Dear Alice,

I work out on my treadmill 20 to 30 minutes a day, usually one to two miles. My husband says that there is a minimum and maximum heart rate. Is there a formula that I can use to calculate this information? Please advise.

Answer

Dear Reader,

Yes, it's true that there are recommendations for minimum and maximum heart rate during physical activity. Two slightly different formulas are currently used as guides. Both formulas take your age into account, but one also factors in your resting heart rate and is particularly useful for individuals training with a specific performance goal in mind. Heart rate is measured in beats per minute (bpm). Before demonstrating each formula, it's useful to define a few terms:

- **Maximum heart rate** is an estimate of the heart rate that someone potentially could (not should) achieve during maximum physical exertion.
- **Resting heart rate** is as simple as it sounds? your heart rate at rest with no physical exertion (best when measured in the morning before any stress, caffeine, or much movement).
- **Target heart rate** is a percentage of your maximum heart rate. Experts recommend keeping your heart rate in a certain range to achieve benefits during physical activity, depending on your level of conditioning and physical activity goals.

To demonstrate how each formula works, let's say that Devon is 24 years old, has a resting heart rate of 65 bpm, and wants to work out between 60 and 80 percent of maximum heart rate. Time for a little arithmetic!

**Formula 1:**

Maximum workout heart rate =

\[(220 \ - \ age) \times \text{percent of maximum heart rate}\]

\[(220 - 24) \times .60 = 117\]
According to this formula, Devon should maintain a target heart rate between 117 and 157 bpm to reach 60 to 80 percent of maximum heart rate while working out.

**Formula 2:**
Maximum workout heart rate, adjusted for resting heart rate =
(220 - age - resting heart rate) X percent of maximum heart rate + resting heart rate

\[
(220 - 24 - 65) \times 0.60 + 65 = 144 \\
(220 - 24 - 65) \times 0.80 + 65 = 170
\]

According to this formula, Devon should maintain a target heart rate between about 140 and 170 bpm to reach 60 to 80 percent of maximum heart rate while working out.

As you can see, these formulas give Devon different recommendations for target workout heart rates. This is because the second formula adjusts for resting heart rate, a number that normally gets lower for most people as they are more physically active and become more conditioned. Using the second formula can increase the accuracy of target heart rate recommendations for people who get regular, consistent physical activity.

The easiest place to check your heart rate may be on your carotid artery in the neck (avoid pressing too hard or the reading may be less accurate). Check your heart rate before, during, and after physical activity by taking your pulse for ten seconds and multiplying by six, or for 15 seconds and multiplying by four. You can then adjust your workout accordingly. Remember, you are estimating your heart rate with these formulas, so always let safety come first. Stop exercising if you feel dizzy, faint, or shortness of breath.

Hope this heart to heart was helpful!

Alice!

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