RESULTS

- Absolute Eccentric Isokinetic Ankle Strength & DF:PF Ratio
  - Absolute mean eccentric DF torque = 17.7 N*m ± 5.1, PF torque = 53.81 N*m ± 15.9.
  - PF was approximately 37% stronger than DF when accounting for all conditions (DF:PF = 0.37).
  - There was no difference in eccentric strength or DF:PF ratio between leg dominance (dominance determined by kicking preference), sex, or speed in DF or PF.
  - Except right PF eccentric torque for speed (30°/s vs. 60°/s) was significant (t[18] = 2.17, p = .04).

- Normalized Eccentric Ankle Strength & DF:PF Ratio
  - Data was normalized to body mass (N*m/kg).
  - Normalized mean eccentric torque for all conditions: DF = 0.48 N*m/kg ± 0.11, PF = 1.5 N*m/kg ± 0.50.
  - There was also no difference in normalized eccentric strength or DF:PF ratio between leg dominance, sex, or speed in DF or PF for all conditions.

DISCUSSION / CONCLUSIONS

- Eccentric PF may have been a more difficult task than DF, as there was greater variability seen in the PF torque values.
- Normalizing to body mass had minimal to no effect on the data.
- On average eccentric PF was 37% stronger than eccentric DF.
- Active DF stiffness was approximately 35% stiffer, which eccentrically engaged the PF muscles. In contrast, active PF stiffness eccentrically engaged the DF muscles.
- The current study focused on the dynamic contractile components of the joint with the goal to broaden the scientific understanding of the maximum functional capabilities of ankle joint in this young population, while adding to the normative data available.
- Broadening the current knowledge-base on joint characteristics is important for those clinicians and researchers focused on rehabilitation, injury prevention, and research, and may aid in our understanding of motor development.
- Additionally, this study aims to identify future research that will provide data for improved computational models and improved anthropomorphic test devices (ATDs).

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