



Achieving Maximum Oxygen Consumption By Effectively Working Out

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Experimental Question

What workout is the most effective in maximizing oxygen consumption?

Hypothesis

The group that only runs will have the highest oxygen consumption, making it the most effective workout.

Materials

- Oxygen Tracker
 - Product Name: Fingertip Pulse Oximeter Bluetooth Blood Oxygen Saturation Monitor and Pulse Rate Monitor for Apple and Android, with OLED Screen 2 X AAA Batteries and Lanyard
 - Brand/Manufacturer: HealthTree
 - Item Weight: 2.12 ounces
 - Product Dimensions: 2.36 x 2.76 x 1.97 inches
 - Color: Black
 - ASIN: B09MVYNYQ5
 - Country of origin: China
 - Item Model Number: JKS50B

Procedure

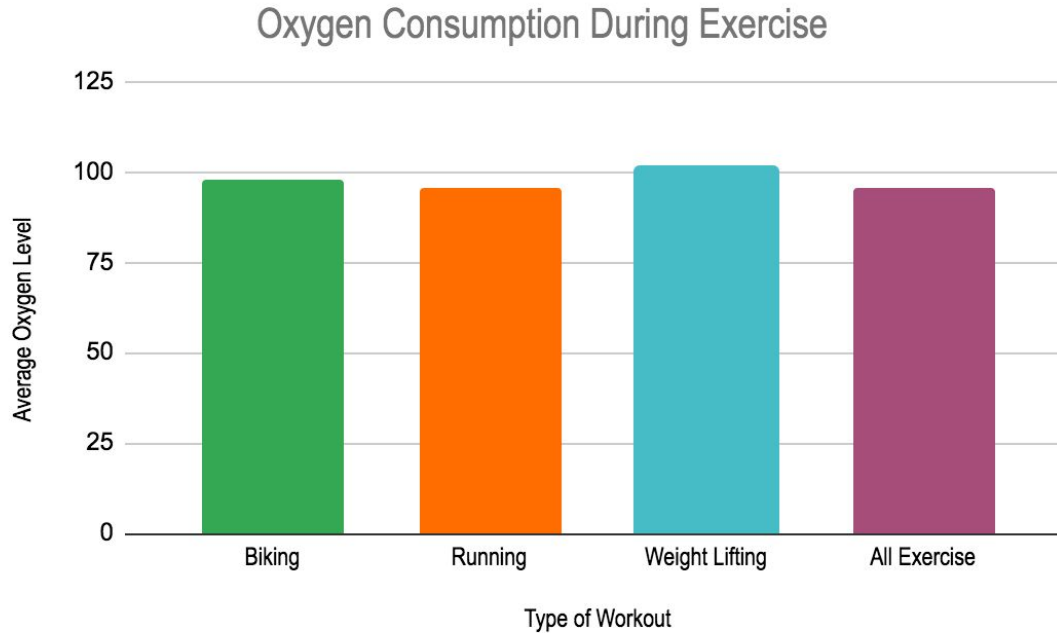
1. Running (5 participants)
 - Running at steady pace on the treadmill at 6 mph for 30 minutes with no incline
2. Biking (5 participants)
 - Cycling for at least 30 minutes at a steady pace around 15.5 mph speed at a 1% incline
3. Muscle Training/Lifting (5 participants)
 - Bench Press 35 lbs 10 reps x 4, Rest Time: 30 seconds
 - Shoulder Press 40 lbs 15 reps x 3, Rest Time: 30 seconds
 - Deadlift 50 lbs 20 reps x 2, Rest Time: 30 seconds
 - Bent-Knee Deadlift 40 lbs 15 reps x 4, Rest Time: 30 seconds
 - Half Squat 40 lbs 20 reps x 3, Rest Time 30 seconds
4. All types of exercise (5 participants)
 - Run at a steady pace on the treadmill at 5-6 mph for around 15 minutes with no incline
 - Bench Press 35 lbs 10 reps x 4, Rest Time: 30 seconds
 - Shoulder Press 40 lbs 15 reps x 3, Rest Time: 30 seconds
 - Instead of this workout, could play a sport (Basketball or Volleyball) for 30 minutes

Procedure

Steps:

1. There are 5 participants (Age Range: 17-50) in each of the 4 workout groups (Biking, running, muscle training, and all types of exercise)
2. For a duration of 3 weeks (Jan 2 - Jan 20), for 5 days a week, each participant will perform at least 30 minutes of their workout and measure their oxygen levels before and then measure their oxygen levels after
3. Collect all the data and analyze the results

Data



Average Oxygen Level:
Biking → 98
Running → 95.4
Weight Lifting → 101.4
All Exercise → 95.8

Analysis

The participants who were a part of the weight lifting group had the highest average level of oxygen consumption, with a level of 101.4%. The biking group had an average level of oxygen of 98%. The running group had an average level of oxygen of 95.4%. The all exercise group had an average level of oxygen of 95.8%. The group that had the average oxygen consumption that is effective and the most efficient is the biking group. The normal oxygen consumption for effective workouts is 95%-100% and 98%.

Summary

Exercise can help control or modify many of the risk factors for heart disease. People who exercise regularly are less likely to suffer a sudden heart attack or other life-threatening cardiac event. The best exercise has a positive effect on the heart and improves the skeletomuscular system. By conducting an experiment about the effect of oxygen consumption and heart rate on the human body, it will lead to gathering more data to help understand how to keep the heart stable and at a normal heart beat. Overall, the most effective workout is biking because it has an oxygen level of 98%.

Future Work

1. What exercising method helps with people who are at risk for heart problems, and how to effectively maintain a healthy lifestyle?
2. What part of the heart is greatly benefitted due to physical activity?