

DOI: 10.1002/cmdc.200700360

Sport Doping—A Double Blind Proposal

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A recent article by a serious scholar of sports^[1] as well as an editorial in *Nature*^[2] have argued for the acceptance or even legalization in sports of performance-enhancing drugs, which I have named “lusuceuticals” (after the Latin word *lusus* for sport).^[3] Among the responses I received to my firmly expressed unease about the slippery slope on which sports will embark, as the legalization of “lusuceuticals” will cause commercially and societally sanctioned research for performance-enhancing drugs (including even possible genetic manipulations) to flourish, the following was typical of the opposition: *Get over it and lighten up. Steroids are the tip of the iceberg. I would guess in 10 years there will not be a world-class professional athlete not using some drug. And the fans will love the new records.* Such a critique has prompted me to assume (temporarily!) the role of devil’s advocate for the legalization of lusuceuticals by making a concrete and scientifically sound proposal to formally implement such sport doping.

Sport fans may well love new records—apparently, even doped ones—but in fairness to them, why not demonstrate openly who will then be responsible for these records and should be acknowledged accordingly? Formula 1 racing is an example that seems to function: both the car manufacturer and the driver are recognized, and the technical modifications in such cars are carefully circumscribed. For instance, no engine modifications can be made so as not to create too great a disadvantage for the smaller teams relative to the giant car manufacturers; even the temperature of the gasoline is controlled, as excessively cold fuel offers a horsepower advantage. Moreover, safety improvements as well as greener emission and fuel consump-

tion are now encouraged. To carry the analogy to its logical extreme, in ordinary sports, the lusuceutical would thus represent the car and the athlete the driver. Or to reverse the argument: if Formula 1 races were just a test of the driver’s skill, then everyone would have to compete in identical cars.

Let us pick for the first demonstration one of the Olympics’ most glamorous sports, the 100-meter sprint. Since the first officially recorded 10.6-second run in 1912 by the American athlete Don Lippincott, it took nearly 50 years before the magic 10.0-second hurdle was reached in 1960 by the German sprinter Armin Hari. With the introduction of electronic timing in 1968, records were expressed to the second decimal point; it took another 40 years before the magic 10.00-second mark was gradually reduced by a mere 0.26 seconds in 2007 by the Jamaican Asafa Powell, whose record of 9.74 seconds has not yet been officially acknowledged because of alleged steroid abuse. Still, it is safe to say that 9.7 seconds for men and 10.49 seconds for women (reached in 1988 by the American runner Florence Griffith-Joyner, whose premature death has been attributed to steroid doping) can be considered the “natural” limit in this shortest but also most famous Olympic sprinting event.

I propose that we conduct an experiment. Let us search for 6–10 male volunteers, who have consistently exceeded the 10.2-second barrier in officially recognized 100-meter races, and ask them to become the first serious human guinea pigs to establish the rules for approved lusuceutical competitions. This group of volunteers will be asked to reside for a minimum of 12 weeks under continuous supervision in a training camp, where all consume the identical diet. After a rest period of 1 week, while undergoing extensive medical forensic tests, they will compete every second

day of the following week in a 100-meter race, with each runner’s average during these four races then becoming his official starting value. At this point, as in a typical double blind clinical study, half the athletes will receive the new lusuceutical, and the others, a placebo. They will then participate for the next eight weeks in competitive 100-meter races every two days *without* any additional training while remaining in their training camp and finally continuing to carry out such races for the last two weeks without any drug administration. At the end of this experiment, it will be clear which sprinter shows the greatest improvement and—once the code is broken—whether he belonged to the “doped” class in the absence of all the usual variables of prior training, wind force and direction, humidity, temperature, elevation of the track, quality of the shoes, and any other factors that usually need to be considered in comparing one record with another achieved in different localities all over the world.

In spite of the small number of guinea pigs and the relatively short period of time chosen for this experiment, if such a preliminary study unambiguously demonstrates that the group taking the experimental drug performed better than the placebo group, one would also acquire additional provisional information on the speed with which such lusuceuticals start to demonstrate their effectiveness as well as the speed with which the effect declines.

I would equate this experiment to a typical “phase-I” clinical trial of a drug, without, however, worrying about the safety aspects. Why? Because athletes indulging in current illegal doping are only interested in efficacy and have, in any event, no recourse to toxicity data or liability suits. Hence, let them sign an informed consent and legal disclaimer document before embarking on this first scientifically controlled and medically su-

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pervised short-term experiment of how legally sanctioned sport doping might be standardized.

The next step, of course, would be the initiation of larger studies—for longer periods and examining other sports (e.g. weight lifting)—that would permit working out a firmer set of rules before free-for-all lusuaceutical sport competitions are sanctioned. While such seriously designed double blind studies would be expensive, the amounts would be peanuts compared with the cost of standard

clinical trials, and in any event, would be funded by the sport organizations that now spend untold millions on spectator sports. If, as the saying goes, *the fans will love the new records*, let us demonstrate openly that what the fans are watching are human guinea pig competitions. But as a scientist, I cannot resist making the point that as in any biological experiment, it is the scientist and not the guinea pig that gets recognized.

Caveat lector: However persuasive my proposal may seem and, indeed, worth

undertaking, let me emphasize that it is launched by Carl Djerassi, the devil's advocate, rather than an aficionado of lusuaceuticals.

[1] H. J. Gumbrecht, "Über die Geheuchelte Wut" in *Frankfurter Allgemeine Sonntagszeitung*, July 29, 2007.

[2] "A Sporting Chance: Bans on drug enhancement in sport may go the way of earlier prohibitions on women and remuneration" (Editorial), *Nature* **2007**, *448*, 512.

[3] C. Djerassi, *ChemMedChem* **2007**, *2*, 1533.