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To summarize, the conclusion of current research is showing that consuming 3mg/kg caffeine, 1.5 g Lcarnitine and their combination has no meaningful effect on performance. More researches are necessary in order to investigate the acute effects of different amount of caffeine and L-carnitine on 400-m freestyle performance time and the blood lactate level.

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References

Anselme F, Collomp K, Mercier B, Ahmaidi S, Prefaut C. 1992. Caffeine increases maximal anaerobic power and blood lactate concentration. European Journal of Applied Physiology and Occupation 65(2), 188-191.

http://dx.doi.org/10.1007/BF00705079

Bell DG, McLellan TM. 2002. Exercise endurance 1, 3, and 6 h after caffeine ingestion in caffeine users and nonusers. Journal of Applied Physiology 93(4), 1227-1234.

http://dx.doi.org/10.1152/japplphysiol.00187.2002

Bell DG, Jacobs I, Ellerington K. 2001. Effect of caffeine and ephedrine ingestion on anaerobic exercise performance. Medicine and Science Sports and Exercise **33(8)**, 1399-1403.

http://dx.doi.org/10.1097/00005768-200108000-00024

Beltz JD, Costill DL, Thomas R, Fink WJ, Kirwan JP. 1988. Energy demands of interval training for competitive swimming. Journal of Swimming Research 4(3), 5-9.

Biaggioni I, Paul S, Puckett A, Arzebiaga C.

1991. Caffeine and theophylline as adenosine receptor antagonists in humans. The Journal of Pharmacology Experimental Therapeutics and **258(2)**, 588–593. PMID: 1865359.

Brass EP, Hoppel CL, Hiatt WR. 1994. Effect of intravenous L-carnitine on carnitine homeostasis and fuel metabolism during exercise in humans. Clinical Pharmacology and Therapeutics 55(6), 681-92. PMID: 8004884.

Broquist HP, Borum PR. 1982. Carnitine biosynthesis, nutritional implication. Advances in nutritional research 4, 181-204.

http://dx.doi.org/10.1007/978-1-4613-9934-6 7

Carr A, Dawson B, Schneiker K, Goodman C, Lay B. 2008. Effect of caffeine supplementation on repeated sprint running performance. The Journal of Sports Medicine and Physical Fitness 48(4), 472-478. PMID:18997650.

Chun Y. 2008. The effect on aerobic, anaerobic capacity, blood lipids & immunoglobulin from taking L-carnitine in Judo athletes. Yongin University.

Collomp K, Ahmaidi S, Audran M, Chanal JL, Prefaut C. 1991. Effects of caffeine ingestion on performance and anaerobic metabolism during the Wingate test. International Journal of Sports Medicine 12(5), 439-443.

http://dx.doi.org/10.1055/s-2007-1024710

Collomp K, Ahmaidi S, Chatard JC, Audran M, Préfaut C. 1992. Benefits of caffeine ingestion on sprint performance in trained and untrained swimmers. European Journal of Applied Physiology and Occupational Physiology 64, 377-380.

http://dx.doi.org/10.1007/BF00636227

Collomp K, CaillaudC, Audran M, Chanal JL, Prefaut C. 1990. Effect of acute or chronic administration of caffeine on performance and on catecholamines during maximal cycle ergometer