



Regulatory proposals to support athlete mental health in the Race Across America

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Introduction

On the 13th of June 2023, a mix of professional and amateur riders will commence the 41st edition of the Race Across America (RAAM) [1]. Spanning the United States, this ultra-endurance cycling event encompasses approximately four thousand eight hundred kilometres in distance and over fifty-three thousand metres in elevation through diverse types of weather and terrain [2]. Unlike traditional competitive formats, such as the Grand Tours in elite-level road cycling, RAAM features a continuous racing clock without set stages [3], mandating strict finishing times of twelve days for solo riders and nine days for team-supported competitors [1]. Demographically, RAAM participants tend to be older, with age categories going up to eighty-four years [4]. Though approximately 80% of competitors are male, all genders compete simultaneously and/or as members of mixed teams [1, 4].

The event necessitates high levels of training, stamina, determination, and detailed strategies and logistics for nutrition and sleep [5, 6, 7]. Resultantly, since its introduction in 1982, RAAM has engendered a cultural “fascination” as “cycling’s hardest race” (e.g., [3, 8, 9]). Yet, correspondingly, RAAM’s distinctive parameters and intra-race conditions could have associated harms for the mental health of participants [10, 11]. To mitigate against these, we outline potential regulatory policies to help safeguard the wellbeing of competitors. In doing so, we are not seeking to detract from RAAM’s appeal, but rather to support the longer-term sustainability of ultra-endurance cycling and promote the importance of mental health amongst participants.

Athlete wellbeing in the Race Across America

The physical challenges of RAAM are well-documented in general media and academic research; for example, nutrition and hydration needs are of critical importance for successful race completion [5], particularly given RAAM’s high-altitude environments [12]. However, concurrently, RAAM’s stringent intra-race demands raise concerns for athlete mental health, especially in relation to sleep deprivation [10]. Ultra-endurance competitions are largely underexamined in sports psychiatry literature [11], yet phenomenological insights from RAAM reveal inherent risk factors. In this regard, sleep deprivation is considered to be a key component of the race and has assumed a sociocultural resonance amongst participants (e.g., [3, 8, 9]), as epitomised by an athlete’s account: “with RAAM [...] [y]ou’re sleep deprived and disoriented” [13].

Likewise, low sleep duration has been identified as a performance determinant, as per rider interviews: “You plan around it, perhaps deciding to not sleep one night to close down a gap” [8]. Analogously, support teams and crew may experience limited sleep [14]. Taken together, this has led some to question whether RAAM is a genuine cycling race or a sleep deprivation test [15]. For us, these factors could theoretically heighten the possibility of self-medication to alleviate performance impediments like drowsiness, although random drug tests informed by the World Anti-Doping Code are in operation at RAAM [16].

As scientific evidence underlines, sleep deprivation can have harmful psychological and psychiatric implications,

including instances of suicidality [17] and hallucinations [18]; in some circumstances, the latter can progress to psychosis [19]. Notably, RAAM athletes frequently report hallucinations (e.g., [3, 8]) and adverse experiences, with one racer conceding “for me, the serious sleep deprivation issues lasted just a few hours. For my partner, it was significantly longer” [20]. Cyclists have also illustrated other detrimental outcomes, highlighting “cruel states of mind due to sleep deprivation” [3], “paranoia” [21], and comorbid somatic problems (“I had pushed sleep deprivation too far, and was dealing with fluid retention in my legs” [22]). Nonetheless, it is conceivable that these negative aspects may be masked by euphoric states and improved mood due to the antidepressant effects of sleep deprivation [23], meaning their incidence is underreported.

Sleep deprivation can aggravate existing mood issues, such as anger, depression, and anxiety [24] or contribute to the onset of similar disturbances [25]. This is problematic since there may be an extensive prevalence of psychopathological symptoms in the ultra-endurance community [11], and RAAM riders might lack available stress management techniques – particularly solo athletes without team support. Further, sleep deprivation has associations with impaired executive functioning, elevated risk-taking, and emotional reactivity [26]. Thus, in a strenuous intra-race environment, competitor safety could be jeopardised through increased accident risks from disrupted sleep. Again, RAAM participants have described these dangers: “I opened my eyes looking at a guardrail. If I had slept another two seconds, I would have catapulted over a 1,000-foot drop” [27].

