

## Research Article

### Green Brand Development in Sports Nutrition Food

Zhe Ren

Jilin Institute of Physical Education, China

**Abstract:** This study is to research the current situation and the effect which is brought by the nutrition food of the green brand development in sports nutrition food. Sports nutrition is the study and practice of nutrition and diet as it relates to athletic performance. It is concerned with the type and quantity of fluid and food taken by an athlete and deals with nutrients such as vitamins, minerals, supplements and organic substances such as carbohydrates, proteins and fats. Although an important part of many sports training regimens, it is most commonly considered in strength sports and endurance sports. From the view of meeting the demand for health of athletes, this study discussed the green brand development in sports nutrition food. Taking sustainable development theory as principle, we analyzed the advantages and disadvantages of green brand in sports nutrition food. In the fierce competitive environment, some companies blindly pursue the number of products, but ignore the quality of products. However, with the environmental protection consciousness and self-protection awareness, pure natural food, high-quality green food and healthy food have become people's preference. As for athletes, they also choose the green sports nutrition food. Therefore, developing the green brand for sports nutrition food will be a sustainable road for all food companies. In past 2 years, the developments of sports nutritive products, the formulation of trade standard, spread of sports nutrition knowledge, international and domestic scientific exchanges and training of sports dietitian had been done. These excellent situations predicted a good future of green brand development in sports nutrition food.

**Keywords:** Development, green brand, sports nutrition food, sustainable road

#### INTRODUCTION

Nowadays, eating to achieve peak physical performance and muscular strength is a growing phenomenon. News articles such as "Eat to become fitter", from the newspaper Daily News, tell us what to eat in order to "double the effect of training" (Atkinson, 2007). Moreover, we read in the same article that "the body has a window of 30 min after your workout where it is more receptive to nutrients and saves these in the muscles used during exercise". Similarly, the newspaper's article "How to eat right food to do fitness" claims that "proteins are essential for building and maintaining muscle and tissue in the body (Baghurst, 2012). If your body does not get enough energy, it will use protein for energy, which weakens the body's tissues and muscles". Within this context, specialized sports nutrition products and ingredients have been developed and a range of new market actors and sales channels have appeared. The consumption of specialized ingredients or food in order to enhance performance may seem to be a new phenomenon. However, eating energy rich food in relation to hard physical work has a long tradition in the most countries. The food that was most associated with forestry work at the turn of the 19<sup>th</sup> century was fried pork fat. To compensate the energy loss while working as a forester was a time-consuming part of life at that time and it was not to be done with

just any food. The forestry workers' choice of pork fat aimed at compensating for the need of 4000-7000 kcal a day.

Nutritionally engineered foods and supplement products such as sports nutrition, which include protein and energy products in various forms (bars, drinks, gel and powder), are nowadays used in order to intensify the effect of exercise and build a desired body shape (Bartee *et al.*, 2004). At the end of the 1990s only a few sports nutrition products were sold in special stores. Nowadays, sports nutrition products are widely available through various sales channels in most countries: grocery stores, pharmacies, health food stores, gyms, sports stores, cosmetic stores and an array of Internet sites. Marketing of such products has also become more visible and has grown rapidly in the Nordic countries in the last decade. There are no precise figures of the current consumption pattern of sports nutrition in Norway. However, it is reported that consumption of such products is rather common in some powerful sports countries and that more people consume sport nutrition products compared to other countries or areas. The market growth in these powerful sports countries illustrates that sports nutrition products are increasingly promoted to and used by "everyone" -not only professional athletes (Utaker, 2005). Thus sport nutrition products "have emerged as accessible for those seeking to lose weight and/or gain muscle or for those

simply wishing to look healthier". In other words, not only weight lifters, but individuals involved in a variety of sports. There are also more and more sports nutrition products especially designed and promoted toward women.

Sports nutrition is slowly moving from the niche markets of gyms and health food stores to mass-market outlets. Driven by new ingredients, packaging formats and changing consumer behavior, sport products are finding their way into supermarkets and convenience stores to satisfy consumer demand for healthy and convenient lifestyle solutions (Bjelland, 2008). However, authenticity and efficacy re-main big challenges for the sports nutrition market since consumers tend to be skeptical of the validity of the claims. Historically, consumers of sports nutrition products have been bodybuilders and athletes. This is changing as weekend sports enthusiasts and lifestyle users are creating new market opportunities for food manufacturers.

