However, the study design is not without its limitations, which may influence the interpretation of the results. One potential weakness is the relatively small sample size, which may limit the generalizability of the findings to broader athletic populations beyond competitive Gaelic football players (Ref-f807598). Additionally, the study's focus on short-term recovery outcomes may not fully capture the long-term effects of heat pre-conditioning on muscle function and recovery, thereby overlooking potential delayed benefits or setbacks. Another limitation is the reliance on self-reported measures of muscle soreness, which introduces the possibility of subjective bias and variability in participants' pain perception (Ref-f807598). Moreover, the absence of a detailed exploration into the mechanisms underlying the observed improvements in microvascular function suggests that further research is needed to elucidate the physiological pathways involved, providing a more comprehensive understanding of heat pre-conditioning's efficacy.