

Commercial Program and Product Review

Heart Rate Monitors

Consistent, moderate intensity aerobic exercise has been shown to improve overall cardiovascular function and minimizes the risk of musculoskeletal injuries. Research has also shown that exercising at lower intensities increases fat oxidation, thereby facilitating weight loss and body composition changes.¹ Moderate intensity exercise is also easier to sustain for extended periods of time. But how does an individual determine what type of effort constitutes “moderate intensity exercise?”

Determining Exercise Intensity

Exercise intensity can be determined a few different ways. One simple way is to utilize the “talk test,” where the person exercising should be able to talk but with labored breathing. If talking is comparable to the type of conversation one might have over a meal, the exercise intensity is too low, and if the person cannot talk at all, the intensity is too high.

Another option is the Rating of Perceived Exertion (RPE) scale. Simplified from the Borg Scale (which uses a more

complex rating scale of 6–20), it is a scale of 1 to 10. A 1 is equivalent to “no effort at all” and a 10 represents “all out, maximal effort.” On this scale, moderate intensity exercise would be equivalent to a 6 or a 7. Both of these measures are subjective and depend on the individual’s perceived effort.

Another more direct option to measuring exercise intensity is a heart rate monitor. Heart rate monitors provide

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continuous, direct feedback on how fast the heart is beating (displayed in “beats per minute”) during exercise. The faster the heart rate is, the harder the effort.

Heart Rate Monitors*

Heart Rate Monitor	Features	List Price**	Company Website
Polar FS1	Heart rate display. Exercise duration timer. Time of day. Programmable target zone with audible alarm. Chest transmitter included.	\$59.95	<www.polarusa.com>
Sensor Dynamics Gemini	Continuous heart rate display. Water resistant.	\$59.00	<www.sensordynamics.com>
Timex 5G941 Heart Rate Monitor	Heart rate display. Time of day. Workout time automatically recorded. Indiglo backlight. Chest transmitter included.	\$50.00	<www.timex.com>
Reebok 120 Heart Rate Monitor	Time of day. Calendar. Audible and visual alarms. Stopwatch.	\$89.99	<www.store.reebok.com>

*This is not an exhaustive listing of heart rate monitors or their features.

**Prices obtained on manufacturer’s website, August, 2006.

Using A Heart Rate Monitor

A heart rate monitor typically consists of two pieces, a chest strap (adjustable and worn at the level of the heart) and a watch-type monitor worn on the wrist that displays the heart rate reading. Some wireless heart rate monitors have been recently introduced that do not require a chest strap.

To determine a heart rate range, a percentage of an individual's maximal heart rate is calculated. The American College of Sports Medicine suggests moderate levels of cardiovascular exercise equate to 55–70% of the maximal heart rate.²

Maximal heart rate can be directly measured or indirectly estimated. If the patient has had a graded exercise test or stress test, a direct measure of the individual's maximal heart rate achieved during exercise is available.

If a direct measure is not available, a simple, more general equation ($220 - \text{age}$) can give an age-predicted maximal heart rate. As this is an estimate, it is important to note that this equation can vary by as much as 10–12 beats in either direction with individuals of the same age,² so it is best used as a guideline and not as a definite.

Exercising heart rate can be influenced by a number of factors, including medication, environmental conditions, and illness, so patients should be told if any of these con-

ditions might apply to them. In these situations, heart rate monitors can be used in combination with the more subjective measures mentioned previously.

Basic Heart Rate Monitors

There are a wide variety of brands and types of heart rate monitors currently on the market. See the table on page 242 for a listing of some of the more entry-level heart rate monitors and their basic features. ■

References

1. Van Ageel-Leijssen D, Saris W, Wagenmakers A, Senden J, Van Baak M. Effect of exercise training at different intensities on fat metabolism of obese men. *J Appl Physiol.* 2002;(92):1300–1309.
2. American College of Sports Medicine. *ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription.* 4th ed. Baltimore: Lippincott Williams & Wilkins, 2001.

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