Globally, the market for sports nutrition products (excluding sport beverages) is estimated at US\$4.7 billion, of which, the United States (U.S.) is the largest consumer, representing approximately two-thirds of the world market in both volume and value of retail sales. Sports nutrition products can be categorized as food, beverage or supplements. Sports food and beverages include bars, sports drinks and gels, whereas sports nutrition supplements include performance enhancers, metabolic/fat burners, muscle builders, meal replacements, weight gainers and energy formulas sold in tablet, powder or ready-to-drink formats (Bristol, 1988). The growth rate of these discretionary products has been affected by the global recession and changing demographics.

However, more and more sports nutrition food of poor quality escapes into the market due to the huge profits and fierce competition environment. Except for the damage for human health, it brings a tremendous loss to the company's reputation. To lead a green life and get a sustainable development, it is very important for a sports nutrition food company to develop the green brand for its products. Green brand means pure natural food, healthy food and high-quality food. In this study, we first introduce the importance of sports nutrition and then present the consumption of sports nutrition. Later, we analyze the basic information about sports nutrition food market. In the end, we promote some key trends for the green brand development for sports nutrition food companies.

The aim of this study is to expound the development of sports nutrition food as well as research the current situation and the effect of the green brand development in sports nutrition food. The paper has also illustrated why developing the green brand for sports nutrition food is a sustainable road for all food companies.

## **UNDERSTANDING SPORTS NUTRITION**

Besides biomedical research, consumption of sports nutrition has remained away from mainstream sociological inquiry. The few studies of this phenomenon have tended to focus on professional sport athletes and the sub-cultural phenomenon of bodybuilding (Halkier, 2004). Supplement use among professional sport athletes has achieved a lot of focus from researchers since the detection of several cases of traces of illegal substances in "legal" sport nutrition products. Such studies have often focused upon risk behavior among athletes. Sports nutrition products have also been studied as part of the subordinate practices of eating, dieting and supplementation by bodybuilders. Recently, attention has been focused on the sport supplement use among non-professional, recreational athletes and on the normalization of such consumption. Since the muscular body is commonly embraced as desirable and prestigious, Parasecoli argue that "the food and supplement industry has tapped into these trends to acquire new consumers for highly processed products that ensure growing revenues for a sector structurally plagued by intense competition". Existing literature of sport supplement use has reflected upon existing ideals about masculinity and the male body. Atkinson (2007) understands sport supplement use in connection with a perceived "gender crisis". He claims that sport supplements are used by white middle class men as a pursuit of masculinity. Similarly, Parasecoli understand the technical and scientific vocabulary in advertisement of sport supplement products in male fitness magazines as related to masculine ideals about the fit body.

Although reflection about dieting and eating practices in connection with sport athletes' or bodybuilders' competition, exercise and supplementation practices have been discussed, consumption of sports nutrition has not been investigated as part of food culture but as a sub-cultural phenomenon. In the introduction of the special issue of anthropology of food which this study is a part of traditional argue that food culture is a subcultural phenomenon. We claim that a nutritional focus within the food culture is essential in order to understand the current normalization and mainstreaming of sport nutrition consumption. This nutritional focus may not be shared by everyone but should be considered an important and influential discourse of our time. Thus sport nutrition consumption reflects collectively shared aspects of the food culture. We argue that the increased market growth of sports nutrition products and the growth in consumption of such products challenge a sub-cultural perspective. Moreover, we argue that since women are a growing consumer group of such products, masculinity and male body ideals may only partially explain such practices. Sports nutrition

consumption necessitates an understanding of this phenomenon within a wider socio-cultural context. We thus claim that since consuming sports nutrition products is becoming more commonplace, investigating this consumption practice within the wider social context of our food culture may provide a fruitful understanding. However, we do acknowledge that sports nutrition products are part of a growing number of products and food items with health claims that make it challenging to draw the line between food and supplements or food and medicine.