Regulatory recommendations

RAAM’s organisational structure differs from that of cycling events covering similar distances. The race is not managed by a sporting federation like the Union Cycliste Internationale (UCI) and participant numbers and media coverage are lower than in UCI races [8, 28]. In the authors’ opinion, this means that RAAM has hitherto attracted insufficient attention in sports psychiatry research and lacks regulatory proposals that have been developed in other sporting domains (e.g., [29]). However, RAAM’s administrators have acknowledged the need for a “formal oversight and organizing body for the sport” that “promotes a reasonable set of standards and works to raise the quality of races” [3].

Consequently, RAAM could benefit from evidence-based interventions and best practices to uphold the mental wellbeing of competitors and support teams. Pre-race, educational resources and self-care recommendations could be disseminated to riders and crew, highlighting potential

short- and long-term risks and appropriate help-seeking pathways. These could be embedded in RAAM documentation (see [30]). Former competitors could be encouraged to discuss their experiences and accentuate the importance of athlete wellbeing; previously, cyclists have competed in RAAM to raise mental health awareness (e.g., [31]), and in other sports, athletes have been influential in shaping positive discourse [32]. Moreover, on-hand mental health support during RAAM could help safeguard riders. This could include access to mental health professionals, such as psychiatrists, who can assist athletes and crew in managing stressors, anxiety, and associated issues through regular check-ins and mental state examinations. Where applicable, these experts could also provide emergency psychiatric care. Equally, team-based riders could incorporate qualified mental health specialists into these units, which has proven useful for athletes across different sporting events (e.g., [33]).

At the close of RAAM, organisers could arrange debriefing sessions for riders and share information about mental health care for improved post-race transitions. Similarly, collating competitor insights and evaluating mental health strategies can refine future approaches. For instance, given current advances in psychiatric literature underlining the harmful effects of sleep deprivation, it may be beneficial to consider initiating broader conversations around obligatory race stages or minimum sleep durations. Although efforts were made to introduce the so-called Solo Enduro category at RAAM in 2006, which mandated forty hours of sleep for each participant, it lacked wider popularity and was ultimately cancelled [34]. To the authors’ knowledge, reviving this format has not recently been proposed within the RAAM community but the notion of sleep requirements has been debated in other ultra-endurance cycling events (e.g., [35]). Such procedures could uphold competitor safety, allowing riders to maintain consistent rest breaks whilst still preserving RAAM’s competitive nature; this could create a more level playing field, opening RAAM up to a larger range of contenders by emphasising a cyclist’s athletic ability rather than their capacity to forego sleep. Here, modern devices, like the Oura Ring and other wearable technologies, can efficiently monitor sleep, providing reliable mechanisms to enforce these stipulations [36].

Nevertheless, we recognise that elongating RAAM through sleep breaks or facilitating on-hand mental health support may have concomitant financial implications, which need to be carefully appraised. Likewise, there could be other obstacles given RAAM’s sociocultural reputation [34] and the wider persistence of mental health stigma within sporting contexts [37]. To that end, alongside community engagement, detailed scholarly research into the mental health effects of ultra-endurance cycling races is

needed to inform relevant appropriate regulatory schemes, especially since findings remain limited within sports psychiatry [10, 11].

Concluding remarks

RAAM's intra-race conditions can encourage extreme sleep deprivation, which could have substantial psychological and psychiatric implications. To address these concerns, organisers could better promote mental health awareness, whilst considering more proactive interventions like on-hand mental health professionals or mandated sleep breaks. Although financial constraints and entrenched sociocultural attitudes might present barriers to implementation, we believe that as one of the most prestigious ultra-endurance cycling events, RAAM can set an example for other races by championing athlete wellbeing through evidence-based actions.

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