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neuroendocrinological model for an interaction between exercise and cognition; 3 The transient hypofrontality theory and its implications for emotion and cognition; 3.1 Clearing the ground; 3.2 Exercise-induced transient hypofrontality; 3.3 Implications for emotion; 3.4 Implications for cognition
3.5 Reconceptualizing the existing data in the field4 Methodological issues: research approaches, research design, and task selection; 4.1 Research approaches; 4.2 Research design issues; 4.3 Task selection issues; 4.4 Conclusions and recommendations; PART 2 ACUTE EXERCISE AND COGNITION; 5 Exercise, dehydration and cognitive function; 5.1 Exercise-induced dehydration and cognitive function; 5.2 Discussion; 5.3 Conclusions; 6 Exercise, nutrition and cognition; 6.1 Fatigue and limits to human performance; 6.2 Assessing the effects of exercise and nutrition on cognitive performance
6.3 Nutrition, exercise and cognitive performance6.4 Micronutrients, exercise and cognitive performance; 6.5 Nutritional ergogenic aids and cognitive performance; 6.6 Integration of research observations; 6.7 Challenges in research; 6.8 Conclusion; 7 A chronometric and electromyographic approach to the effect of exercise on reaction time; 7.1 Research; 7.2 Conclusion; 8 Acute aerobic exercise effects on event-related brain potentials; 8.1 Executive control; 8.2 Neuroelectric measurement; 8.3 Event-related brain potentials during exercise; 8.4 Event-related brain potentials following exercise
8.5 Future directions and conclusions9 Exercise and decision-making in team games; 9.1 Designing a decision-making test; 9.2 Research results; 9.3 Ecological validity and future research; 9.4 Implications for team games players and coaches; 10 Blood glucose and brain metabolism in exercise; 10.1 Cerebral metabolism during exercise; 10.2 Cerebral oxygenation; 10.3 Cerebral metabolism; 10.4 Acute hypoglycemia; 10.5 Conclusions; 10.6 Future research; Acknowledgements; PART 3 CHRONIC EXERCISE AND COGNITION
11 An integrated approach to the effect of acute and chronic exercise on cognition: the linked role of individual and task constraints

Sommario/riassunto

This textbook focuses on the relationship between physical exercise and cognition, a very timely and important topic with major theoretical and practical implications for a number of areas including ageing, neurorehabilitation, depression and dementia. It brings together a wide range of analytical approaches and experimental results to provide a very useful overview and synthesis of this growing field of study. The book is divided into three parts:Part I covers the conceptual, theoretical and methodological underpinnings and issues.Part II focuses on advances in exercise and c