What exactly does moderate intensity mean? [1]

Dear Alice,

I've seen a gazillion articles lately about exercising for "30 minutes at moderate intensity," but they always describe moderate intensity as walking at four miles an hour. I can't walk at four miles an hour because of mechanics; my legs seem to be just the length to have to switch from walking to jogging at about four miles an hour, so I can't do the walk to be able to figure out what "moderate intensity" feels like. Can you give any other measure for what is "moderate" and what is "intense"? percentage of maximum heart rate or METS or anything like that?

? Confused

Answer

Dear Confused,

You've made a pretty astute observation?when it comes to measuring the intensity of physical activity, one size does not fit all! In other words, ?walking at four miles an hour? might be a good benchmark for measuring moderate intensity activity for some people, but not everybody. The good news is that there are relative measures of physical activity intensity, which can take into account your body's unique energy expenditures. Keep reading to learn how some of these measures define moderate and vigorous physical activity as well as some practical examples to consider the next time you?re working up a sweat.

While there are really no hard-and-fast rules when it comes to measuring physical activity intensity, using some of the following scaled measurements might help you get a better sense of what moderate intensity means for you:

**Percentage of Maximum Heart Rate (MHR):** Maximum heart rate is an estimate of the potential rate when your heart's working at its hardest. Your MHR accounts for your age and current physical fitness and can be calculated by using a formula. Based on this measurement, moderate physical activity is defined as 50 to 70 percent of MHR. Further, vigorous physical activity is defined between 70 to 89 percent MHR, and "very vigorous" at 90 percent and above, where 100 percent is maximal exertion. Calculating moderate physical activity based on percentage of MHR does require that you slow down or stop to check your pulse. The easiest, low-tech way to do this is by using your index and middle finger to feel the pulse on your wrist or the carotid artery on the side of your neck. If, however, you?re into high-tech gadgets, there are a number of devices out there that can record your heart rate in real
time while you’re physically active.

**Metabolic Equivalents (METs):** This measure is determined by the amount of oxygen consumed?the more oxygen your body needs to complete an activity, the harder your body is working. One MET is defined as 3.5 milliliters (ml) of oxygen per kilogram (kg) of body weight per minute (as a point of reference: one kg = 2.2 pounds). Of course, it’s not exactly practical to measure how much oxygen your body is consuming during physical activity, so METs have been standardized to approximate your body’s metabolic rate: one MET is equivalent to your resting metabolic rate (or how much energy you expend at rest); two METs is any activity that requires twice that resting rate; three METs is three times your resting metabolic rate, and so on. Generally, moderately intense physical activity requires 3.0 to 6.0 METs (e.g., yoga, ballroom dancing, or playing Frisbee) while vigorous activities require more than 6.0 METS (e.g., step aerobics, cycling more than 10 miles per hour, or a competitive game of basketball). However, similar to your MHR, METs are approximations based on the population average, and therefore might vary based on factors like anatomy, age, or current level of physical fitness.

**Borg Rating of Perceived Exertion (RPE):** RPE is an individual-specific, subjective rating that’s based on how difficult or intense the physical activity feels for you. The more intense the activity, the more effort you’ll have to exert to maintain the activity at the same pace. Because it requires no counting or calculations (doesn’t depend on specific heart rate, distance, or time measures), it’s the most low-tech way to gauge the intensity of your physical activity. The Borg RPE uses a scale from 0 to 20 to measure the perceived level of difficulty of physical activity. Moderate intensity is around 11 to 14, and very intense activity is near 17 to 19 on the Borg scale. When considering how much effort you’re exerting, think about how quickly your heart is beating, how fast you’re breathing or how difficult it is to catch your breath, how much you’re sweating, or how tired your muscles feel. For example, I’m not exerting much energy compared to when I’m watching a movie in the dark,? might be a 1 on your Borg rating, whereas, ?the neighbor’s dog has been chasing me up a very large hill for several blocks and he is neither small nor friendly,? might be closer to a 17. The full Borg scale [2] can be referenced on the CDC website.

Confused, this might seem like a lot of information to think about while you’re also trying to get in adequate physical activity. Take heart—the good news is that you’re being proactive about incorporating physical activity into your life! In addition to the examples above, you may also try lying or sitting down in bed for a few minutes and pay close attention to how quickly your heart is beating or how fast you’re breathing. This is your body at a very low intensity activity. Then, go outside and try a full sprint for as long as you can, stopping when you’re too tired to continue at the same speed you started out at?again, consider how tired you feel, how hard your heart is beating, or how heavily you’re sweating. This is your body working at a very high intensity. Moderate intensity is somewhere in-between. Alternatively, consider using the "talk test": Using this subjective measure, you’ll be able to hold a conversation during moderately intense activities, but you may only be able to say a few words (if any) before you have to stop to take a breath during very intense activities.

As you continue to be more physically active, you may find that the same activity gets easier over time?how intensely you need to work to get your heart rate up to moderate intensity may change. You may consider speeding up or slowing down until you feel as if you’re exerting the desired level of energy. The Centers for Disease Control and Prevention (CDC) provides an extensive list of moderate and vigorous intensity activities for adults [3] you can reference when choosing activities you’d enjoy at a desired intensity. And, don’t forget that
duration matters, too? It’s recommended that adults get approximately 150 minutes of moderate physical activity or 75 minutes of vigorous activity [4] (or a combination of the two) every week. Before you jump in though, you may want to talk with your health care provider to make sure it’s safe for you to take on a new physical activity routine. Consulting with a trainer may also help you ease into this new lifestyle change to prevent any injuries.

With that being said, Confused, you know your body best and these are just suggestions for determining moderate intensity. Hopefully these methods will give you at least a few alternative options as you work towards your own fitness goals!

Alice!
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