bike, 10 rounds (20 minutes):

- 1 minute cycling at “very hard” intensity (RPE 15-17); 75-85% of HRR (154-166bpm), or 80- 90% HRmax (146-165bpm)
- 1 minute recovery, low intensity cycling

Cool down: 5 minutes low intensity cycling, 10 minutes dynamic flexibility exercises.

Example 2: 45-60 minute training session

Protocol Summary:

Warm up – 5 minutes moderate to low intensity aerobic and 10-15 minutes of dynamic flexibility

HIIT – 5 exercises x 2 rounds; target intensity is 15-17 on the RPE scale, 20 reps + 1 minute recovery

Cooldown – 5 minutes moderate to low-intensity and 10-15 minutes of dynamic flexibility

Client profile: Age 42, female, rides bike 3 times a week to work, no resistance training experience, does yoga occasionally, aerobic and MSK assessment scores were all fair or good. She wants to do HIIT training because of time limitations; she will train with you on



Tuesday and Thursdays after work. Client wants to work on muscular strength and endurance because she has a child and she finds she doesn't have the stamina to lift and carry the baby for long periods of time.

Warm-up: 5 minutes of moderate to low intensity cycling and 10-15 minutes of dynamic flexibility exercises.

HIIT: 5 exercises x 2 rounds; target intensity is 15-17 on the RPE scale

- Air squats: 20 reps + 1 minute recovery
- Overhead press: 20 reps +1-minute recovery
- Lunges: 10 per leg + 1 minute recovery
- Bent over row: 20 reps + 1 minute recovery
- Squat to press: 20 reps + 1 minute recovery

Cool-down: 5-8 minutes of moderate to low intensity cycling 10-15 minutes of flexibility exercises

Example 3: 35-40 minute training session:

Protocol Summary:

Warm up – 5 minutes moderate intensity aerobic

HIIT – 4 rounds: 4 minutes at 80-85% of HRmax (129 – 137 bpm), RPE 15-16, 3 minutes low intensity recovery

Cooldown – 5 minutes moderate to low-intensity

Client profile: Female, 59 years old, walks small dog 3 times a week and swims once per week. Aerobic fitness is Fair. Client is interested in doing some higher intensity exercise to supplement current lifestyle and improve fitness; says she often finds exercise boring.

Warm-up: 5 minutes moderate intensity walking on a treadmill.

HIIT: incline treadmill walking, 4 rounds:

- 4 minutes of uphill treadmill walking at 80-85% of HRmax (129 – 137 bpm), RPE 15-16.
- 3 minutes recovery, flat walking

Cooldown: 3-5 minutes easy walking.

- CSEP, September 2017



References

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