

# “AND THEREBY HANGS A TALE”: CURRENT MEDICAL AND SCIENTIFIC CONTROVERSIES IN PARALYMPIC SPORT

YETSA A. TUAKLI-WOSORNU, MD, MPH

## Abstract

The Paralympic Games have experienced a meteoric rise in popularity, media coverage, and participation over the past decade. In September, Rio de Janeiro, Brazil hosted one of the most highly contested and well-subscribed Paralympic Games in the event's 56-year history. As the competitive stakes rise, the sophistication of adaptive technology increases and the broader Paralympic Movement matures, medical and scientific controversies in Paralympic sport become increasingly complex. The aim of this article is to highlight select controversies facing the athletes, coaches, physicians, and scientists of the modern-day Paralympic Movement, and to contextualize those controversies in a practical, case-based format. Ultimately, the unique medical and scientific controversies of Paralympic sport, and the athletes' stories that incite them, set the stage for exciting new ground to be broken in sports medicine, sports science, ethics, and adaptive technology.

**Keywords:** Paralympics, medical committee, disability sport

*“Sport has the power to change the world. It has the power to inspire. It has the power to unite people in a way that little else does...”*

Nelson Mandela, Monaco  
Laureus World Sports Awards 2000

The Paralympic Movement is one of the most successful sporting initiatives in history. What started as a grassroots effort to restore war-wounded citizens to physical, mental, and social health has evolved into a global campaign for unification and empowerment through competitive parasport (Blauwet & Willick, 2012; Silver, 2012). The contemporary Paralympic Movement is enjoying unprecedented growth: the 15th meeting of the Paralympic Games was contested in Rio de Janeiro, Brazil, this past September. It featured 159 countries, 23 sports, and 66 hours of coverage by NBC Universal. Moreover, the International Paralympic Committee (IPC) celebrated its quarter century anniversary in 2014, a momentous achievement for the largest international sports organization dedicated to the core values of courage,

determination, inspiration and equality through parasport (Bailey, 2008; McNamee, 2016).

Of the 12 standing IPC committees, the medical and scientific committees work closely with a few compelling controversies facing Paralympic sport. These issues highlight the unique and evolving complexities of parasport and require a multidisciplinary team effort if resolution is to be achieved. Using a practical, case-based format, this manuscript aims to describe and discuss four select controversies facing Paralympic athletes, coaches, physicians, and scientists.

## Case 1

*Over a 4-year period, a star bilateral below-the-knee amputee sprinter improved his Paralympic 200m performance by 4 seconds. After running 29.0s in the 2004 Games and failing to medal, he sprinted to victory in the 2008 Games in a time of 25.0s. Of interest to his competitors, he also “grew” 2 inches due to the use of progressively longer prosthetic lower limbs. As a bilateral below-the-knee amputee, he competes in the T44 class of Paralympic athletes and thus inadvertently finds himself squarely in the middle of an important controversy in Paralympic sport: the fair and appropriate use of cutting-edge prosthetic technology among amputee track and field athletes.*

## Case Discussion

As contemporary sprint prostheses evolve technologically, questions about the functional advantages of lower-limb prostheses are increasingly asked (Burkett, McNamee, & Potthast, 2011; Nolan, 2008). This controversy often rears

