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Supplemental Materials

# Performance analysis in high-level virtual cycling: data from the 2023 Zwift® UCI Cycling E-Sports World Championships

## Supplemental Materials S1 - Race profile

Of the 87 women and 86 men taking part at race 1, 30 women and 30 men advanced to race 2. Of these, 10 women and 10 men advanced to the final phase and competed for victory in race 3 (elimination format illustrated in figure S1).

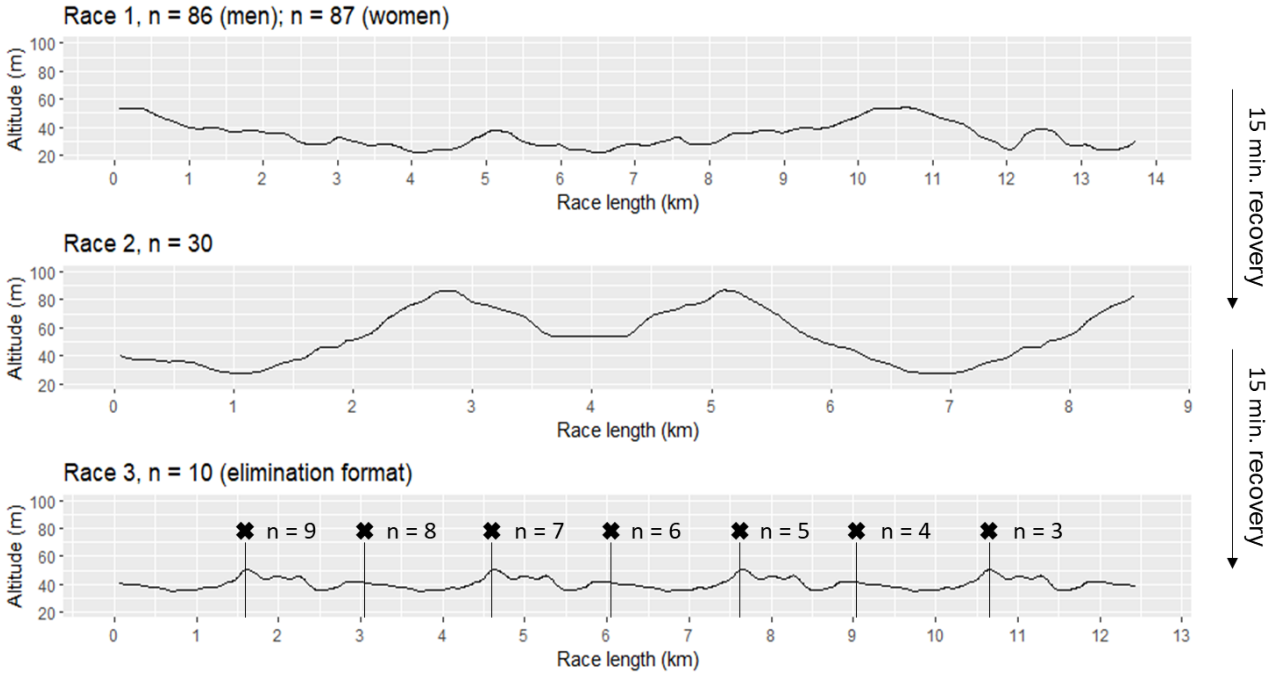



**Figure S1.** Profile of the three races of the UCI E-Sports World Championships. Races were separated by 15 min of recovery. In race 3, the elimination phase and the number of remaining cyclists for each segment of the competition are indicated.

**Supplemental Materials S2 -** ***Record power output over the 12 months preceding the World Championships***

Differences were observed in record power outputs only in race 1 for both men and women (Figure S2). For women, a significant group effect was observed for power relative to body weight in race 1 ($p = 0.012$, $\eta^2p = 0.334$). The qualified women had higher relative power output than those who were eliminated independent of effort duration. In men, significant group × effort duration was observed in absolute ($p < 0.001$, $\eta^2p = 0.274$) and relative power ($p < 0.001$, $\eta^2p = 0.289$). Advancing men exhibited greater absolute power in 30 s effort than eliminated ones. Power relative to body mass was greater for advancing than eliminated men during efforts of short durations (15 s, 30 s and 1 min. Figure S2). No group main effect or group × effort duration interaction was observed for race 2 for both men and women (Figure S2).

