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Race decision rests with doctors

Before he is allowed behind the wheel, Hamilton must pass a series of stringent tests that have been designed to save drivers from themselves

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Lewis Hamilton has fellow F1 driver Ralf Schumacher to thank for the medical tests he will undergo before a decision is taken on whether or not he will be allowed to compete in the European Grand Prix. McLaren boss Ron Dennis wants his driver to take part, but knows his wellbeing must come first.

In 2003, Schumacher, brother of seven-time world champion Michael, had a massive shunt in his Williams during a Friday practice session at Monza. The following day he climbed back into his race car and headed out on to the track, but after the first lap he reported back to this team that he had nearly forgotten to brake at the 200mph chicane. He was immediately pulled back into the pits, removed from the car and ordered to rest. After this, the doctors realised that racing drivers could not be trusted to make decisions regarding their wellbeing.

Later in 2003, F1 introduced a new system. Immediate PostConcussion Assessment and Cognitive Testing (ImPACT) was developed at the University of Pittsburgh Medical Center by Mark Lovell and Dr Joseph Maroon. The test, which takes around 20 minutes, measures memory, reaction time, mental speed, information-processing, anticipation time and other functions of the brain which are affected by concussion. The test is initially tried on drivers when they are healthy, which provides a baseline if they should be involved in an accident. This is used in addition to a clinical examination and provides a more objective and scientific way of measuring if a driver is fit to race.

In the past, the doctors asked the driver if he was suffering from dizzy spells or headaches, and most would say no, simply because they wanted to race. Martin Brundle insisted that he was fine to drive after his bad accident in the swimming pool section at Monaco in 1984. As he sat in the car, he asked team boss Ken Tyrrell which way the track went when he got out of the pits. In 1987, Nelson Piquet had a fierce argument with the then FIA doctor Professor Sid Watkins after a shunt at Imola, when he insisted that he must be allowed to drive as he was fine. "Then why have you got your shoes on the wrong way round?" asked Watkins. That was the end of his weekend's work.

Doctors know that a racing driver with concussion who competes and then has another injury is in danger of either killing himself or suffering severe brain damage, and, clearly, neither option is acceptable.

The process was developed in the National Football League in the United States in the 1980s, and it has been widely tested and is used in various sports including Cart and the Indy Racing League. It was studied by both Nascar and F1 before being adopted in 2003.

The programme helps doctors create a database about concussion, which has always been a problem in motor racing, particularly in the United States where oval racing cars tend to have heavy impacts with concrete walls.

“We had no good way of really looking at it and judging who had too many concussions and who was in trouble because of it,” said Cart doctor Steve Olvey.

This system was used on the Polish driver Robert Kubica when he had his huge accident in Canada, and was the prime reason why he had to sit out at the next race in Indianapolis and the Silverstone test following the US Grand Prix. Only when he proved that he was fit to get behind the wheel of a car again was he allowed to compete.