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Stretching the limits of maximal voluntary eccentric force production
in vivo

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Note: This is an invited special issue article.

Review

Stretching the limits of maximal voluntary eccentric force production *in vivo*

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Running title: Eccentric force production *in vivo*

Highlights

- Maximum voluntary eccentric forces can exceed maximum isometric forces at the same muscle length by a factor of 1.2–1.4, provided that the experimental conditions result in active fascicle stretch during the eccentric contractions.
- Muscle fascicle length, velocity and stretch amplitude all interact to determine voluntary eccentric force capacity.
- Apparent neural inhibition during maximal voluntary eccentric contractions has not been confirmed under conditions where eccentric forces exceed isometric forces at identical muscle length.
- The reduction in voluntary eccentric force capacity relative to the eccentric forces obtained from electrically stimulated contractions and from isolated muscle preparations remains unclear.

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