Effect of Scoliosis on a Swimmer's Performance

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Scoliosis is a common spinal deformity exhibiting high prevalence rates amongst athletes, specifically competitive swimmers. Generally, individuals diagnosed with scoliosis exhibit possible risk factors such as lung damage. As an aerobic activity, swimming relies on lung function utilizing large volumes of oxygen to perform well overall influencing heart rate. Competitive swimmers suffering from scoliosis may be at a disadvantage performance-wise in comparison to their healthy competitors as the negative lung effects of scoliosis may be detrimental. This study aimed to address the effect of scoliosis and its role in certain sports, specifically swimming by analyzing heart rate and speed as distance difficulty progressed between competitive swimmers with scoliosis and competitive swimmers without scoliosis. Data was collected quantitatively through an experimental research method. For each distance, participants underwent a total of three trials where initial and final heart rates, as well as their times, were collected. Two-Sample t-Tests were conducted whose p-values were analyzed and referenced to the 0.05 level of significance. The experiment revealed that scoliosis does impact lung function, but this impact in this experiment was shown to not have a significant effect on sports performance suggesting that scoliosis does not have a significant effect on the performance of competitive swimmers.

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