






Hypohydration

Resources

-  Hypohydration = uncompensated loss of body water
-  Risks of hypohydration - prolonged exercise & exercising in hot environment
-  2% body mass may impair muscle strength (5-8%) anaerobic power (5%) and muscle endurance performance (8%)
-  Above may depend on tolerance
-  Drink to thirst or planned strategy - likely former for most populations

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KEY PAPERS

Savoie et al (2015). Effect of Hypohydration on Muscle Endurance, Strength, Anaerobic Power and Capacity and Vertical Jumping Ability: A Meta-Analysis. Sports Med. 45(8):1207-27

LINK

https://www.researchgate.net/publication/280100848_Effect_of_Hypohydration_on_Muscle_Endurance_Strength_Anaerobic_Power_and_Capacity_and_Vertical_Jumping_Ability_A_Meta-Analysis

James et al. (2017). Hypohydration impairs endurance performance: a blinded study. Physiol Rep.5:e13315.

LINK:

https://www.researchgate.net/publication/318130854_Hypohydration_impairs_endurance_performance_a_blinded_study

Minshull & James (2014). The effects of hypohydration and fatigue on neuromuscular activation performance. *Applied Physiology, Nutrition and Metabolism* 38: 21-2

LINK

https://www.researchgate.net/publication/235389734_The_effects_of_hypohydration_and_fatigue_on_neuromuscular_activation_performance?

James et al. (2019). Does Hypohydration Really Impair Endurance Performance? Methodological Considerations for Interpreting Hydration Research? *Sports Medicine* (2019) 49 (Suppl 2):S103–S114

LINK

https://www.researchgate.net/publication/337100643_Does_Hypohydration_Really_Impair_Endurance_Performance_Methodological_Considerations_for_Interpreting_Hydration_Research

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Additional References

Wall et al (2015). Current hydration guidelines are erroneous: dehydration does not impair exercise performance in the heat. *Br J Sports Med.* 49:1077–83

LINK: <https://www.researchgate.net/publication/256929168> Current hydration guidelines are erroneous Dehydration does not impair exercise performance in the heat

James et al (2018) Cow's milk as a post-exercise recovery drink: implications for performance and health. *Eur J Sp Sci* 19(13315):1-9

<https://www.researchgate.net/publication/328649178> Cow's milk as a post-exercise recovery drink implications for performance and health

Judelson et al (2007). Hydration and muscular performance: does fluid balance affect strength, power and high-intensity endurance? *Sports Med.* 37(10):907-21

LINK: <https://www.researchgate.net/publication/5955843> Hydration and muscular performance Does fluid balance affect strength power and high-intensity endurance

Baker et al. (2016) Normative data for regional sweat sodium concentration and whole body sweating rate in athletes. *J Sports Sci.* 34:358–68.

LINK: <https://www.researchgate.net/publication/278039203> Normative data for regional sweat sodium concentration and whole-body sweating rate in athletes [request full-text]