

The Basics to Beginning an Exercise Routine: Cardiorespiratory Exercise



Getting Started

Cardiorespiratory exercise, also called cardio or aerobic exercise, is done to improve your cardiorespiratory fitness. This type of exercise is typically rhythmic, involving large muscle groups, and performed over a sustained period of time to elevate your heart rate. Engaging in cardio improves your body's ability to transport oxygen to your muscles and remove waste products during prolonged exercise. As you build up cardiorespiratory endurance, your muscles are better able to absorb oxygen! *Examples: brisk walking, running, cycling, dancing, swimming, stair climbing, rowing, etc.*

Cardio Prescription for Adults

It's recommended that you engage in at least 150 minutes of moderate intensity or 75 minutes of vigorous intensity cardiorespiratory exercise each week. It's suggested that you spread out your training sessions and do cardio exercise 3-5 days per week in 20-60-minute sessions. However, you may complete multiple sessions of at least 10 minutes at a time to achieve benefits. If you are starting an exercise routine for the first time or have a chronic condition, it is important to take a physical activity readiness questionnaire (PAR-Q) and/or speak with your doctor before beginning.

How Do I Know My Intensity?

There are three basic ways to measure your intensity:

1. Rating of Perceived Exertion Scale: Assess how you feel when you're exercising by using the Rating of Perceived Exertion (RPE) Scale found below: (**modified Borg Scale*)

RPE Scale	Category of Rating	Description
1	Very Light Activity	Hardly any exertion, but more than sleeping
2-3	Light Activity	Feels like you can maintain for hours
4-6	Moderate Activity	Breathing heavily, can hold short conversation, still somewhat comfortable but becoming more challenging
7-8	Vigorous Activity	Starting to get uncomfortable, short of breath, can speak a short sentence
9	Very Hard Activity	Very difficult to maintain exercise intensity, can barely breath and only speak a few words
10	Maximum Effort Activity	Feels almost impossible to keep going. Completely out of breath, unable to talk, and unable to maintain for more than a very short time

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2. **Talk Test:** Use the talk test to quickly assess your personal intensity rating. In general, if you are doing a moderate intensity activity you should be able to talk, but not sing, during the activity. If you are doing a vigorous intensity activity, you should not be able to say more than a few words without pausing to take a breath.
3. **Heart Rate Reserve Equation:** Measure your intensity by using the heart rate reserve (HRR) equation. Your HRR is the difference between your resting heart rate and maximum heart rate.
 - a) **Step 1 - How to find your resting and estimated maximum heart rate:**
 - Resting heart rate: first thing in the morning or after 5 minutes of rest, put your middle and index finger to your radial artery (palm up, where the base of the thumb meets your wrist). Once you find your pulse, count how many beats occur in 20 seconds (using a stopwatch or clock), then multiply this number by 3.
 - Estimated maximum heart rate: $220 - \text{Age} = \text{HRmax}$
 - b) **Step 2 - Review the HRR target heart rate training zones and select your desired intensity level:**
 - Intensity levels:
 - Moderate: $40 - <60\% \text{ HRR}$
 - Vigorous: $60 - <90\% \text{ HRR}$**The intensity levels stated above are different than those that you would use if only based upon your maximum heart rate.*
 - c) **Step 3 - Plug into the HRR Equation:**
 - Target HR = $[(\text{HRmax} - \text{HRrest}) \times \% \text{ intensity}] + \text{HRrest}$
 - Example: For this example, we will be using a 20-year-old female with a resting heart rate of 60 and HRmax of 200. She would like to know what her heart rate training range for moderate intensity activity is.
 - $[(200 - 60) \times .40] + 60 = 116 \text{ bpm}$
 - $[(200 - 60) \times .59] + 60 = 143 \text{ bpm}$
 - Moderate intensity target heart rate range = 116 - 144 bpm



How Do I Build a Training Routine?

Use FITT-VP to build your cardio routine:

- **F - Frequency:** How many days a week do I engage in this type of activity?
- **I - Intensity:** Light, moderate, or vigorous intensity?
- **T - Time:** How many minutes am I completing per session?
- **T - Type:** Does the type of exercise I am doing qualify as cardio?
- **V - Volume (product of frequency, intensity, and time):** Am I getting at least 150 minutes of moderate intensity, 75 minutes of vigorous intensity, or a combination of the two each week?
- **P - Progression:** Am I adjusting frequency, intensity, and/or time to progress the overall exercise volume as I become accustomed to my training routine?
 - Example: I currently complete 20 minutes of brisk walking 5 x a week = 100 minutes of moderate intensity cardio each week. I plan to progress to 30 minutes of brisk walking 5 x a week over the next month = 150 minutes of moderate intensity cardio each week. After one month, I plan to increase my intensity by jogging on 2 days.

Resources:

<http://www.shapesense.com/fitness-exercise/articles/cardiorespiratory-fitness.shtml>

[https://health.gov/paguidelines/second-](https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf#page=55)

[edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf#page=55](https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf#page=55)

[ACSM Guidelines for Exercise Testing and Prescription, Ninth Edition](#)