Nutritional Coaching Strategy to Modulate Training Efficiency

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Bearbeitet von
K.D. Tipton, L.J.C. van Loon

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Nutritional Coaching Strategy to Modulate Training Efficiency
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Nutritional Coaching
Strategy to Modulate
Training Efficiency

Editors

Kevin D. Tipton  Stirling, Scotland, UK
Luc J.C. van Loon  Maastricht, The Netherlands
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Preface

In addition to regular training, nutrition is one of the key factors that modulate exercise performance. A healthy diet, adapted to the specific demands imposed upon by the individual athlete’s training and competition, is required to allow optimal performance. Despite the fact that most athletes are primarily preoccupied with diet and nutritional support prior to and during exercise competition, there is an increasing awareness that nutrition plays a key role in translating the many training hours into useful adaptive responses in various tissues. Research over the last decade has shown many examples of the impact of dietary intervention to modulate the skeletal muscle adaptive response to prolonged exercise training. Of course, the latter is not surprising as it is the adaptive response to each successive exercise bout that results in a training status that allows peak performance. Therefore, proper nutritional coaching should not be restricted to the competitive events, but needs to be applied throughout both training and competition, each with its specific requirements regarding nutrient provision.

Proper nutritional counseling will improve exercise training efficiency and ultimately increase performance capacity. The latter is obviously of relevance for the competitive athlete, but also has important health and clinical relevance. In many preventative and therapeutic strategies, exercise has become accepted as a cornerstone in disease management. However, severely deconditioned people and more clinically compromised patient groups generally suffer from exercise intolerance limiting the volume and intensity of the exercise that can be performed. In these conditions, a more efficient adaptive response to an increase in habitual physical activity and/or exercise training would likely translate to greater clinical benefits. Clearly, the relevance of dietary counseling to modulate training efficiency will not be restricted to the competitive athlete, but extends to the general public and the more frail clinically compromised patient groups.

The aim of this workshop was to explore the numerous properties of nutritional interventions to modulate the adaptive response to exercise training and,
as such, to identify nutritional strategies that improve exercise training efficiency. We hope that the following chapters will provide a solid scientific basis upon which the reader can redefine key targets for future intervention and develop new insights into the complex interaction between nutrition and exercise.

Kevin D. Tipton
Luc J.C. van Loon
Foreword

Over the last few decades, much of sports nutrition research has focused on how to improve performance on race day, and many athletes likewise pay more attention to their race day nutrition than they do during the relatively larger volume of time they dedicate to training. There is a growing body of evidence, however, relating to the role that nutrition can play in helping athletes during training to get more out of their accumulated efforts as they prepare for competition. The concept that these nutritional strategies could be worked into an overall coaching regimen to help athletes improve over time was the overarching theme for the 75th Nestlé Nutrition Institute Workshop held in Majorca, Spain on the 7–8th of December 2011.

An esteemed group of top researchers from around the globe gathered to share their areas of expertise and interest and suggest some new strategies for improving athletes’ ability to gain more from their training, recover more quickly from injury and perhaps experience fewer sick days. For example, while the latest evidence suggests that higher intake rates of carbohydrates during endurance competition can improve performance, the gut may need to be trained to tolerate this higher intake in the weeks leading up to a competition. On the contrary, some training bouts might best be undertaken at a relatively low carbohydrate intake and muscle status in order to extract greater training adaptations from the exercising muscle. Introducing the latest evidence and then discussing the ways to best integrate these nutritional strategies to ultimately help the athletes best prepare for their competitions is a great example of the raison d’être for the NNI sports nutrition-themed workshops.

We wish to express sincere gratitude to the chairpersons of this workshop, Prof. Luc J.C. van Loon and Prof. Kevin D. Tipton for creating an excellent theme and scientific program. We are also deeply indebted to the talented researchers who have furthered our understanding on this topic through their presentations and papers.
Finally, we want to thank Zibi Szlufcik and the PowerBar Europe Team as well as Natalia Wagemans of the Nestlé Nutrition Institute for the excellent logistical execution of the workshop in the magnificent setting of Majorca, Spain.

*Eric Zaltas, MS, IOC Dipl Sports Nutrition*
Global Head R&D, Performance Nutrition
Nestlé Nutrition
Contributors

Chairpersons & Speakers

Prof. Louise M. Burke
Sports Nutrition
Australian Institute of Sport
Leverrier Crescent
Bruce, ACT 2616
Australia
E-Mail: louise.burke@ausport.gov.au

Prof. Wim Derave
Department of Movement and
Sports Sciences
Ghent University
Watersportlaan 2
B–9000 Ghent
Belgium
E-Mail: wim.derave@ugent.be

Prof. Martin J. Gibala
Department of Kinesiology
McMaster University
1280 Main Street West
Hamilton, ON L8S 4K1
Canada
E-Mail: gibalam@mcmaster.ca

Prof. Michael Gleeson
School of Sport, Exercise and Health
Sciences
Loughborough University
Loughborough
Leicestershire LE11 3TU
UK
E-Mail: m.Gleeson@lboro.ac.uk

Prof. John A. Hawley
School of Medical Sciences
RMIT University
Plenty Road
Bundoora, VIC 3083
Australia
E-Mail: john.hawley@rmit.edu.au

Prof. Asker Jeukendrup
School of Sport and Exercise Sciences
University of Birmingham
Edgbaston
Birmingham B15 2TT
UK
E-Mail: a.e.jeukendrup@bham.ac.uk

Prof. Andrew M. Jones
Sport and Health Sciences,
University of Exeter
Exeter EX12LU
UK
E-Mail: a.m.jones@exeter.ac.uk

Dr. Enette Larson-Meyer
The University of Wyoming
Department 3354
1000 E. University Avenue
Laramie, WY 820 70
USA
E-Mail: enette@uwyo.edu
Prof. Melinda M. Manore
Oregon State University
Nutrition
School Biological and Population Health Sciences
Milam 103
Corvallis, OR 97331
USA
E-Mail: melinda.manore@oregonstate.edu

Prof. Kevin D. Tipton
School of Sport
University of Stirling
Stirling FK9 4LA
UK
E-Mail: k.d.tipton@stir.ac.uk

Prof. Luc J.C. van Loon
Department of Human Movement Sciences
Maastricht University Medical Centre+
PO Box 616
NL–6200 MD Maastricht
The Netherlands
E-Mail: L.vanLoon@maastrichtuniversity.nl