

Smart Cardiovascular Exercise Design

You finished a cardiovascular workout, exhausted, breathing hard at the end. Did you get a good workout? Do you work as hard during every workout? You may be not getting the results you want or need. Cardiovascular Exercise is important for a healthy heart and weight loss. But you need to be smart when performing or designing your cardiovascular program. First you need to pick an activity that you enjoy; otherwise you will not stick with your program. You need to look at four components of your workout which include intensity, frequency, duration, and volume. Check with your doctor before beginning exercise if you have any medical conditions or are pregnant.

Intensity is the level of exertion used during cardiovascular exercise most commonly measured by heart rate and perceived level of exertion. It is important to establish our heart rate training zones before you begin your program. **Target Heart Rate Zone** is the exercise level that should be reached and maintained for a prescribed period of time. **The Karvonen Formula** is one of most effective methods used to determine your target heart rate zone. It takes into consideration your present fitness level as well as your age. As we get older our maximum heart rate drops. The formula factors in your resting heart rate, therefore, you'll need to determine your resting heart rate by doing the following:

- When you wake up in the morning, before you get out of bed take your pulse for one minute. This is your resting heart rate.
- Take your resting heart rate for two - three mornings in a row and average the heart rates together. This will assure a good average heart rate number, heart rate is influenced by hours of sleep, stress, etc.
- Next take the Karvonen formula and figure your maximum heart rate MHR. $220 - \text{Age} = \text{Maximum Heart Rate}$ (women use $226 - \text{Age}$)
- Now put both numbers together as follows: $\text{Max Heart Rate} - \text{Rest. Heart Rate} \times \text{Intensity (\%)} + \text{Rest. Heart Rate} = \text{Training Heart Rate at that percentage}$. Figure a number for each limit of your zones: 50%-60%, 60%-70%, 70%-80%, 80%-90%, see the chart.
- For example If Bob is 50 years old, with a resting heart rate of 60. His Training heart rate zone from 50%-60% would be the following:

$$220 - 50 = 170 \text{ (Max Heart Rate, MHR)}$$

$$170 - 60 \text{ (RHR)} = 110$$

$$(110 \times .50) + 60 \text{ (RHR)} = 115 \text{ Training Heart Rate at 50\%}$$

$$(110 \times .60) + 60 \text{ (RHR)} = 126 \text{ Training Heart Rate at 60\%}$$

$$115 - 126 \text{ is Bob's Heart Rate Training Zone for 50-60\%}$$

If you are not using a heart rate monitor be sure to check your heart rate periodically through your workout to be sure you are in your training zone. If you're a beginner you normally would start between 50% to 60% of your maximum heart rate. An average fitness level individual's zone would be 60% - 70% we call this an aerobic workout. Over the course of time as your fitness level improves you can gradually increase your heart rate during exercise to 75% to 85% of your maximum heart, once to twice a week maximum. Always be aware of how you feel when you exercise this is called perceived rate of exertion (RPE) usually measured on a scale of 6-20. If you start feeling dizzy and lightheaded stop immediately and rest, if you're not breaking a sweat go ahead and pick up the pace a little. If not planned properly you could overwork yourself causing a decrease in physical fitness called overtraining.

The next component of your program is **frequency** or how many times a week you will be performing a cardio workout. You may start with three times a week and build to four - five times a week in the course of 8-12 weeks.

The third component is to **duration**, which is the amount of time you spend doing a cardio exercise during each workout. These will normally start at 10 to 20 minutes and build to 45 to 60 minutes over 8-12 weeks. For greater cardiovascular fitness and weight loss a longer workout of 90 minutes or more can be performed once a week usually on the weekend, this should only be added after you reach a higher fitness level. Every fourth week reduce your total time by 30% to insure rest and recovery. Week 5, resume with your 10% increase from the third week total. repeat in four week blocks until you reach your goal. The duration of each workout should contain a warm-up training zone exercise and cool down. The warm-up is very important to prepare the body for the strenuous exercise by increasing circulation to deliver more oxygen to the muscles and raise your body temperature. Following a workout is the most important time to add stretching to aid in circulation and prevent soreness.

