



CASE STUDY - HEAD INJURY COMEBACK

# Tough nut to crack

**A SKIING ACCIDENT** left Gavin Rees with serious injuries to his face and head. Cycling is one of the few sports he can do without causing excessive discomfort and now he is ready to tackle an emotional two-wheel challenge



“Like any area of training, specificity is the key to improving performance. As Gavin will be cycling for three days consecutively followed by a day of rest, his training programme has been structured to duplicate these demands”

**The rider**

Gavin Rees is a primary school teacher in Cardiff. Before a horrendous ski accident, which required him to have 24 titanium plates in his head (more metalwork than anyone else in Europe) he worked as a PE teacher. Reading Lance Armstrong’s book during his convalescence inspired him to take up cycling.

“I can’t push heavy weights because of the pressure on my head and I need to train at lower intensities. Getting the weight off has been the hardest part of regaining fitness, before the accident I was 12 stone 8lb, I’m now nearer 15 stone.”

**The specialist**

Simon Harling established Elite Fitness as a sports-science based fitness company. Simon is a BASES accredited sport and exercise scientist and has years of experience working with sportspeople and the public, helping them achieve their health and fitness goals.

**The problem**

Gavin says: “Lance Armstrong turned me onto *Cycling Weekly* when I was in hospital, a friend gave it to me to read. I realised I needed to focus on my recovery the way Lance did, and cycling was the sport for me as I am now less mobile than before. I can’t head a football or play rugby.

“I had the idea to do a charity ride even before I had my bike. It was a target to aim for. I am starting the ride in Milford Haven, where I recuperated, I then ride to Reigate, which is where I set off for the skiing holiday. I then wanted to ride to Geneva, which is where I had my surgery. But rather than going straight there we are taking in a few historic towns to make it up to 1,000 miles because it’s kind of catchy. I am going to finish on Alpe d’Huez, it’s a giant of the Tour de France and Lance Armstrong played a huge part in my recovery.

“The amount of damage and metalwork in my head has led to vision problems. At first my vision was too bad to go out on the road and instead I used an exercise bike in the gym. I need to turn my head rather than use my eyes or I get double vision. I have to hold my head off-centre because of my vision, which makes my neck and back ache. I also get headaches.

**The solution**

For an amateur cyclist, the challenges of riding over a thousand miles in 12 days are unique to say the least. You need to average more than 80 miles per day which, depending on your cycling speed, will mean you’ll be in the saddle for more than four hours at a time. Along with sweating around two litres per hour, you will be burning in excess of 4,500 calories

per day, almost double what the recommended daily intake is (2,500kcal per day) for the average male. These challenges are further compounded by the nature and extent of Gavin’s injuries, requiring the training intensity be kept at certain levels.

As with all athletes who come to Elite Fitness to

improve their performance, the programme begins with a ramp test to determine factors such as anaerobic threshold, peak power output and VO2 max. In Gavin’s case he won’t be taken to his maximal exercise capacity due to the severity of his injuries. What is important to Gavin — and to all ultra-distance athlete — is exercise efficiency and lactate threshold.

Doctors told him it would take seven years before he could resume normal life. Gavin began teaching again after two

To follow Gavin’s progress or to help with fund-raising for the Maxillo-Facial department of Morriston hospital visit [www.cyclegeneva.co.uk](http://www.cyclegeneva.co.uk)

19 hours of surgery were required to rebuild Gavin’s face after he fell 200m while skiing in the Alps. A total of 24 titanium plates and 131 screws in his head mean that he has more metalwork in his head than anyone else in Europe

Gavin’s journey begins on August 2 in Milford Haven and finishes on August 16 on L’Alpe d’Huez

The lactate threshold refers to the highest exercise intensity that is not associated with an increase in blood lactate concentration above resting level (typically less than 1.0mmol. L-1) and is reflected by exercise intensities that can be sustained for long periods of time. This is not to be confused with the anaerobic threshold, which is characterised by a rapid increase in blood lactate and exercise intensities that can only be maintained for short periods of time.

Like any area of training, specificity is the key to improving performance. As Gavin will be cycling for three days consecutively followed by a day of rest, his training programme has been structured to duplicate these demands. The training has been broken down into three distinct phases.

**Phase one:** Increase Gavin’s power output at lactate threshold and cycling economy through long intensive intervals. Weekly increases in length of time of long rides.

**Phase two:** Maintain intensity of interval rides while developing tempo. Two consecutive rides of around four hours’ duration.

**Phase three:** Three consecutive rides of four to six hours. Taper to event. Although the above plan is specific to Gavin and his event, it is worth noting that there are a few simple guidelines that will help in structuring any training plan for an ultra-distance event (Noakes, *The Lore of Running*, 1991).

- Train frequently and all-year round

- Start gradually and train gently
- Train first for distance, only later for speed
- Alternate hard and easy training days
- Don’t be ruled by your schedule if you have a cold or if there is bad weather

**The outcome**

Gavin says: “I’m not quite ready to do 100 miles every day but I’m getting there. I did a sportive ride and covered 40 miles in two hours flat and finished in the first 15 riders. I’ve started a 10-week plan, I’m doing lots of long rides to improve my endurance and getting used to sitting in a saddle for 8-10 hours. I also want to improve my recovery.

“You must be organised if you are a teacher so I have approached this in a logical way. I try to instill in my kids the will to never give up.”

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