Endurance study protocol

Research date 18.03.2019

Patient

Nickname	Age (years)	Sex	Body mass (kg)	Height (cm)
Virtual Athlete A	39	male	80	180

Avatar[1]

Nomination	Time of observation	Time of creation
Avatar by observations of 09.12.2018	09.12.2018 00:00	23.02.2019 19:25

[1]The physiological avatar (PhA) is an individualized mathematical model that is used to calculate the parameters of this study. All data calculated by PhA should be attributed to the time of the observations from which this PhA was created.

1. Anaerobic threshold[2]

Parameter	Value	Unit
Full power of the organism	702,41	W
Heart rate	157,21	beats/min
Blood lactate concentration	5,53	mmol/l
Oxygen consumption (VO2)	23,92	ml/min/kg
Oxygen demand	23,86	ml/min/kg

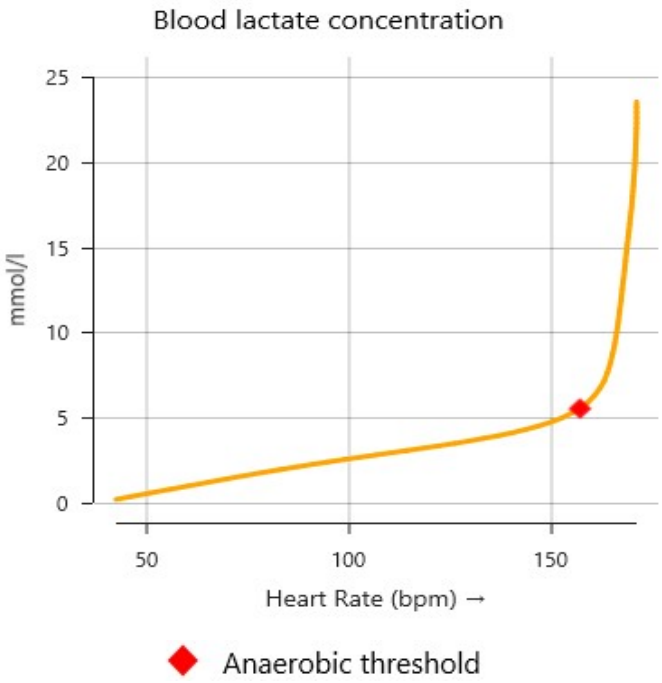
[2]The data on the parameters of the anaerobic threshold were obtained in the course of simulation modeling of a test with a step dosed physical load with a ten-minute duration of each step. Simulation was performed on the basis of the selected PhA.

2. Maximum oxygen consumption (VO2 max)[3]

Parameter	Value	Unit
Full power of the organism	1699,04	W
Heart rate	171,21	beats/min
Oxygen consumption (VO2)	54,91	ml/min/kg
Oxygen demand	57,71	ml/min/kg

[3]The data on the VO2 max parameters are probabilistic estimates of the average obtained during the operation of the statistical identification algorithm. The blood lactate value at the point of reaching VO2 max is indefinite and highly time dependent. Parameters point VO2 max is the most important characteristics of the peak short-term load.

3. Lactate profile[1]



[1]The individual lactate profile (ILP) is a curve expressing the dependence of the blood lactate level on the heart rate with a stepwise increasing exercise dosage of a certain duration. By the ILP curve, the anaerobic threshold is defined as the break point of the curve from which its non-linear growth begins.