The final component I want to touch on is **volume**. The terms of volume and duration are often confused. While duration refers to the time or distance of a given workout, volume is the combination of duration and frequency. In other words, volume is the total of all durations for a given period, such as a week or month. This is the number we need to look at when we set up a smart cardio program that will increase your overall fitness level. Normally volume is not increased from week to week by more than 10%.

To reach a higher fitness level and avoid the chance of overuse injuries try to perform at least two different types of cardiovascular exercise during a week's period. Remember to be patient with your program and try to be consistent from week to week. Enjoy your workout and make your heart stronger.

Trainer Tip: Generally depending on your fitness level, each week you should have two Zone 1 or 2 workouts, one Zone 1 workout (longer duration), and one Zone 3 workout (If approved by your physician). When you feel you want to reach the next level of fitness, one Zone 4 workout every two weeks is plenty.

(Put in a Chart Format) (Precision Heart Rate Training, Edmund R. Burke, pg 47)

ZONE 1: General Health - 50 – 60% of Maximum Heart Rate (MHR)

This zone is reached by walking easily, for at least 20 Minutes. Good zone for general health, Very comfortable. Perceived rate of exertion RPE (8-10) – Very light

ZONE 2: Weight Control – 60 – 70% of MHR

Jogging easy for at least 20 minutes will put you in this zone. Good for weight loss. RPE (11-12) – Fairly light, breathing becomes slightly noticeable

ZONE 3: Aerobic Fitness – 70 – 80% of MHR

This zone can be reached by moderate running pace, Good for burning fat and building a strong cardiovascular system. Also strengthens the heart, lungs and vascular system. RPE (13-15) – Somewhat hard, ability to talk

ZONE 4: Performance/ Anaerobic (Feel the Burn) – 80 – 90% of MHR

This zone is for high performance training and should be done under supervised personnel. Your muscles and heart rate are struggling to use oxygen at this level. RPE (16-17) – Hard to very hard, heavier breathing

ZONE 5: Competition: 90 – 100% of MHR

This zone is going all out and can only be maintained for a few minutes.
Fitness clients should never be in this zone. RPE (18-20) – Very Hard, heavy breathing

Tips for Better Workouts

- Make sure you have a good pair of specific shoes for your chosen activity.
- Be patient, start slowly. Doing too much too soon can lead to injuries and setbacks
- Stay hydrated during the day, before, during, and after your workout.
- Cross train, do different types of cardio exercise during a week, walking, jogging, biking, swimming, etc. Doing the same thing every workout will lead to boredom, plateaus, and possible injuries.
- Eat a light snack 1 ½-2 hours before you workout to keep your energy level up.
- Always stretch after your workout!
- Give yourself an extra recovery day if needed. Listen to your body if its sore or tired take it easy that day. The body only gets stronger if we include rest onto the program.

Week 1 Workout: Work at a pace you can maintain without feeling over taxed for 20 minutes. Your rate of perceived exertion or RPE is about a 5-6 on a 10 point scale. Keep in mind, each individual has a distinct rate of perceived exertion. What may be considered "hard" for one person may be "easy" for another. Listen to your body. If you are walking/running with a group of people be sure to have similar fitness levels. For the next 12 minutes, alternate you're RPE: pick up the pace so that your RPE is a 7-8, (you should be slightly breathless) for 2 minutes and follow with a slightly slower pace (RPE at 5-6) for 1 minute. Do these intervals 4 times. End with 10 or more minutes maintaining your original pace. Total time: 42 minutes. (3-5 days)

Weight Calculators

Ideal Male Weight Calculator

Ideal Female Weight Calculator

Calorie Intake Calculator

For Men

For Women

Physical Activity Calculators

Gym Activities

Outdoor, Home & Daily Living Activities

Sports & Training Activities

Occupational Activities

Heart Rate Training Calculation

Body Mass Index

<http://www.protonhealthcare.com/calculator/default.asp>

<http://www.topfitonline.com/calculators.htm>