

Infographic. Thermoregulatory impairment in athletes with a spinal cord injury

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Presented in this infographic is a summary of studies investigating the thermoregulatory impairment of athletes with a spinal cord injury (SCI) during real-world sporting scenarios.¹⁻³ The infographic depicts the heightened thermal strain experienced by athletes with tetraplegia (high-level lesions), both compared with athletes with paraplegia (low-level lesions) and within the sport of wheelchair rugby. In addition to the cooling interventions presented, the infographic highlights the significant need for appropriate interventions to reduce the risk of overheating and potential performance decrements.⁴ This infographic was field tested with those who work within a wheelchair sports environment, ranging from practitioners, researchers, athletes with an SCI and sports clinicians. The experimental studies were also designed in consultation with the wheelchair rugby coaches and players.

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Contributors All the authors were all involved in the design, analysis and contributed towards writing of the manuscripts of the studies highlighted in the infographic. All authors wrote the manuscripts highlighted in the infographic. KEG and VLG-T were involved in the main design of the infographic.

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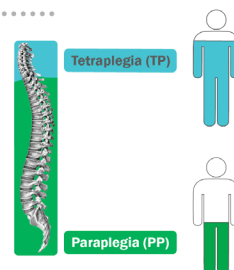
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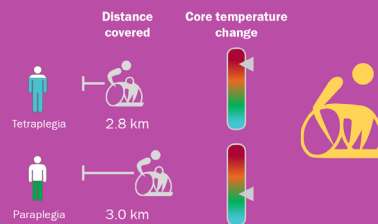
Thermoregulatory impairment in athletes with a spinal cord injury

A spinal cord injury (SCI) results in:



Lab setting[Ⓢ]

60 min intermittent sprint exercise



Game setting[Ⓢ]

Indoor wheelchair rugby match, game clock ≈70 mins



The core temperature of athletes with tetraplegia rises rapidly during exercise (in a 19-20° C environment) causing an overheating risk and potential performance decrements



Possible practical solution[Ⓢ]

For athletes with tetraplegia



Ice vest before exercise and water sprays during breaks in play

Distance covered **Core temperature change**



Same as no cooling



Peak core temperature **0.6°C** lower than no cooling

Summary



- TP: **heightened thermal strain** during simulated and wheelchair rugby match play compared to PP and non-SCI.
- **Employ appropriate cooling methods**, e.g. ice vests and water sprays.
- Alternative practical methods may also be beneficial.[Ⓢ]

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