

abuse would result in a syndrome similar to acromegaly with attendant risks of hypertension, cardiomyopathy, malignancy, myopathy, peripheral neuropathy, and glucose intolerance. Thus while GH at physiological levels has major beneficial effects, its abuse leaves the athlete at high risk, and it behoves the medical and scientific communities to curtail its use as a doping agent.

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Marie-Louise Healy is a research fellow at St Thomas's Hospital working on the GH-2000 project, funded by the International Olympic Committee and the European Commission. There is collaboration between four clinical academic centres, all of which have expertise in peptide hormone research. The members of the partnership are Professor Bengt-Ake Bengtsson (Sweden), Professor Jens S Christiansen (Denmark), Dr J Powrie (UK), Dr David Russell-Jones (UK), Professor Luigi Sacca (Italy), and Professor Peter Sönksen (UK), the project coordinator.

The project aims at developing a methodology for the detection of the use and abuse of exogenously administered growth hormone and related substances in sport. The target is to establish this before the Sydney Olympic Games.

- 1 Cuneo RC, Salomon F, Wiles CM, Hesp R, Sonksen PH. Growth hormone treatment in growth-hormone deficient adults. I. Effects on skeletal muscle mass and strength. *J Appl Physiol* 1991;70:688-94.
- 2 Salomon F, Cuneo C, Hesp R, Sonksen PH. The effects of treatment with recombinant human growth hormone on body composition and metabolism in adults with growth hormone deficiency. *N Engl J Med* 1989;321:1797-803.
- 3 Christ E, Cummings MH, Westwood NB, Sawyer B M, Pearson TC, Sonksen PH, et al. The importance of growth hormone in the regulation of erythropoiesis, red cell mass, and plasma volume in adults with growth hormone deficiency. *J Clin Endocrinol Metab* 1997;82:8.
- 4 Cuneo RC, Salomon F, McGauley GA, Sonksen PH. The growth hormone deficiency syndrome in adults. *Clin Endocrinol* 1992;37:387-97.
- 5 Al-Dalmuji S. Adrenergic control of the secretion of anterior pituitary hormones. *J Clin Endocrinol Metab* 1993;77:355-92.
- 6 Russell-Jones DL, Umpleby AM, Hennessy TR, Bowes SB, Shjaee-Moadie F, Hopkins KD, et al. Use of aleucine clamp to demonstrate that IGF-1 actively stimulates protein synthesis in normal humans. *American Journal of Physiology* 1994; E591-8.
- 7 Crist DM, Peake GT, Egan PA, Waters DL. Body composition response to exogenous GH during training in highly conditioned adults. *J Appl Physiol* 1988;65:579-84.
- 8 Yarashaki KE, Campbell JA, Smith K, Rennie MJ, Holloszy JO, Bier DM. Effect of growth hormone and resistance exercise on muscle growth in young men. *Am J Physiol Endocrinol Metab* 1992;262:E261-7. Reviews

A hundred years ago

One hundred years ago, William Gilbert Grace still dominated the world of cricket. During the 1897 season, not far short of his 50th birthday, he scored 1532 runs at an average of just under 40 per innings and took 56 wickets. For any county cricketer this was a thoroughly efficient performance but, in well established middle age and nudging 19 stone on the scales, this was, apart from anything else, a remarkable demonstration of stamina. Remember that in those days there were few cars and travel around the country was mainly by rail. Fortunately, such was WG's fame that when he was late trains were often delayed until the great man arrived. Mindful of his professional commitments he continued to work in his family practice in Bristol at weekends and between matches (fig 1).

For a man of his size, perhaps not huge by today's standards, he certainly imposed formidable punishment on his muscular skeletal system. Yet, surprisingly, during the long summer of 1897 there were no records of his sustaining any serious injuries. Mercifully he did not have to undertake regular overseas tours in the winters; his major sporting activity then was beagling. Think of the stress fractures, torn muscles, and ruptured ligaments that our own modern "all the year round" cricketers suffer. They rarely survive the first class game after their mid 30s. Perhaps the demands of professional sport neglect the need for rest and recuperation during the close season.

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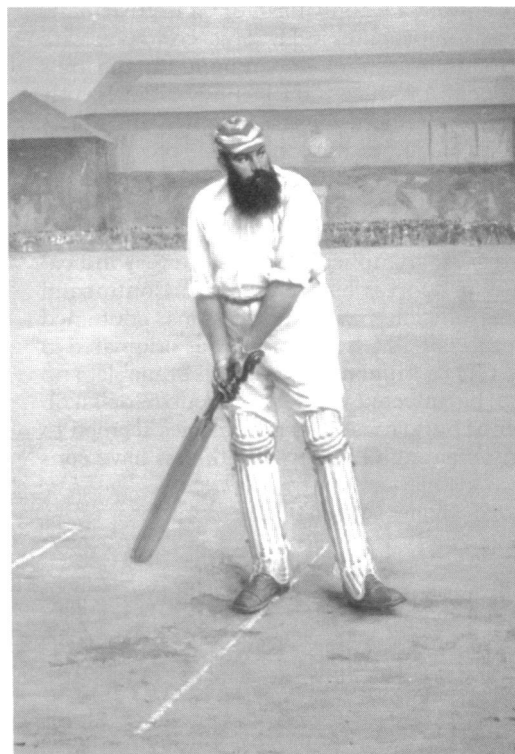


Figure 1 Dr W G Grace. From an oil painting by Archibald J Stuart Wortley, 1890. Reproduced with permission of the MCC.