Review of: "Modelling Skeletal Muscle Motor Unit Recruitment Contributions To Contractile Function: Part 2 — Total (aerobic + anaerobic) ATP Turnover"

Ralph Beneke[1]

1 Phillips-Universität Marburg, Germany

Potential competing interests: No potential competing interests to declare.

Modelling Skeletal Muscle Motor Unit Recruitment Contributions to Contractile Function: Part 2 - Total (aerobic + anaerobic) ATP Turnover

This research provides an interesting and elegant model, adding a theoretical quantitative approach to expand on the understanding of the energetics of skeletal muscle contractions. It addresses the issue of total ATP turnover (totATPto = aerobic + anaerobic) of different muscle fiber types and motor units under clearly defined conditions, which is a still existing gap in the current literature.

Abstract: ok

Introduction: ok
The statement: “It is logical that their data for ATP_{to} is larger than that of the muscle biopsy research studies, simply because the biopsy procedure samples …” appears too strong. It should be moderated to: “It is likely that their data for ATP_{to} …”

Problem and purpose: ok

Methods: ok and very clear

Results: ok
Figure 3 appears not ideal because differently scaled y-axes obscure the effects of distinct proportions of ST- and FT-fibers, which should be clear anyway based on Figure 2 and presented tables.

Discussion: ok and helpful to reflect on what was found and presented in the results section.

Figure 5: Why do you present just these selections of fractional motor unit recruitment (0.85 vs. 0.9) combined with different ratios of ST- to FT- fibers? How do other options compare to the experimental results shown on the left?

Limitations, ideas for future work, and conclusions appear reasonable.