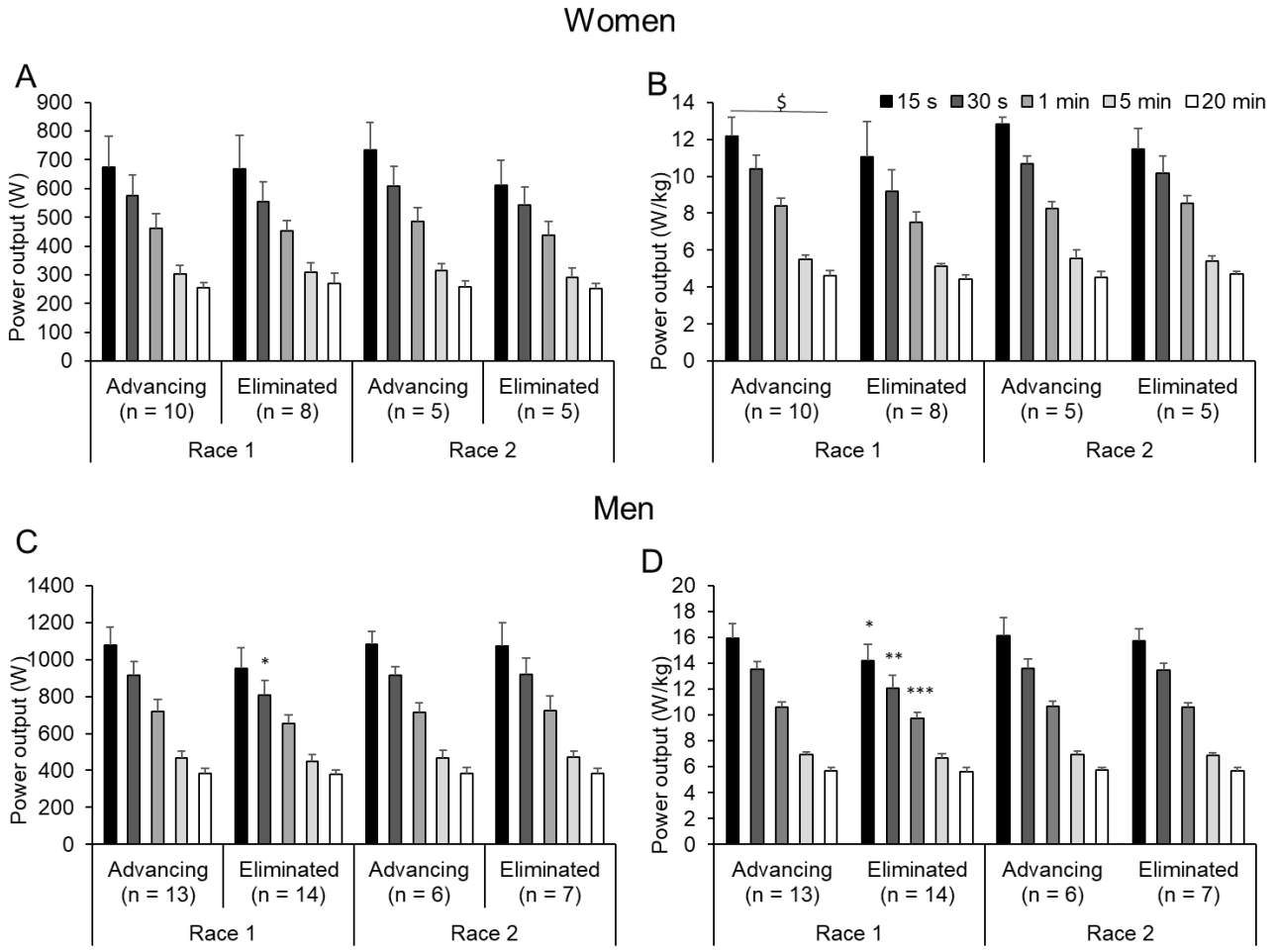



**Figure S2.** Comparison of records of power output over the past year for women (Absolute: A, relative: B) and men (Absolute: C, relative: D) cyclists who advanced or were eliminated after the first and second races. *= significant difference from qualified cyclists. *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$. $ = significant main group effect (advancing vs. eliminated). $ = $p < 0.05$.