

Anaerobic Training

March 28, 2016

Week 1 / 4



Overview

What is anaerobic?

Resistance Training

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Health Benefits

Starting Up



Anaerobic

Merriam-Webster definition

living, active, occurring, or existing in the absence of free oxygen

But... as humans, we are never without oxygen.

Of course, there are exceptions (e.g. underwater)...

So what does anaerobic actually mean in the physiological sense?

Anaerobic Exercise- Physiology

Definition from the Dictionary of Sport and Exercise Science and Medicine by Churchill Livingstone

Exercise at an intensity exceeding aerobic capacity, which therefore draws a significant fraction of its energy from ANAEROBIC sources.

Sprints of any form, jumps and forceful throws (shotput, javelin) are examples.

In sustained anaerobic exercise, metabolic products accumulate rapidly and cause termination of exercise after 10-120s depending on intensity.

Also know as **supramaximal exercise**

Resistance Training

The most common form of anaerobic exercise individuals participate in is resistance training/weightlifting, which is focused on in this lecture.

Another form is HIIT – high intensity interval training– which is exercise performed for short durations at high intensity.



Types of Resistance Training

Free weights – a weight used in weightlifting that is not attached to an apparatus

Classic strength training tools such as dumbbells or barbells



Resistance Training

Weight machines – is an exercise **machine** used for **weight** training that uses gravity as the primary source of resistance and a combination of simple **machines** to convey that resistance to the person using the **machine**.



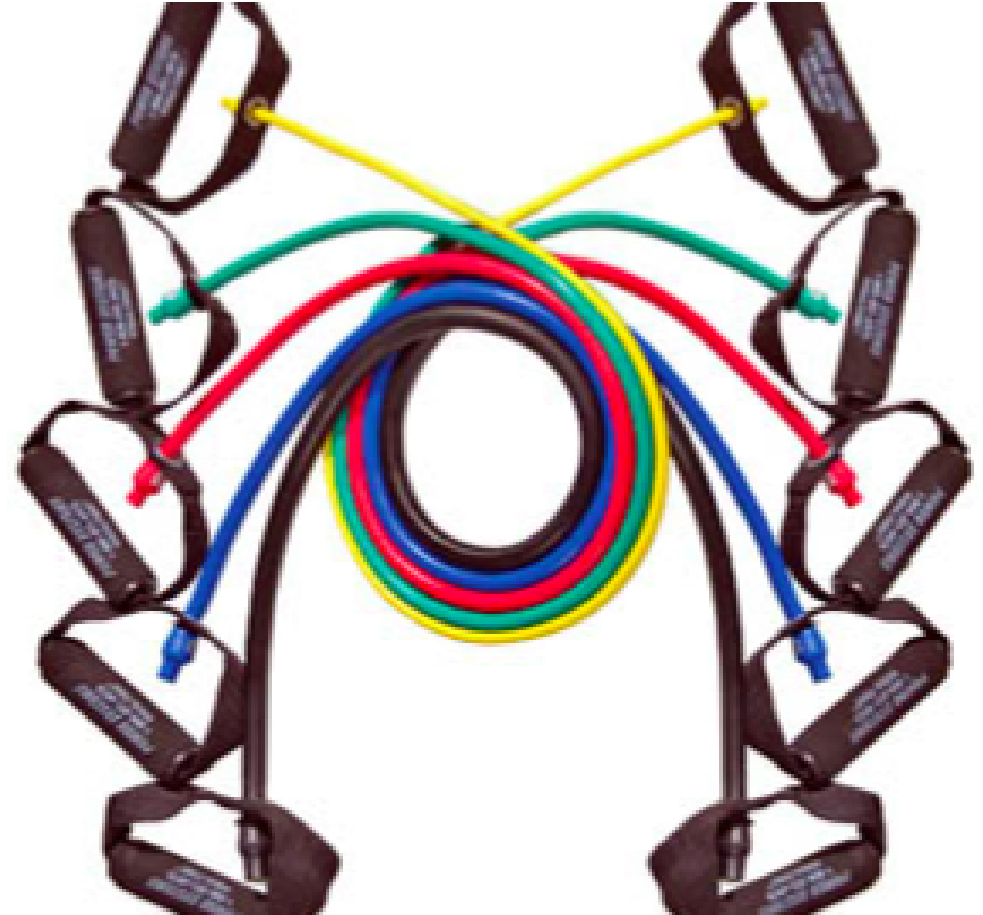
Resistance Training

Medicine balls – a large, heavy solid weighted ball thrown and caught for exercise



