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Practical Considerations in Applying Theory: How Can We Narrow the Gap Between Sports Science and Professional Practice in Sports Nutrition?

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INTRODUCTION

Most coaches, athletes and sport science professionals would agree that proper nutrition is essential for overall health and achieving optimal performance. Nutritional science has demonstrated that properly planned hydration and nutrition strategies can help athletes improve performance, recovery, decrease illness and promote training adaptations [1, 2, 3]. In my experience as a full-time, high-performance sport dietitian, comprehensive sport nutrition programming and integration is not commonplace across many elite sports in Canada.

Many Canadian sport organizations have developed integrated support teams (ISTs) which include a selection of sport health professionals to service and assist coaches and athletes [4]. These can include sport trainers, psychologists, physiologists, massage therapists, physiotherapists, physicians, athletic therapists, and dietitians/nutritionists [4]. In many cases, the use of the sport dietitian is limited to a few “group seminars” for athletes and some individual consults with underweight or overweight athletes. Everyday nutrition support and questions are usually fielded by coaches, trainers or therapists who end up with the most athlete face time.

Given the variety of nutrition issues that athletes face, this limited exposure to nutrition professionals is inadequate to truly support athletes across phases of training and competition. Drawing from my own professional experience in this area, the following commentary seeks to shed light on some of the areas of greatest nutrition need and suggestions for better nutrition integration within high-performance sport programs.

ATHLETES’ LACK OF BASIC NUTRITION SKILLS

Many athletes, especially young ones starting into the high-performance system, lack basic cooking, grocery shopping and nutrition planning skills. They rely on convenience, processed and fast foods for their daily training fuel. Recovery nutrition and hydration is really hit or miss due to poor planning and organization. Cheap prices and fancy packaging drive purchase decisions, not nutrition labels or micronutrient content.

Although this nutrition education area seems very elementary to some coaches and sport science professionals, these basic skills are critical for athletes to have in order to succeed. Athletes need to be able to navigate themselves around a grocery store and use a stove with

just as much skill as lifting weights in a gym; and plan their meals just as their next physio appointment. Meals should be another piece of the overall training regime, not an afterthought.

NUTRITION FOR DAILY TRAINING AND COMPETITION

In many cases, athletes are arriving to daily training under fueled and dehydrated [2, 3]. Many athletes do not have a concrete and tested competition nutrition plan. Coaches are left with athletes who are under-functioning during training sessions and not optimizing training adaptations.

Education and implementation of precise hydration and nutrition strategies for before, during and after training as well as competition is critical. Teams should adopt, support and demand a team nutrition and hydration protocol for each session. Setting up a hydration and fuel station in the team changing room with sign-in sheets, pre- and post-training weights and a recovery protocol are just as essential as a warm-up and cool-down.

EDUCATION AND INFORMATION ABOUT SUPPLEMENTS

It is no mystery that Canadian athletes are using supplements. In a 2007 study which surveyed 582 high performance Canadian athletes, over 88% of participants reported taking supplements during the previous 6 months [5]. There have been cases of positive doping tests and careers ruined due to tainted supplements [1, 2, 6]. There is a real danger not only from a doping standpoint, but also due to the widespread misinformation out there about supplements. Most athletes get supplement information from each other, a store associate or a fitness magazine [5]. I believe that this is in part due to not having access to an appropriate professional that they feel they can ask about these products.

A sport nutrition professional can help athletes make informed decisions when it comes to supplements. They can help athletes to research products and work with other members of the IST to trial and monitor effectiveness.

TRAVELLING AND TRAINING CAMPS

Many coaches have seen athletes eat or under-eat themselves out of a medal while on the road. The food environment can change drastically depending on the country travelled to and the nature of the athletic event. In addition to food availability and quality, risks for foodborne illness, sickness, team meal logistics, jetlag and environmental issues also come into play [1, 2]. Having a carefully planned travel nutrition plan and/or travelling with a team dietitian when competing in countries/events that are notorious for poor quality or planning can be a lifesaver.

Many athletes and teams may also engage in specific training camps to improve performance such as heat acclimatization or altitude training. Each of these states require that athletes are fueling properly while in these environments, as their needs for certain macro- and micro-nutrients change [2]. A careful examination of team nutrition during these camps is essential for athletes to reap the maximal benefit during that time.

QUALIFIED PROFESSIONALS

Finding competent and trained sport nutrition professionals is not an easy task. Registered Dietitians with extra education in sport as well as Registered Exercise Physiologists with extra education in nutrition can be key players [7-9]. Working with local sport centres is a good way to source a fit. The Medical Commission of the International Olympic Committee offers a 2-year postgraduate-level program in Sport and Exercise Nutrition [10]. Graduates

of this program have one of the most comprehensive and evidence based educational credentials in sport nutrition for high-performance athletes.

CONCLUSION

A calculated sport nutrition program can have tremendous benefits to athlete health, performance and development. Coaches should make a concerted effort to evaluate the critical areas of nutritional need for their athletes and plan accordingly with a qualified nutrition professional (Table 1). Given the variety of nutrition issues that athletes face on a daily basis, it is essential that nutrition is truly integrated within the IST in order to effectively support athletes across phases of training and competition.

Table 1. Sport Nutrition Programming Checklist for Coaches

Nutrition Area for Evaluation	Nutrition Intervention to Consider with Dietitian/Nutritionist
Basic cooking, shopping and planning skills	<ul style="list-style-type: none"> • Grocery shopping tour including label reading skills • Basic meal preparation and planning workshop
Optimizing daily training and recovery	<ul style="list-style-type: none"> • Athlete nutrition and hydration protocol for before, during and after training and recovery after training • Regular hydration testing in different temperatures and environments • Food and fluid station at training and competition venues
Supplements	<ul style="list-style-type: none"> • Athlete supplement inventory to assess team use • Ongoing evaluation, communication and education about supplements
High nutrition risk travelling	<ul style="list-style-type: none"> • Evaluate potential risks and nutrition issues • Work out meal planning and logistics ahead of time • Consider taking a sport nutrition professional with the team on long haul or high nutrition risk trips
Individuals with specific physique goals	<ul style="list-style-type: none"> • Athlete will work individually with nutrition professional and achieve specific appropriate IST members • Coach to communicate the desired outcomes and allow a healthy and realistic time frame for these changes

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