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   Sommario/riassunto Successful endurance performance requires the integration of multiple physiological and psychological systems, working together to regulate exercise intensity in a way that will reduce time taken or increase work done. The systems that ultimately limit performance of the task are hotly contested, and may depend on a variety of factors including the type of task, the environment, external influences, training status of the individual and a host of psychological constructs. These factors can be studied in isolation, or inclusively as a whole-body or integrative system. A reductionist approach has traditionally been favoured, leading to a greater understanding and emphasis on muscle and cardiovascular physiology, but the role of the brain and how this integrates multiple systems is gaining momentum. However, these differing approaches may have led to false dichotomy, and now with better understanding of both fields, there is a need to bring these perspectives together. The divergent viewpoints of the limitations to human performance may have partly arisen because of the different exercise models studied. These can broadly be defined as open loop (where a fixed intensity is maintained until task disengagement), or closed loop (where a fixed distance is completed in the fastest time), which may involve whole-body or single-limb exercise. Closed loop exercise allows an analysis of how exercise intensity is self-regulated (i.e. pacing), and thus may better reflect the demands of competitive endurance performance. However, whilst this model can monitor

changes in pacing, this is often at the expense of detecting subtle differences in the measured physiological or psychological variables of interest. Open loop exercise solves this issue, but is limited by its more restrictive exercise model. Nonetheless, much can be learnt from both experimental approaches when these constraints are recognised. Indeed, both models appear equally effective in examining changes in performance, and so the researcher should select the exercise model which can most appropriately test the study hypothesis. Given that a multitude of both internal (e.g. muscle fatigue, perception of effort, dietary intervention, pain etc.) and external (e.g. opponents, crowd presence, course topography, extrinsic reward etc.) factors likely contribute to exercise regulation and endurance performance, it may be that both models are required to gain a comprehensive understanding. Consequently, this research topic seeks to bring together papers on endurance performance from a variety of paradigms and exercise models, with the overarching aim of comparing, examining and integrating their findings to better understand how exercise is regulated and how this may (or may not) limit performance.