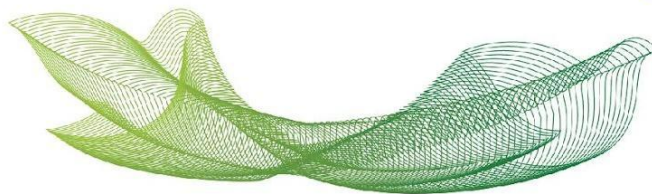


Tipo	Periódico
Título	Plasma Amino Acids and Acylcarnitines Are Associated with the Female but Not Male Adolescent Swimmer's Performance: An Integration between Mass Spectrometry and Complex Network Approaches
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Resumo	<p>The main aim of this study was to compare the performance over different distances, the critical velocity (CV), and plasma acylcarnitines/amino acids of male and female adolescent swimmers. Moreover, we applied the complex network approach to identify which molecules are associated with athletes' performances. On the first day under a controlled environment, blood samples were collected after 12hrs overnight fasting. The performance trials (100, 200, 400, and 800-m) were randomly performed in the subsequent four days in a swimming pool, and CV was determined by linear distance vs time mathematical function. Metabolomic analyses were carried out on a triple quadrupole mass spectrometer and electrospray ionization was carried out in positive mode (ESI+). No difference was observed between male and female swimmers' performance. Except for 200-m distance (<math>p=0.08</math>), plasma tyrosine was significantly associated with the female's performances over the trials (100-m, <math>p=0.04</math>; 400-m, <math>p=0.04</math>; 800-m, <math>p=0.02</math>) and the CV (<math>p=0.02</math>) only for female swimmers. The complex network approach showed that glycine(0.406), glutamine(0.400), arginine(0.335), free carnitine(0.355), tryptophan(0.289), and histidine(0.271) as the most influential nodes to reach tyrosine. These results revealed a thread that must be explored in further</p>



	randomized/controlled designs, improving the knowledge surrounding nutrition and adolescent swimmers' performance.
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