

Monitoring Your Exercise Intensity

Exercise intensity is an important variable for all exercise training workouts and refers to the level of physiologic work being accomplished during exercise. Although directly measuring oxygen uptake (VO_2) is the most accurate indicator of exercise intensity, it generally is measured in a laboratory setting and it is not realistic to use it to monitor day-to-day training. Without the benefit of VO_2 measurement, there are three other measures that can be used to monitor exercise intensity: target heart rate, rate of perceived exertion (RPE), and the "Talk Test."

TARGET HEART RATE

Physical activity guidelines typically present exercise intensity as a percentage of age-related maximum heart rate and categorize these levels as "light," "moderate," or "vigorous." Moderate intensity is defined as 64% to 75% of a person's maximum heart rate (MHR) and vigorous as 76% to 95% of the MHR. Maximal heart rate is determined via a maximal exercise test or by using an estimation formula, most commonly $220 - \text{your age}$. Unfortunately, although commonly used, such HR estimation formulas can be 10 to 15 BPM more or less than your actual MHR and thus should be used with caution.

The easiest and most accurate method for monitoring exercise HR is to wear a HR monitor or to use the monitors that frequently are included in the exercise equipment. Without a HR monitor, you will need to stop exercising for a moment to take your pulse. Some medications (*e.g.*, beta blockers) and health conditions (*e.g.*, atrial fibrillation) can affect HR, making it a challenge to monitor accurately.

RATE OF PERCEIVED EXERTION

Posted on the walls of many fitness facilities are numbered scales going from 6 to 20 or 0 to 10. These are referred to as RPE Scales, originally developed by Gunnar Borg, M.D., Ph.D., a Swedish psychologist. Perceived exertion reflects an interaction between the body and mind that links physiological sensations experienced during exercise to generate a "perception of effort." These sensations include things such as HR, sweating, breathing, muscle fatigue, discomfort, and other symptoms that occur during activity. Research has shown a strong correlation of one's rating of perceived effort to other parameters of exercise intensity such as HR and anaerobic threshold.

A sample of the Borg 6-to-20 scale is presented in the sidebar. A rating of 6 means "no exertion at all" and is consistent with rest, a rating of 11 to 13 generally indicates moderate or conversation pace intensity, and a rating of 20 refers to maximal exertion. There are a few key factors to keep in mind when using the RPE Scale:

- Try not to focus on any one sensation, or location (*e.g.*, legs), but on your total body feeling of exertion
- Remember that the scale ranges from 6 or rest to 20 at maximal effort; you want to choose the number that best reflects the level of exertion you are feeling overall. There is no right or wrong answer.
- Strive to assess your feeling of exertion as honestly as possible without considering the actual workload or what others around you are doing.

RPE also can be useful in monitoring your exercise progress. For example, at baseline, your RPE while walking at 3 miles per hour was 13 and, 2 months later, you find that your perception at 3 miles per hour has reduced to 9 to 10 and an RPE of 13 is now associated with a faster 4-miles-per-hour pace. If you'd like a copy of the Borg Scale, please contact us.

TALK TEST

Exercise intensity also can be monitored by using the "Talk Test." Research has shown that this simple test is a valid measure of what is referred to as the "ventilatory threshold" or, more simply, moderate activity. This level of exertion is the fastest rate that you can exercise and talk comfortably, still speaking three to five words per breath. Using the "Talk Test" is a simple, yet effective, way to gauge exercise intensity.

Monitoring exercise intensity is an important variable for people at all levels of conditioning. Using one or all three of these methods simultaneously will maximize your workout benefits by exercising at the proper intensity level for your current health, conditioning status, and fitness goals.

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