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Letter to the Editor

Disease Activity in Juvenile Myasthenia cannot be Monitored Based on Athletic Performance

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Letter to the Editor

We read Chakrapani's article about a swimmer with interest whose athletic performance reflected the activity and severity of juvenile myasthenia gravis due to antibodies against the acetylcholine receptor [1]. It was concluded that athletic performance can serve as a potential quantitative surrogate marker for disease activity, that athletic performance promotes continuous training and physical activity, and that physical activity may have a positive immunomodulatory effect [1]. The study is insightful, but some points should be discussed.

First, we disagree with the assumption that race times in swimming are objective [1]. Although the stopwatch is an objective means of measuring time, race times are strongly influenced by environmental factors, pool design and mechanics, and the specific conditions of the race [2]. Deeper pools allow displaced water to flow downwards, resulting in less surface turbulence. Gutters in swimming lanes absorb waves rather than reflecting them back towards the swimmer, thus reducing water resistance. Modern lane markings reduce turbulence between lanes. Slightly warmer water reduces viscosity but causes swimmers to overheat more quickly. Colder water is better for sustained performance. Swimming in the slipstream of other swimmers or behind a leading swimmer allows an athlete to conserve energy and improve their time. Times are also affected by the quality and height of the starting blocks, as well as the distance of the underwater dolphin kick. A swimmer will achieve a completely different time when preparing for a training session compared to training during a competition. A swimmer in a high-performance wetsuit will achieve a faster time than a swimmer in a standard swimsuit [2].

Secondly, we disagree with the view that athletic performance is a suitable instrument for monitoring disease severity in patients with juvenile myasthenia gravis [1]. A patient's athletic performance is not determined solely by disease activity, but by a complex interplay of physical attributes, mental strength, environmental conditions, and external support systems. Mastery of these interconnected areas distinguishes elite athletes from others [3]. Factors that determine athletic performance include the efficiency of movements, the duration of exertion, the ability to switch between aerobic and anaerobic systems, innate genetic characteristics such as the composition of skeletal muscle fibers and basic cardiovascular capacity, the ability to cope with frustration, anxiety, and negative emotions under the pressure of competition, the ability to block out distractions and maintain mental strength, adherence to tailored nutritional plans, adequate hydration, the technical skill to execute movements precisely and efficiently, a deep understanding of the sport and game situations, the ability to adapt to the opponent's tactics, climatic conditions such as temperature, suitable equipment and technologically advanced devices, the quality of coaching, psychological support, and structured training programs [3].

Third, it is incomprehensible why the current medication has not been classified as doping by the sports authorities. Steroids are known to temporarily enhance physical performance. They provide a performance advantage by mobilizing energy reserves, accelerating red blood cell production, reducing inflammation, and masking pain or fatigue via the central nervous system [4]. As long as confounding factors affecting athletic performance and competition time are not taken into account, athletic performance cannot be recommended as a biomarker for disease activity in juvenile myasthenia gravis.

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