The effect of aerobic training on the physiological aspects of athletes.

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Abstract

In order for muscle development to be successful, it is important to understand the physiology of training. The physiology of training encompasses what the body undergoes before, during, and after a workout. What happens in our bodies when we lift weights? How do muscles react during exercise? How do muscles develop? Let's take a closer look at this topic.

(https://www.ericfavre.com/lifestyle/la-physiologie-de-lentrainement)

These functions enabling motor activity can be divided into three distinct areas:

• **The bioenergetic area:** this encompasses everything related to the supply, transport, and transformation of energy requirements for functioning, as well as the elimination of waste products.

The functions included in this area are respiratory, circulatory, digestive, and excretory functions.

• The biomechanical sector: this encompasses, on a mechanical level, everything related to human movement, both in terms of locomotion (motor function) and internal functioning (respiratory, circulatory, digestive, and excretory mechanics).

In our case, we will only consider the systems involved in motor activity: the skeletal, muscular, and articular systems.

• The bio-informational sector: this encompasses everything related to information (perception, transmission, and regulation) via the nervous and endocrine systems (responsible for hormone secretion).

(https://e-s-c.fr/physiologie.php)

Aerobic training is a low-intensity type of exercise that can be maintained for a long period of time. It is very effective for building endurance and strengthening your heart and lungs.

To train within your aerobic threshold, you need to keep your heart rate in zones 2 and 3, or approximately 60 to 80% of your maximum heart rate. The easiest way to achieve this is to use your Polar watch and use the target zones.

In this article, we will discuss the effects of aerobic training on the physiological aspects of athletes.

Principles of biology

Principle of dose and response:

• Exercise dose = stimulus of the training session.

• The exercise dose can be quantified using portable devices that measure:

o Intensity

o Distance

o Impact forces

• Response to effort = the athlete's result after a training session

(https://langs.physio-pedia.com/fr/principles-of-exercise-physiology-and-adaptation-fr/)

Keywords

Aerobic training- Physiological Aspects- Athletes.

1. Introduction

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1-Aerobic Exercise

Aerobic exercise is defined as physical activity that requires significant oxygen consumption to generate energy. These exercises last for relatively long periods of time and are often of moderate to low intensity. Examples of aerobic exercise include brisk walking, running, swimming, and cycling.

During these exercises, the body uses oxygen to burn carbohydrates and fats, converting them into energy that supports sustained physical activity. These exercises are beneficial for promoting cardiovascular health, improving respiratory capacity, and increasing the body's endurance.

(https://attamayuzph.com/difference-between-aerobic-and-anaerobic-exercise)

2 -ANAEROBIC EXERCISE:

In contrast, anaerobic training allowsyour body to produceenergywithverylittleoxygen. This occurswhenwe train at a high intensity for short bursts of exercise, pushing ourselves out of ourcomfort zone, making us feel "out of breath." Anaerobicexerciseis an excellent way to improveyour fitness whilealsodevelopingyouraerobiccapacity.

Combininganaerobic and aerobicexerciseis an excellent way to improveyour fitness.

To train withinyouranaerobicthreshold, youneed to keepyourheart rate in zones 4 and 5, or approximately 80-90% of your maximum heart rate.

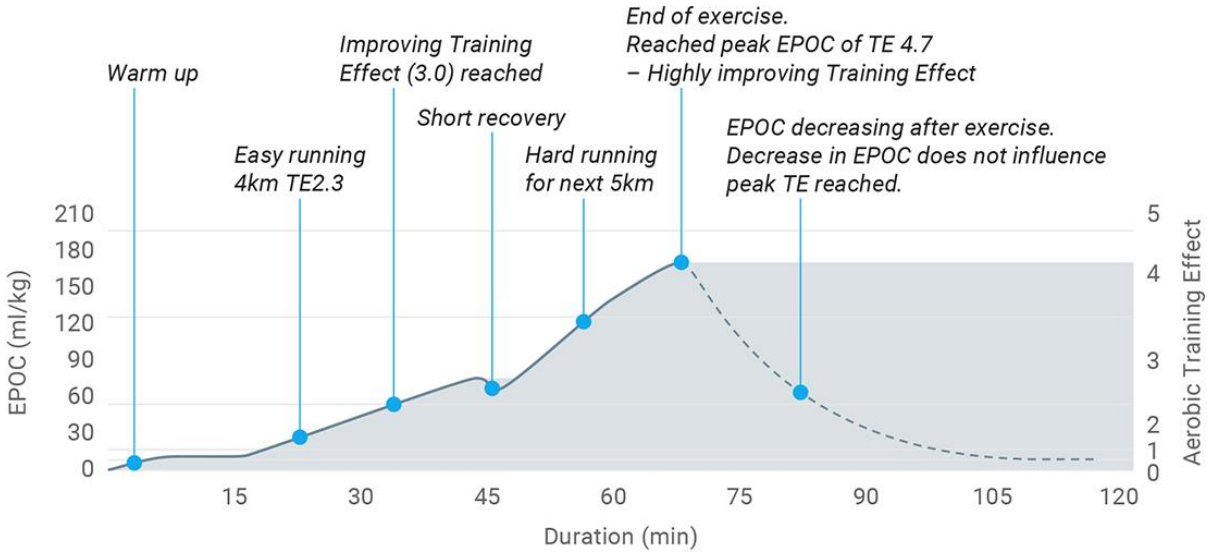
(https://www.polar.com/blog/en/aerobic-vs-anaerobic-training
First published on 10/12/2021 10:34, article updated on 16/12/2021)

3-What is the Training Loadfeature on my Garmin device?

To understand the meaning of training load, you must first understandwhatexcess post-exerciseoxygenconsumption (EPOC) is. Whenyouexercise, youdisruptyourbody's normal state, and this disruption requiresyour body to do extra work to getthings back to normal. In fact, the goal of training is to restore your body to normal, plus more, afterexercise.

Since the oxygenyour body uses isdirectlyrelated to the amount of energyit uses, the EPOC measurementisperfect for quantifying how muchyourbody's

normal state (homeostasis) isdisrupted by an exercise session.



(https://notyss.com/savoirsport)

4-Benefits of Aerobic Exercise:

Regular aerobic exercise has been shown to reduce the risk of developing many diseases, such as heart disease, stroke, type 2 diabetes, dementia, and even some cancers. Physical activity in general has also been shown to reduce the risk of depression.

(https://www.eufic.org/fr/une-vie-saine/article/la-difference-entre-lexercice-daerobie-et-danaerobie.)

5-How to combine aerobic and anaerobic training?

Interval training also offers the opportunity to combine aerobic and anaerobic training and push yourself to your limit during the intervals.

Caution is advised when combining aerobic and anaerobic training: Prolonged endurance sessions after strength training suppress muscle growth. It is therefore best to perform them before strength training.

On the other hand, a relaxed run or cycle after strength training promotes regeneration.

(https://www.ispo.com/fr/savoir-faire/entrainement-aerobie-conseils-pour-une-seance-dentrainement-dendurance-parfaite)

5. Conclusion

The physiologicalfunctions of the athlete are affected by aerobic training over time, as the athlete'svariousphysiologicalcapabilities and functionsdevelopaccording to scientificallycontrolled training programs and under the supervision of specialists in sports training.

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