

E-Racing and E-Science

The COVID-19 pandemic of 2020 saw the sporting world initially grind to a halt. However, some sports adapted, restarted, and even exploded in both popularity and innovation. In the sport of cycling, e-racing has steadily increased in popularity over the past 6 years, but that growth has accelerated exponentially since the beginning of lockdown, with both professionals and recreational cyclists forced to embrace indoor riding despite improving weather through the northern spring and summer. Beyond just the raw number of riders, virtual racing became a mainstream reality during the lockdown. In April 2020, the Belgian classic Tour of Flanders was the first to pivot to an online race, followed by the Tour de France sponsoring a “Tour for All” stage race the next month in May.

What was impressive and a great sign for the future was e-racing taking bike racing in new directions and leading to continuing innovation. Without the ossification and shackles from decades of tradition, e-racing has been able to innovate and grow with its own ideas. For example, e-racing has led the charge for equality, with equal airtime, scheduling priority, and prize money for both men and women. Then in December 2020, the previously unthinkable happened—the Union Cycliste Internationale (UCI) world governing body sanctioned an official e-racing World Championships, complete with rainbow jerseys for the winners. An idea that was roundly mocked when it was suggested prepandemic became reality, and what was remarkable was how nobody really batted an eye once it happened. Now there are cycling teams built solely to race online, including a new squad sponsored by the World Tour Movistar team with equal squad size and support for both sexes.

In parallel with sporting events, exercise science has largely been shuttered by COVID-19. As of this writing, I have been out of my laboratory for a full year except for 2 weeks of limited capacity in December 2020. Unlike many other fields of research, exercise science requires close interaction between researcher and participant, along with exercise posing increased aerosol generation and infection risk. This lack of research activity is hugely detrimental to the progress of our trainees in a way that should never be underestimated. It is also exacerbating inequalities already inherent in the academic enterprise, such as women and those with young families or who are caregivers.

But just as cycling has transformed by embracing e-racing, there is also a potential for innovation and reinvention in how we do sport science now and beyond the pandemic. First and foremost, there has been a general awakening to how easy it really is for scientists to communicate and share information. Rather than in-person conferences where it is a constant struggle to absorb the

latest science coming at you in a firehose fashion over a compressed few days, and where the talks disappear the moment they end, a new world of online seminars has proliferated. Since April 2020, I have co-organized an environmental physiology series and attended numerous others on topics where I would not normally attend in person. This format is a much more accessible way to disseminate knowledge to a much larger audience, as it does not rely on the expense and time commitment for physical attendance and is usually available for free online viewing afterward. This democratizes scientific exchange and increases opportunities for collaboration. I believe that our field is waking up to the ease of sharing our ideas and knowledge mobilization beyond traditional publishing or direct work with athletes.

Sometimes, it can be good to get off the treadmill of constant data collection and analysis. Without laboratory access and new data, the pandemic has forced many of us to go back through the literature and reexamine our ideas and biases. While we may roll our eyes at the numerous review articles or opinion pieces being published, it is also an opportunity to truly reexamine why we think what we think or do what we do.

Scientists can also use the boom in online technology to their advantage, enabling virtual data collection in a world without physical laboratory or athlete access. Rather than in-person testing on a limited sample size, in some ways, the entire world can be crowd-sourced as a study population. I recently collaborated with 100 other sport scientists to develop an online survey on knowledge and attitudes toward restricted training access during the first stages of lockdown, recruiting over 12,000 participants in 142 countries. The prevalence of virtual riding and technology like smart trainers make cyclists and triathletes an ideal population for online studies, where participants all around the world can be recruited and perform interventions or training while being monitored remotely. While care must be taken to ensure quality data, the potential for recruiting much larger studies can continue even postpandemic.

Science and sports have always enjoyed a symbiotic relationship, with some of our best ideas coming from the athletes we work with. As with cycling growing through e-racing, sport scientists should embrace the innovative ideas and tools we’ve learned over the course of the pandemic and keep pushing our field toward new directions and growth.

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