When talking about different sports nutrition products, the debate in both the male and the female focus groups quickly turned to protein products. In the male group, almost all participants consumed protein powder and it was claimed to be a necessary component of a proper training regime. In the female group only three women consumed protein powder on a regular basis. But all of the women had consumed protein bars. A typical explanation for consuming protein products was to build muscles. Protein products were usually consumed right after training, because then the body's ability to absorb this particular nutrient was argued as very efficient. While carbohydrate products (energy bars, drinks and gels) were used more 'here and now' to keep up the energy level throughout the training session, protein products (protein powder and bars) were used more in the long-run, commonly in relation to strength training and body shaping practices-e.g., building muscles. The participants told that the benefit of consuming protein products was to lose weight without losing muscle mass. In contrast, carbohydrate products were consumed with more ambiguity, since such products may increase body weight if not consumed in connection with condition and endurance-related exercise.

While discussing the motives and explaining the advantages of consuming protein products, participants often used metaphorical expressions such as "gasoline on the tank", "building blocks", "keep the machinery going for a longer time", "if you just put enough gas into the body it obeys you", "keeps the machinery flexible" and "fills up the storages." Such expressions signify the body as a mechanized object such as a car, which should be filled with proper fuel (protein) to yield maximum power. Both Turner and Schilling connect the vocabulary of the 'body as a machine,' to the point that as much as we are a body for someone else, we are indeed a body for ourselves. Thus, the metaphor signalizes that the body is an object which its owner should maintain and keep in good order. Interpreting participants' expressions of motives such as to "put enough gas into the body" in order to perform or to keep it "flexible", "going for longer time" or for the body to "obey you", illustrate that consuming sports nutrition is viewed as a powerful tool or technique to discipline and control the body. Using the word fuel

instead of food is also common in masculine work-settings where energy is needed to work.

**The consumption of sports nutrition:** Investigating the consumption of sports nutrition as an expression of increased focus upon healthy lifestyles, a growing individual responsibility for healthy eating and living and an increasing nutritional evaluation of food and trust in the government's food regulation necessitates conceptualizing how bodies, health and nutrition are regulated. Inspired by Foucault's analysis of the development of the modern state, state power and control, as well as a more recent conceptualization of Foucault's thoughts, our aim is to understand the socio-cultural context of sports nutrition consumption.

Foucault's theories of the development of the modern state and state power has been used to explain how and why modern subjects internalize important values of society such as living a healthy life. According to Foucault, government control manifests itself through producing knowledge and discourses that individuals adopt which guide their behaviors and subsequently the behaviors of populations. We thus view consumption of sports nutrition as shaped by discourses and knowledge which act upon the individual consumers. In line with Foucault, Coveney argues that the science of nutrition was one of many population sciences that emerged at the beginning of the eighteenth century in order to develop knowledge to inform the regulation of health, life and the conduct of subjects. Nutrition emerged as a concern for the population's health and welfare through problematization of life and labor. As a population science, nutrition made individuals into 'objects of nutrition', a formation which depended upon individuals problematizing themselves in terms of consumption choice. We understand consumption of sports nutrition as a specific choice which rests upon consumers scrutinizing themselves with regards to nutrition, health and body shape.

Consuming protein products in order to build muscles without gaining weight can be understood as a self-disciplinary practice in its own right. According to Lupton, there are many historical accounts about restraining and depriving oneself of certain kinds of food. Moreover, modern-day self-starvation or anorexia nervosa has received considerable attention in social science as well as in public debates. Most adults, both men and woman do restrain themselves regularly from eating energy-dense food in order to avoid gaining weight. A few participants in this study used protein products the very same way as dietary products. Claims that protein powder and diet products were similar, or basically the same, were made in both focus groups. Thus consuming protein products when performing extensive training does not only increase muscles, but regulates what kind of flesh one wants to keep or wants to lose.

