



VITAL STATISTICS:

prediction vs performance

In the May issue of *Rf*, three hard-training runners committed to print their goal finish times for Brighton and London marathons – targets that had been scientifically determined by physiological tests at the University of Brighton's Marathon Support Unit. Did their performances live up to predictions?

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The group of 15 runners who signed up to the University of Brighton's Marathon Support Unit (MSU) in winter 2011 did so to try and establish a scientific profile of their fitness and, in turn, ascertain a realistic finishing time for the April marathons they had entered. Each of them underwent two rounds of laboratory tests during their 12-16 weeks of preparatory training; by the end of March, final reports were written and targets set. All that was left to do was run their races.

The main case study in May's 'Vital Statistics' feature was 31-year-old graphic designer Tom Morris. Tom is a club-mate – we both compete for Lewes AC – so I was personally interested in his debut road marathon attempt. He had decided months ago to run the Brighton Marathon, and opted to sign up for MSU support because he wanted to find out precisely what his body was capable of, so as to establish a challenging yet achievable target time and avoid a repeat of his experience in the 2011 Beachy Head Marathon, where he set out too fast and consequently faded.

The MSU tests revealed that Tom's VO₂max (maximal oxygen uptake) was 70ml/kg/min, which is on the cusp of international athlete-level, so there were no worries in that department. His running economy (RE) – the amount of oxygen used per kilogramme of bodyweight per kilometre of running – was measured as 204ml/kg/km, which was likewise deemed a respectable figure. Finally, Tom's lactate threshold (LT) – the point at which demand for oxygen begins to outstrip supply and lactate starts to accumulate in the blood – occurred at 14.8kph (6:30/mile pace).

This LT pace was the figure on which the MSU based Tom's marathon target: 6:30/mile pace, which equates to a finish time of 2hrs 50mins. Running the entire distance at this pace, to finish 10mins under the three-hour mark, was his optimum achievable goal, according to the MSU's data. Although there was no guarantee of success, this goal time – supported by a raft of test data – was certified realistic. But Tom had other ideas...

His training had gone exceptionally well; he was regularly running 30min tempo runs at 5:40/mile pace, achieved a scorching PB at the 0.4-mile-too-long Brighton Half Marathon, of 1hr 17mins (5:42/mile), and completed a 20-mile training run in 2hrs 01min (6:02/mile). His confidence was brimming, and the MSU's goal pace of 6:30/mile seemed frankly too easy. I shared Tom's optimism; I had witnessed much of his training, and was so impressed that I tempted fate by predicting a marathon performance of 2hrs 42mins (6:11/mile). How would my prediction – "club-mate's instinct" – stack up against an estimate grounded in laboratory science?

"At the start, a small group took off at slightly faster than 6:00/mile pace," recalls Tom. "I let them go, as I was determined to stick to my goal pace of 6:00/mile or just above."

In case you missed that casually-dropped-in confession, he had set himself a target of 6:00/mile pace – equating to a finish time of 2hrs 37mins, a massive 13mins faster than the MSU's advised target. Ambitious indeed!

"I felt very comfortable over the first 15 miles," Tom continues, "albeit a little uneasy because my heart-rate

