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The Impact of the Time of Day on Swimming Speed

Introduction

Swimmers are constantly looking for ways to improve their speed, searching for opportunities to make their lap times mere hundredths of a second faster. The solution could be weight training, more intense intervals, better technique, and a slew of other options. However, some may not have considered the impact of what happens outside of the pool. Factors such as nutrition, sleep, and mental wellness all have an impact on how any person performs in their day-to-day life, and an athlete is no different. The time of day that a swimmer practices may also impact their speed. A Stanford study found that athletes performed the best in the afternoon (Erikson), citing many factors as the reason for this difference.

Specifics

This study seeks to observe the quantitative differences between a swimmer's lap times in the morning and the afternoon. Two sessions on two separate days will be conducted where a group member will swim 32x50 in 1:00 intervals (the swimmer swims down and back, 50 yards, and rests until the total interval reaches one minute) and each lap time is recorded. One session will be completed at 10:30 AM, the other at 4:30 PM. The variables of interest are the categorical variable of the time of day (morning or evening) and the quantitative variable of the swimmer's average time per lap in each data set (in seconds, μ). Once these values have been

recorded, researchers will conduct a theory-based test for the difference between the two means to determine if there is an association between the time of the day and one's swimming speed.

References



Erickson, Mandy. "Circadian Rhythms Affect Olympic Swim Performance, Study Finds." *Scope*, Stanford University, 14 Oct. 2020,
<https://scopeblog.stanford.edu/2020/10/15/circadian-rhythms-affect-olympic-swim-performance-study-finds/#:~:text=Their%20mathematical%20analysis%20of%20the,There%20are%20many%20possible%20factors.>