Meanwhile, quite a few of the participants had experienced unwanted side effects from the consumption of sports nutrition products, especially from energy gel, energy drinks and protein powder. Users of energy gel had experienced diarrhea and stomach pains. Still, participants had decided to continue and they adapted to the adverse effects they experienced. For instance one participant said: "One cannot consume energy gel at the beginning of a (bicycle) race, one has to take it in the middle of the race so that you will get over the goal line and can run quickly to the toilet." Claims were made that side-effects were only due to the fact that their bodies needed to get used to the new substance and that these bodily reactions were part of the process of finding out which products and serving amounts fitted their bodies. An illustrative example here can be the manner in which some of the male focus group participants used protein powder. For example, one male claimed that protein powder commonly will produce an upset stomach for about the first 2 weeks of usage and that the important thing is to not stop using it but to stick with it until the body adjusts to the new substance. Building on Foucaultian interpretation, potential side-effects from sport nutrition seem to be adapted to the self-regulating body-shaping practices of the participants. Moreover, disciplining the body by consuming sports nutrition thus seems to involve disciplining all parts of the body; flesh, muscles and the intestines.

To further investigate the consumption of sports nutrition products we thus find it necessary to explore the focus group participants' knowledge and trust in these products. We argue that Norwegians' trust in the governmental regulation of food products on the market has paved the way for the consumption pattern of sports nutrition we find today.

### **SPORTS NUTRITION FOOD MARKET**

Promotion in health awareness and change in consumer groups are the major growth drivers for the global sports nutrition market. According to a report published by a U.K.-based independent food research company in 2012, the proportion of respondents following healthy diet in the U.K. has increased from 70% in 2004 to 80% in 2012. According to a study conducted by the Swiss Society for Nutrition (commissioned by the Federal Office of Public Health (FOPH) in Switzerland) in 2010-2011, 71% of consumers indicated a greater emphasis on health awareness, while around 75% of consumers indicated taking interest in food product composition before making the purchase. Traditionally, bodybuilders and athletes were the only consumers for sports nutrition products. In recent years, new user groups (recreational and lifestyle users) have increased their market share in sport nutrition market. Lifestyle users consume sports

nutrition products as refreshment, quick meal replacement or a healthy snack. Manufacturers are formulating and positioning their products focusing on health as well as taste aspects.

According to Euro-monitor, the global market for sports nutrition was valued at US \$4.6 billion in 2009. Growth was nominal from 2004-2009 and reached a plateau in 2009. Overall, the sport nutrition market has been affected by the global economic recession, particularly in the U.S., which accounts for approximately two-thirds of the consumers in the market. The market for sports drinks has reached maturity, whereas there is growth opportunity in sports and energy bars as they expand their product attributes to attract new consumers.

The sports nutrition market is also witnessing a shift from major markets (North America) towards developing markets in Europe and Asia Pacific. Due to their high population, countries such as India and China offer huge opportunities in the future. Furthermore, low per capita consumption and upcoming high profile sporting events allow sports nutrition companies to establish themselves in these markets. These companies have already started developing new products and flavors, in line with the shift in consumer groups and market regions.

Major growth challenges for the sports nutrition market include threat of substitutes and negative publicity about the inclusion of banned/forbidden ingredients. Furthermore, changing consumer preferences and expansion of distribution channels are other growth inhibitors for the sports nutrition market.

Developed regions such as the U.S. and countries in Europe have been the dominant market shareholders. However, as consumers in developing nations are increasingly spending their income on health and health related products, these economies are expected to pose a serious challenge to the supremacy of developed economies. Organizing high profile sports events in these countries is further expected to escalate the demand for sports nutritional products in these sports nutrition markets.

The report covers in-depth analysis sports nutrition market, by product segment (Sports Food, Sports Drinks and Sports Supplements) for the period from 2010 to 2019. In addition, the current market dynamics including the drivers, restraints, trends and recent developments have been captured throughout the report. North America region covers the sports nutrition market scenario in the U.S. and Canada. Europe region covers the sports nutrition market scenario of the U.K., Germany, Italy and France. Asia-Pacific region highlights the sports nutrition market scenario in Australia, Japan, India and China.

