When worlds collide—elite sport, doping, and scientific research

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OKAY, A BIT DRAMATIC, but all of a sudden the Journal of Applied Physiology has been dragged into the world of performance enhancement in professional cycling. Although published in 2005, Ed Coyle’s paper (1) on the physiology of a famous cyclist is back in the spotlight given that cyclist’s recent public admission of many years of doping, possibly during the time of Ed’s study. Were the data in that 2005 paper possibly affected by any-at-the-time potential possible doping?

Quite separately, Siebenmann et al. (6) recently published a paper in the Journal of Applied Physiology involving elite cyclists paired with another paper by Robach et al. (4) in a different journal, with both showing data from the same study and cyclists. Their experiments examined the effects of hypoxic exposure on cycling performance and also involved blood removal and reinfusion. The two papers prompted a letter to the Editor by Schumacher et al. (5) that appears in this issue and that is accompanied by a response from the authors (3). The essence of the letter was ethical considerations, especially the ethics of studying athletes—exceptional enough to be subject to WADA (World Anti-Doping Agency) oversight—using manipulations of blood volume and hemoglobin concentration that would be banned in competition. Was the use of such interventions—even in a research study designed not to afford the athletes a competitive edge at its completion—compromising the subjects’ eligibility to compete? Were the subjects made aware of such a risk?

We sent the Siebenmann et al. study, together with the Schumacher letter and author response, to WADA for their comment. Of course, we first obtained permission from the authors of the letters to forward them to WADA, and when Director General David Howman of WADA replied to us, we obtained permission to publish his comments in the Journal.

So now you will see a collection of short articles in this issue dealing with it all:

• An editorial by Ed Coyle reevaluating the outcomes of his 2005 paper (1);
• The letter by Schumacher et al. (5) raising concerns about the Siebenmann et al. (6) and Robach et al. (4) papers;
• The response by Lundby and Robach (3) to the Schumacher et al. letter;
• An official, WADA analysis (verbatim) (2) of the issues raised by Schumacher et al.; and
• This umbrella editorial (which, incidentally, may be the first editorial in this Journal discussing other editorials/letters rather than a specific paper).

I thought this collection deserved an editorial comment, because it forces one to think about the responsibilities of the Journal in unusual circumstances such as this. First, this is not about ethical violations by any of the authors. The correspondence in this collection reveals the following:

• Neither Coyle nor Siebenmann et al. and Robach et al. appear to have breached any rules in terms of informed consent, including, for the latter authors, disclosing the eligibility risks of violating WADA rules by taking part in blood manipulations.
• Coyle states he had no knowledge of doping by his subject until this year’s public admission. Thus whether the subject was doping during the study or not is undetermined.
• Neither set of authors appears to have violated other ethical regulations—there are no suspicions now, nor were there at the time of publication, of data/figure manipulations, IRB approval transgressions, plagiarism, and so forth that constitute the bulk of ethical problems seen by journals.

The Journal Editor asked Dr. Coyle to write about how his 2005 paper should be interpreted in light of recent admissions to doping, and he correctly points out that there is simply no way to know how much—if any—of the subject’s performances at the time could be attributed to doping. We have no knowledge of whether doping was happening at the time, or if so, with what data/procedures, nor at what dose(s), nor when in relation to Coyle’s testing of the subject. And even if we had had that information, we have no knowledge of the particular subject’s responsiveness to any of the potential doping agents/procedures.

There are too many variables and unknowns. Should Coyle’s paper therefore be retracted or withdrawn? We do not think so; the data are the data, free of author-related ethical concerns. His editorial seems to be the best solution, especially because there can be no definitive answer. How much of the subject’s performance was attributable to his genetics and training compared with how much was contributed by possible doping may never be known but that does not constitute grounds for retraction or withdrawal.

The Siebenmann et al./Robach et al. papers raise quite different concerns of course. It does appear that subjects were informed not just about the biological risks of taking part in the study but also about the eligibility risks resulting from blood manipulation, as the response to the Letter to the Editor states. I asked WADA to comment on the Schumacher et al./Lundby and Robach et al. discussion that followed publication of the Siebenmann et al. and Robach et al. papers and that appears in this issue. The WADA 10-point response is very clear, especially point 8, which states their position in no uncertain manner:

“8. WADA considers that conducting research studies with elite athletes should not expose them to prohibited substances and methods unless specific dispositions are made such as retiring the athletes as active athletes for a considerable period.”

Thus, although the Journal considers that banned substances/procedures research in elite athletes is as legitimate a scientific area as any other, investigators will need to be very careful before exposing their elite athlete subjects to risks of sanction by their governing bodies. Hopefully investigators will read this editorial, and as a result, 1) ask in advance for advice from appropriate authorities to ensure that their subjects are protected, and most importantly, 2) show their subjects the WADA letter in this issue so they can give truly informed consent.

What are our editorial responsibilities then in circumstances like this? They are:

• To provide a forum for open discussion;
To ensure there are no ethical transgressions in any articles published; and
To inform our readers of the issues, including the positions of relevant authorities (here, WADA), to help prevent future, similar situations.

We are doing this because we care. We care about providing you, our readers, with physiological science of the highest quality and we care about providing you articles meeting the highest ethical standards.

REFERENCES