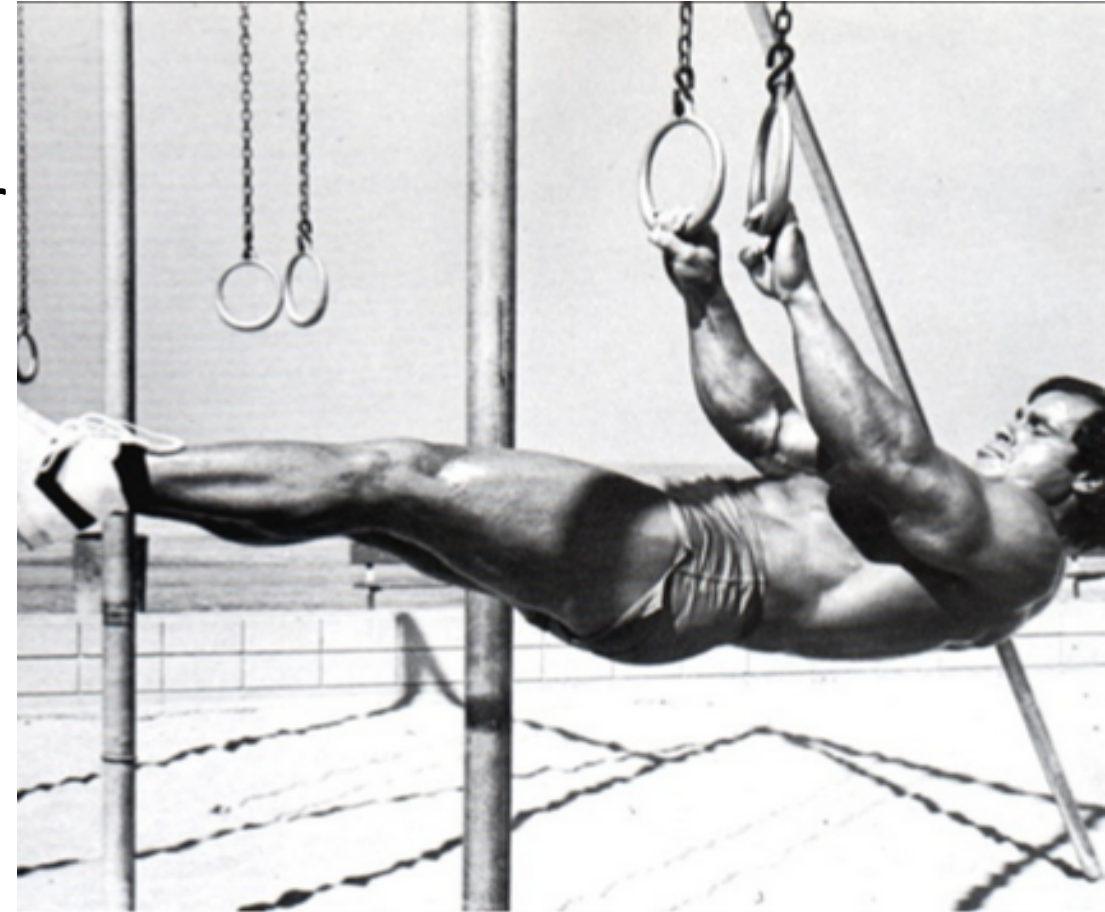
Resistance Training

Resistance bands – similar to giant rubber bands – these provide resistance when stretched. They are portable and can be adapted to most workouts. The bands provide continuous resistance throughout movement



Resistance Training

Your own body weight – can be used for squats, push-ups and chin-ups. Using your own body weight is convenient, especially when travelling or at work.





Resistance Training Health Benefits

Improved muscle strength and tone – to protect your joints from injury. It also helps you maintain flexibility and balance and helps you remain independent as you age

Weight management and increased muscle-to-fat ratio – as you gain muscle, your body burns more calories when at rest (increases resting metabolic rate)



Resistance Training Health Benefits

Greater stamina – as you grow stronger, you won't get tired as easily

Prevention or control of chronic conditions such as diabetes, heart disease, arthritis, back pain, depression and obesity

Pain management



Resistance Training Health Benefits

Improved mobility and balance

Improved posture

Decreased risk of injury

Increased bone density and strength and reduced risk of osteopenia and osteoporosis

Improved sense of wellbeing – resistance training may boost self-confidence, improve body image and mood

Enhanced performance of everyday tasks.



Resistance Training-Basic Principles

Exercise – a particular movement, for example a calf-raise, is designed to strengthen a particular muscle or group of muscles.

Repetitions or 'reps' – refer to the number of times you continuously repeat each exercise in a set.

Set – is a group of repetitions performed without resting, for example, two sets of squats by 15 reps would mean you do 15 squats then rest muscles before doing another 15 squats.



Resistance Training-Basic Principles

Rest – you need to rest between sets. Rest periods vary depending on the intensity of exercise being undertaken.

Variety – switching around your workout routine, such as regularly introducing new exercises, challenges your muscles and forces them to adapt and strengthen.

Recovery – muscle needs time to repair and adapt after a workout. A good rule of thumb is to rest the muscle group for at up to 48 hours before working the same muscle group again.

Resistance Training-Starting Up General Recommendations

It is important to pay attention to safety and good form to reduce the risk of injury. A registered exercise professional can help you develop a safe, effective program.

To start, a typical beginner's strength training program involves:

- eight to 10 exercises that work the major muscle groups of the body and are performed two to three times every week

- beginning with one set of each exercise, comprising as few as eight repetitions (reps), no more than twice a week.



Resistance Training-Starting Up

Your aim is to gradually increase to two to three sets for each exercise – comprising eight to 12 reps, every second or third day. Once you can comfortably do 12 reps of an exercise, you should look at progressing further.



Questionnaire

T Anaerobic means “without oxygen”.

F Long endurance events such a half marathon is a form of anaerobic training/exercise.

T Resistance training may increase bone density and reduce the risk of osteopenia or osteoporosis.

F When doing resistance exercise training, it is recommended that an individual does not rest to maximize performance outcomes.

F Only a well-seasoned “gym-goer” should participate in resistance training.



Questions?

