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Increased Injury Rate after COVID-19 Infection in Elite US Youth Soccer Players

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Describe role of Submitting/Presenting Trainee in this project (limit 150 words): Project ideation, data curation, data analysis, statistics, abstract writing.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background: COVID changed the sporting world over the past several years. As the pandemic winds down, it is important to study what effects the virus has on the athletes we serve. As we learn to live and participate in sport with the virus, it is inevitable that athletes will continue to be impacted by COVID. To the best of our knowledge, there is no data on the effects that COVID infection has on elite youth soccer athletes in the United States.

Objectives/Goal: Our purpose is to determine the risk of injury after a COVID infection in youth soccer athletes at a developmental academy.

Methods/Design: Soccer injuries for local developmental academy teams U12 (12 years and under)-U19 (19 years and under) were reviewed. Data from the Spring 2022 season was analyzed after an outbreak within our teams. Injury rate in athletes who were COVID positive was compared to injury rate in those same athletes during Fall 2021. Athletes were documented as COVID positive after a positive rapid test.

Results: Compared to their Fall 2021 season, COVID-infected athletes sustained significantly more injuries after infection in Spring 2022 (0.58±0.82 vs. 1.37±0.58, $p<0.001$). During the Spring 2022 season, there were 67 injuries (50%) and 33 athletes (24.6%) who tested positive for COVID. Twenty (60.6%) COVID positive athletes sustained an injury between February and July 2022. The odds ratio and relative risk for injury in COVID positive athletes during the Spring 2022 season was 3.3 (CI: 1.53-7.13) and 1.67 (CI: 1.23-2.26), respectively. COVID positive athletes on the U19 team had an injury rate of 12/1000 hours vs. 9.5/1000 hours in COVID negative athletes. For the U17 team, COVID positive athletes had an injury rate of 10.5/1000 hours compared to 5.7/1000 hours in COVID negative athletes. Other injury rates were similar. There were no significant differences in injury type or location between COVID positive and COVID negative athletes.

Conclusions: Among elite youth soccer athletes in the United States, injury rate increased significantly after COVID infection, resulting in over twice as many injuries. However, injury patterns between COVID positive and negative athletes were not significantly different. This data suggests that COVID infection increases the risk of injury and caution should be exercised in returning elite youth soccer athletes to play. Given the continuing burden of COVID, preventive strategies must be revised as current return to play processes were not successful in alleviating injuries in these athletes.