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Galvanic skin response and serum orexin-A levels in humans increase during aerobic exercise

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Introduction: Orexin-A is a hypothalamic neuropeptide produced in the dorsal and lateral hypothalamus and orexin-producing cells have widespread anatomical projections within the central nervous system. Orexin-A is involved in multiple physiological functions, including eating behavior, thermoregulation and sleep-regulation.

Aim: As the exercise elicits stimulation of the sympathetic activity and temperature rise, the purpose of this experiment is to reveal possible association between exercise and plasmatic concentration of orexin-A which is a peptide involved in the sympathetic and thermogenic reactions.

Materials & Methods: Blood samples were collected from participants (men, n=20) before (times 0 and 15 min.) and after (times 30, 45, 60 min.) a cycle ergometer exercise at 75 W for 15 min. Also heart rate, galvanic skin response and rectal temperature were monitored.

Results: The exercise induced a significant increase ($p<0.01$) in plasmatic orexin A with a peak at 30 min after the exercise bout in association with an increase of the other three monitored variables: HR ($p<0.01$), GSR ($p<0.05$) and rectal temperature ($p<0.01$).

Conclusion: These findings are the first demonstration which indicates that plasmatic orexin-A, heart rate, galvanic skin response and rectal temperature is involved in the reactions to aerobic exercise.

Biography

Messina Giovanni has a degree in Medicine and Surgery, specialized in Nutrition and Sports Medicine, has a PhD in Food and Health at the Second University of Naples, Italy; He is Assistant Professor of Physiology and Human Nutrition at the Department of Clinical and Experimental Medicine - University of Foggia.

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