The Competitive Landscape section of the sports nutrition market report includes the positioning of different companies on the basis of their geographical presence and product offerings. Some of the major

players in the sports nutrition market are Maxinutrition, Glanbia, PepsiCo, Coca-Cola and Clif Bar and Company. The company profiles include attributes such as company overview, financial performance and recent developments.

**Market challenges:** Food manufacturers entering the sports nutrition market will encounter numerous challenges, ranging from the need for continuous innovation, to expanding distribution channels, to competition from substitute products within and outside the sports nutrition market. To be competitive, companies will need to move from specialized distribution channels such as health clubs, health stores and on-line shopping, to mass consumer marketing in supermarkets and convenience stores. Companies will need to constantly innovate to meet the consumer's growing demand for the latest and most effective ingredients.

In addition, food manufacturers must be able to gain consumers' confidence in the efficacy of new ingredients. Sports food will be met with a strong competition from meal replacements and other slimming products. In addition, sports bars will be met with direct competition from breakfast/cereal bars and confectionery products. Sport beverages are a mature market dominated by Pepsi and Coca-Cola, making it a very difficult market to penetrate. Sports food, beverages and supplements are also all in competition with one another, creating additional challenges for companies as they attempt to differentiate their products.

**Ways for green brand development in sports nutrition food:** As we have said, promotion in health awareness has a great impact on the consumption of sports nutrition food. In order to lead a healthy life for people and gain a long-term development for sports nutrition food companies, we should guarantee that our sports nutrition products are good for human health. Health means high-quality food and green food. Here, we give out several key suggestions for the development of green brand in sports nutrition food.

**Balancing technology push with consumer pull:** Consumer goods companies' innovation and research focus is driven by a mixture of "technology push" and "consumer pull". Technology push in this context means what their access to technologies, patents and production facilities enables them to do in terms of creating new products, while consumer pull means the preferences of consumers-which may be very different from what technology can deliver. Balancing these two is a continuous process and there are no easy solutions. Over the last 15 years most companies have learnt that allowing technology push to dictate their activities has resulted in products that fail in the marketplace-and around 80% of all new foods and beverages with health benefits are withdrawn within 2 years of launch.

Ingredient companies, by contrast, are still very strongly "technology push" oriented. This isn't surprising as they are upstream from the consumer and own no consumer brands of their own and they are grounded in science and technology-in fact senior executives often have no direct experience of business-to-consumer markets.

The approach of these companies can be summarized as creating or acquiring technologies, developing them and then trying to find or create markets for them. Ingredient companies often (usually) place thinking about the consumer and how to deliver their technology to the consumer at the end point of their R and D efforts-while by contrast consumer goods companies try to balance consumer needs and technology at every stage in the development process.

Ingredient companies' "technology push" approach has contributed to the high rate of failure as they "push" technology into the consumer market before:

- Establishing how it should best be commercialized
- Whether it meets any real consumer need
- How the consumer can best be educated about its benefits

One example of this technology push approach is the way in which ingredient companies pushed marine-source omega-3 (DHA/EPA) to consumer goods companies, encouraging them to prematurely launch omega-3 fortified foods and beverages (before consumer issues with omega-3 had been properly resolved). As a result most omega-3 foods and beverages have failed in the marketplace, with companies such as Danone and Mueller Dairy removing omega-3 from many brands' formulations.

**Finding a place in "senior" nutrition:** It's worth beginning by focusing on the "seniors" nutrition because it is arguably the most important both in terms of its influence on R and D strategy and also in terms of its market impact. The consumer need is clear and the opportunity is growing with the ageing population. "Senior nutrition" is a term that encompasses a wide array of health benefits-and in fact almost every benefit area is one in which "seniors" form a large (even dominant) part of the potential target market. What has also emerged very strongly is that seniors (taking as many companies do a definition of people over the age of 50) already are the single largest group of buyers of products with health benefits.

Most major companies' research focus is on delivering more products-across a wide range of benefit platforms-that will appeal to one or more of the above segments. In effect, seniors drive the food and health market and their needs to a large extent set the research agenda. The 70-80+ age groups are an under-served opportunity and hence medical nutrition companies are increasing their focus on these segments, using the

products and technologies they supply into the hospital and aged care home markets. This is resulting in medicalized products moving into the pharmacy channel. An example is BeneVia, a range of nutritional drinks which is a joint venture between Danone Medical Nutrition and HealthSpan Solutions.

