
#### Abstract

Title: An observation of varying performances of triathletes based upon gender and age in the sport of Iron Distance Triathlons.

Objectives: The goal of the thesis is to compare the results of the swim leg in the Ironman World Championship. We will be working with thirteen age groups compiling of $18-80$ plus year old participants as well as both genders, male and female to gather our results. Our plan is to process results from the years 2005-2014, which is exactly 10 years or one decade.


Method: Our method for gathering the results was a multiple analysis that complied a breakdown of the swim portion of an Iron Distance Triathlon for all Age Groups during those specific years.

Results: After extensive research analyzing data, comparing data and studying past performances, we found that the participants times in the swim portion of Ironman Triathlon World Championships showed small significant differences over the past ten years. With minor deteriorations or improvements, swimming performances were seen at a consistent level for male and female age group 25-40. Men in the age group 18-54 showed improved outcomes over the women's same age group by $6-15 \%$. In age groups ranging from 55$80+$, swim times increased by $15 \%$. Overall the age groups with the most significant fluctuations in swim times was the men's 30-34 and women's 25-29.

Key words: competition, triathlon, Ironman, swimming

