

# Anthropometric Characteristics in Elite Duathletes

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## ABSTRACT

**Keywords:** Anthropometrics; Endurance Sports; Physiotherapy

## Mini Review

The development of athletes' performance depends on multiple factors such as the time of the season, the previous experience on sports, their trainings but also and specially their characteristics and more specifically the anthropometric characteristics [1]. These characteristics play an important role in the sports performance, since they can define the physical conditions of athletes and consequently knowledge in this area could improve the performance during trainings and also during competitions [1,2]. In this regard, anthropometric characteristics in endurance sports have been proven to be a meaningful factor in performance analysis, and more specifically in duathlon, these characteristics are demonstrated to influence the quality of trainings and competitions [3]. Duathlon is an endurance sport consisting on two disciplines: cycling and running. There are different distances according to the modality of duathlon, but usually athletes have to run first, then cycle and run again [4]. Therefore, the aim of this study is to analyze the anthropometric characteristics of elite Duathletes after a competition.

## Methods

22 subjects (50% females, age  $37.2 \pm 7.03$ ) were recruited for this study. They were all elite athletes participating in the ITU World

Triathlon Multisport Championship, developed in Pontevedra (Spain) during April and May 2019. All subjects were informed about the procedures before doing the measurements, and the principles of the Declaration of Helsinki (2013) were followed. An informed consent was signed by all the recruited participants. The anthropometric measurements obtained were height and weight, and then body mass index was calculated. Height was assessed by a measuring tape and weight was assessed with a weighbridge. All these measurements were taken before the competition time of athletes, with the same clothes and at the same hour in order to avoid diurnal variations. A descriptive analysis of the variables was carried out with the software SPSS (version 25.0, Chicago, IL, USA). All the variables are shown by the use of mean and standard deviation (SD).

## Results

22 elite duathletes were measured in this study in order to describe and analyze the following anthropometric characteristics: height, weight and body mass index. The descriptive data is detailed below in Table 1 by the use of mean and standard deviation and according to the gender of duathletes (Table 1).

**Table 1:** Anthropometric characteristics.

Variables	Male	Female	Total
Height	176.4 ± 1.27	162.67 ± 1.56	168,9 ± 8.44
Weight	67.7 ± 1.71	55.75 ± 2.02	61.18 ± 8.68
Body Mass Index	21.75 ± 0.48	21.02 ± 0.55	21.35 ± 1.75

## Discussion

Descriptive variables of a sample of 22 elite duathletes have been detailed in Table 1. This data were measured during the ITU World Triathlon Multisport Championship, developed in Pontevedra (Spain) during April and May 2019. Firstly, this data suggest that athletes have a good physical condition and they are able to do an adequate performance according to their discipline. Especially, the body mass index indicate that duathletes are between normal parameters, as expected for elite athletes, but more specifically they have less body mass index than in other sports, which is consistent with prior research and could be explained since running and cycling are both endurance sports with a high demand of energy, so the requirements of intensity are considerably higher than other disciplines [2,3]. On the other hand, it is important to consider these descriptive variables since endurance sports as duathlon suffer from a lot of changes each year, mainly caused by new achievements in training and competition tools, but also caused by the increase of the knowledge in this area [1]. Finally, both male and female are highly prepared for these kinds of competitions, with no differences between them in their performance [3].

## Conclusion

The anthropometric characteristics of elite duathletes suggest a high physical condition, which is consistent with their sport's demands.

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