
Relationship Between Maximal Isometric Strength and 20-meter Sprint Times in Division I Men's Soccer Players

Exercise Science

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Purpose

The purpose of this study was to examine the relationship between maximal isometric strength and 20-meter sprint (20m) times in Division I men's soccer players.

Methods

Twenty-one athletes (age = 20.7 ± 1.2 years, height = 179.38 ± 6.09 cm, body mass = 76.4 ± 6.5 kg) performed isometric mid-thigh pulls on dual force platforms and 20m testing during a single testing session. Pearson product moment correlations were used to examine the relationship between the athletes' isometric peak force (IPF), allometrically scaled IPF (IPFa), and 20m.

Results

20m displayed trivial, negative relationships with IPF ($r = -0.046$, $p = 0.184$) and IPFa ($r = -0.184$, $p = 0.425$). Additionally, neither of these relationships were found to be statistically significant.

Conclusion

Despite the wealth of evidence substantiating the positive relationship between maximal strength and sprint performance, the results of this investigation do not support this notion. It is important to note, however, that the data included in this study was collected shortly after the athletes' final match of the competitive season. Consequently, accumulated neuromuscular fatigue may have attenuated this relationship. Future studies should aim to monitor these performance qualities over the course of a full competitive season to get a more comprehensive understanding of their influence on each other.

Link: <https://s3.us-east-2.amazonaws.com/lagrangecollegecitations/JacobsenSEACSM.pdf>