



## Ephedrine-caffeine mixture in wet-cold stress

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### Abstract:

Our investigations were aimed at studying the possibility of enhancement of homeostatic processes protecting against excessive body cooling by using thermogenic drugs. We studied the influence of ephedrine (1 mg/kg) and caffeine (2.5 mg/kg) mixture in males immersed in cold water (12°C) on core temperature and plasma catecholamines, cortisol, energy substrates and chosen cognitive functions in subjects without or after previous submission to short cold acclimation procedure by five repeated brief cold-water immersions. The tested drugs did not significantly influence core temperature during immersion both in acclimated and non-acclimated subjects, however, they enhanced metabolic response. There were observed faster mobilization and higher increase in energy substrates, more pronounced in acclimated subjects (free fatty acids, glucose). Tested drugs slightly improved some psychosomatic reactions. Although the results of our study suggest that a single application of ephedrine-caffeine mixture might probably support physiological mechanisms protecting against excessive body cooling when used in people in wet-cold conditions, further research is needed to confirm the clinical significance.

### Key words:

ephedrine, caffeine, cold acclimation, metabolic response, wet-cold stress

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