**Developing healthy and convenient nutritional products:** Emerging trends in sports nutrition products are focused on providing consumers with new sensory experiences, leveraging new technology and developing healthy and convenient nutritional products. Food manufacturers are bringing new experiences to energy and nutrition bars through new formats and new flavors and by combining the desire for indulgence and health with day-to-day consumption. Energy bar manufacturers are re-positioning their products to offer similar benefits as energy and sport drinks, without their usual caloric content. Augmenting the indulgence element of sport and energy bars is also becoming more important, with the industry placing more emphasis on decadent flavors, such as chocolate and new and exotic fruit flavors, to boost product appeal and complementary health benefits.

Leveraging new technology is an important trend within the category; products with features such as faster absorbing ingredients, compounds with electrolytes and amino acids are examples. These products can be found in either a powder or tablet format. Sports nutrition started with simple powder formats, but convenient packaging is playing an increasingly important role. Ready-to-drink formats and bars are easy to carry and consume on-the-go. Pouches and gels represent the latest development to hit the market and appeal to consumers because they are lighter to carry and ideal for just one workout session.

Health-orientated innovation in the global snack bar market is expanding from traditional vitamin enrichment to more advanced benefits, such as antioxidant fortification, high levels of whey protein fortification for sports nutrition and energy-boosting purposes and sophisticated weight management products. Snack bars fortified with soy protein still represent an emerging category with substantial opportunities, targeting recreational and lifestyle users. New products combining indulgent flavors and ingredients with purported health benefits are also gaining traction, as is investing in and developing healthy lines that target children and women.

## CONCLUSION

In this study, we first introduced the sports nutrition food and then analyzed the sports nutrition market. In the end, some suggestions on green brand development in sports nutrition food were given out. With the

promotion in health awareness, more and more people prefer to choose the green and healthy sports nutrition food. It is obviously a challenge for food companies, but a potential opportunity as well. In the fierce competition environment, promoting the green brand for sports nutrition food seems to be a better choice for most food companies.

Developing the green brand for sports nutrition food means to manufacture healthy and high-quality food. To meet this challenge, leveraging new technology is an important way. However, the cost for introducing new technology should be considered. Therefore, we must balance technology push with consumer pull. Besides, finding a place in "senior" nutrition and developing healthy and convenient nutritional products are very pivotal for food companies. All in all, green and healthy sports nutrition food opens up a sustainable development road for food companies.

## ACKNOWLEDGMENT

The authors wish to thank the helpful comments and suggestions from my teachers and colleagues in intelligent detection and control lab of HIT at Weihai. And also thank Beijing Up-tech to provide part hardware. This study is supported by the study fund of HIT at Weihai (No. IMVQ02020003 and IMJQ 21080002).

## REFERENCES

- Atkinson M., 2007. Playing with fire: Masculinity, health and sport supplements. *Sociol. Sport J.*, 24: 165-186.
- Baghurst, T., 2012. Muscle dysmorphia and male body image: a personal account. *New Male Stud. Int. J.*, 1(3): 125-130.
- Bartee, R., B. Grandjean, M. Dunn, M. Perko, J. Eddy and Q. Wang, 2004. Predictors of dietary supplement use among adolescent athletes. *Pediatr. Exerc. Sci.*, 16: 250-264.
- Bjelland, A.K., 2008. Hav og helse. Markedsføring og konstruksjon av rom og sted. *Norsk Antropol. Tidsskr.*, 1(19): 54-68.
- Bristor, J., 1988. Coalitions in organizational purchasing: An application of network analysis. *Adv. Consum. Res.*, 15: 563-568.
- Halkier, B., 2004. Handling Food-related Risks: Political Agency and Governmentality. In: Lien, M. and B. Nerlich (Eds.), *the Politics of Food*. Oxford, Berg, pp: 21-38.
- Utaker, A., 2005. Michel Foucault om liberalisme og nyliberalisme. *I Sosiologi i Dag*, 2: 9-31.