

## **Project Review**

**“Effect of sildenafil on athletic performance in athletes with spinal cord injury: a prospective, placebo controlled, blinded, crossover study”**

**S. Willick, W. Thompson, Y. Vaniandewijck, M. Strupler, C. Perret, P. Van de Viliet, P. Hespel** (International Paralympic Committee, Germany),

In recent years scientific research has shown that medications such as sildenafil (Viagra) have the ability to enhance athletic performance at very high altitudes. This has prompted members of the anti-doping community to take an increasing interest in this class of medications, even though research has not shown that they improve athletic performance at sea level or moderate altitudes. This class of medications is of particular importance to athletes with spinal cord injury. Many athletes with spinal cord injury use these medications to treat erectile dysfunction of neurologic origin. Therefore, it is important to understand what effects, if any, this class of medications has on athletic performance in athletes with spinal cord injury. We will attempt to answer this question with a prospective, randomized, controlled study of athletic performance in athletes with spinal cord injury on sildenafil versus placebo at both low and moderate altitudes.

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**Results and Conclusion:**

Whereas the ingestions of Sildenafil Citrate tends to improve some cardiovascular and respiratory parameters such as systemic pulmonary arterial pressure and percentage of arterial oxygen saturation mainly under hypoxic conditions in able-bodied subjects, there seems to be no indication that this is the case in athletes with a spinal cord injury. In contrast, there seems to be a negative impact on exercise performance, oxygen saturation, heart rate and lactate concentrations at moderate altitude in this population. Further, no ergogenic effect of a Sildenafil Citrate ingestion was found concerning exercise capacity at sea level and moderate altitude compared to placebo. Thus, it can be concluded from our study results that the ingestion of sildenafil does not enhance exercise capacity in athletes with a spinal cord injury and rather seems to have a negative impact on performance in this population when competing at altitudes up to 2200m.