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Cycling to Use Blood Profiles in Doping Case

By [JULIET MACUR](#)

A new front in the fight against doping has formed, with the embattled and bruised sport of cycling taking the lead.

One or more professional cyclists will soon face a doping case based not on a failed drug test or a criminal investigation, but rather on telltale changes in the blood that signal the use of performance enhancers, the sport's governing body, [the International Cycling Union](#), said.

Pat McQuaid, the group's president, said it was in the final stages of gathering scientific data and legal paperwork to bring a doping case against at least one rider whose blood profile had shown evidence of doping.

He said it would be the first case born purely from evidence that an athlete's blood profile, called a biological passport, had changed in comparison with a baseline drawn from earlier tests.

"It's a completely new form of fighting against doping," Mr. McQuaid said last week at a news conference held during the Tour of California. "I do believe that the whole biological passport program is going to be the future of antidoping or one aspect in the arsenal of the future of antidoping."

Mr. McQuaid would not say how many cases were being prepared or how many athletes were involved, adding that it may be one or three or six riders. He said the doping actions would begin in "the coming days and weeks."

Moving forward with such an aggressive antidoping plan, he said, would show cycling's effort to right itself after years of doping scandals involving many of the sport's top riders. [Floyd Landis](#), the 2006 [Tour de France](#) winner, was stripped of his Tour title [for using synthetic testosterone](#) and served a two-year ban.

Any riders whose blood profiles trigger a doping case will also face a two-year suspension if it is their first doping offense.

"It will bring back the credibility of cycling, which is badly needed," Mr. McQuaid said.

The biological passport, a program long discussed by sports and antidoping officials, is designed to make it harder to hide use of performance-enhancing drugs. Cycling's program, which started as a pilot effort in association with [the World Anti-Doping Agency](#) at the beginning of last season, builds a record of several values in an athlete's blood over a series of tests. Some cycling teams use their own versions of the passport, but it has not been applied to the sport as a whole before — and never as the basis for a doping allegation.

The cycling union said it had taken more than 8,000 blood samples from its riders, compiling more than 800 blood profiles. Each rider has provided about 10 blood samples in unannounced situations, both in and out of competition. The riders are also subject to conventional drug testing.

Scientists involved in the analysis of the blood profiles said that three to six blood samples are necessary to form a baseline for each rider. Shifts in those baseline values could indicate that a rider was using a substance like EPO, which accelerates the production of endurance-boosting, oxygen-carrying red blood cells.

To prepare for the WADA passport program, a hematological working group, including scientists from around the world, determined what blood markers would be analyzed.

Eight different blood markers, including hemoglobin, are examined, said Robin Parisotto, a researcher from Australia. He is one of the nine scientists on an independent panel that reviews the abnormal blood profiles for the International Cycling Union, which is known as the U.C.I.

The markers are put into formulas and models that determine the statistical probabilities that an athlete is doping. Mr. Parisotto said the goal was to reach a 99.9 percent probability.

“The beauty with the blood passport is that you don’t need to know each and every drug that is out there because you see the indication that something is being used,” said Mr. Parisotto, who was the principal researcher in the creation of the first test for EPO used at the Olympic Games.

“With some cases, you can win hands down,” he said. “The athlete will have a difficult time explaining the spikes and troughs of patterns in their blood. They won’t be able to say they used the wrong toothpaste, or that they got something from their dog. But the U.C.I. has to tread very carefully because this is such a new paradigm.”

For example, there would normally be a relatively constant level of hemoglobin in a rider’s profile out of competition, and the level would naturally decrease during a multistage competition, when the rider is exerting effort, said Michael Ashenden, another scientist on the U.C.I. panel. If a rider is doping, that level might not decrease, or could slightly increase, during that competition.

A conventional test can detect synthetic EPO in a rider’s system for a few days, Mr. Ashenden said, but a blood profile gives antidoping scientists an edge. “The signature that the rider used EPO will stay in the blood for much, much longer, maybe 5-10 days or longer, depending on the dosage,” he said.

Still, Mr. Ashenden said, the biological passport is not perfect. Riders who transfuse their own blood may not be caught because the swings in their blood values are not as dramatic as they can be with EPO use. He also said that the passport system would be successful for “about a year or so” until riders figure a way around it.

“Back in 2001, it would have decimated the sport because athletes were so careless and blasé about their blood doping,” said Mr. Ashenden, the project coordinator for an Australia-based research group, the Science and Industry Against Blood doping. “Now we’ll catch the least sophisticated ones. The others will be more careful.”

Antidoping scientists and officials, as well as other sports federations, are eager to see the outcome of a doping case based on a cyclist's biological profile.

Mr. Parisotto said: "There's a lot riding on this, more than just the credibility of the U.C.I. The philosophy of the passport and the future of the program will be on the line in the near future. They really must win their first case."

Mr. McQuaid and others at the cycling union expect to go to court to prove that their program works, and they are bracing for an expensive legal battle.

Travis Tygart, chief executive of the [United States Anti-Doping Agency](#), said that the case would most likely come down to whether the science was good enough and reliable enough to show that nothing but doping could have caused a variation in an athlete's blood profile.

"The question becomes, 'How accurate and how persuasive is the data?'" Mr. Tygart said.

David Howman, the director general of WADA, said the agency was completing an operating manual regarding the athletes' passports, and that the cycling union had followed those rules.

That manual will help standardize steps in the passport program like collection and transport of the blood samples. As soon as those standards are published, Mr. Howman said, other international federations — like those that govern skiing, skating, track and field and biathlon — will begin passport programs.

But first, cycling's initial case must succeed, and WADA is preparing to support the U.C.I. "Everyone is scared of that first case because they don't want it to bomb on them," Mr. Howman said. "We are very anxious to ensure that this is a successful project because the sooner we have a successful case, the better it will be for future cases. This will be a significant step forward in protecting clean athletes."

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