Common Misconceptions in the Nutritional Management of Athletes

Abstract: *Athletes today face a multitude of competing voices with health claims and products to enhance performance. This has led to both confusion and misconceptions about healthy dietary practices for athletes. Research has demonstrated that athletes do not understand the recommended nutritional requirements necessary for health. Further, improper study methods and research design can create and propagate misconceptions about how athletes view their own health and personal sacrifices. These misconceptions not only influence attitudes and recommendations by healthcare providers and coaches but can also affect legislation. Healthcare providers, coaches and trainers have the opportunity to positively influence healthy nutritional lifestyles in athletes. Research has demonstrated that the balance of expert power and referent power have been shown to emphasize personal empowerment and long term change.*

Keywords: plant based athletes; athlete nutrition; athlete optimal performance; healthy athlete

During my career working as a team physician for Division 1 College and Olympic athletes, I

have at times struggled to find the most effective method to educate and influence athletes to implement healthy dietary practices. And as a point of full disclosure, when I was on the 1994 Olympic Bobsled team I ate all of the wrong food believing that I possessed a better than average understanding of nutrition. At that time, I believed that a Snicker's bar was a good protein source; milk, eggs, and meat helped grow muscle; and that sugar and ice cream could be consumed freely without

the sport, to win, the thrill of achieving goals, to overcome past pain or insecurity, for belonging, for the praise of parents or others, identity, and individual recognition to name just a few. The internal motivational forces are combined with the numerous external forces at work to shape and influence the athlete's choices. The mind of the athlete is barraged by information from coaches, trainers, family, friends, successful athletes, agents, and the sports nutrition industry. This diverse mixture of voices

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consequence because I was exercising intensely. This experience and perspective helped me understand the mind of the athlete and the identify some of the blind spots that are present when you are young, strong, agile, fast, and seemingly invincible.

Athletes are a unique population with important differences; however, the fundamentals of influencing behavior change are still applicable. Athletes compete for many reasons; the love of

can lead to nutritional confusion, nutritional myth, and ultimately nutritional inadequacy.

Three common misconceptions that will be briefly addressed in the body of this article are the following:

1. Athletes have a solid understanding of their nutritional needs
2. Athletes are willing to sacrifice their health and future for success—the Goldman's dilemma

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3. Expert power is the best way to influence an athlete to change

Misconception: Athletes Understand Their Nutritional Needs

The culture of sports nutrition is steeped in misinformation, a myriad of supplements, protein drinks, and “best” dietary practices for performance. In one study, 98% of high school coaches surveyed reported advising their players on how to gain lean body mass through dietary strategies with protein consumption listed as the most important food group.¹ The most salient question that was not asked in that study is, “Where and what are coaches learning about optimal nutrition for the athlete?”

The adolescent athletic population is the most impressionable and thus at risk for inadequate nutrition during their primary growth years. Researchers evaluating the nutritional education of adolescent athletes concluded,

Adolescent athletes are neither aware of nor prepared for the dual demands of sound nutritional practices and those demanded of sport activities. The dietary practices of young athletes fail to meet the energy requirements for high performance and may also threaten their well-being.

And with regard to the composition of their diet, “students were consuming excessive fats and sugars, and failed to recognize nutritional practices critical to the demands of athletics.”²

Knowledge is not the primary factor that influences positive behavior change in athletes, and the association between knowledge and nutritional intake is influenced by a multitude of factors.³ Adolescent attitudes toward their diet are significantly influenced by a variety of intangible dynamics including self-image, peer influence, convenience, affordability, and taste.⁴ Overemphasizing nutritional information without addressing the other motivational factors does not produce sustainable, long-term behavior change.

Are college athletes better educated and making better choices? A survey of Division 1 varsity college athletes discovered that only 3% of men and 11.7% of women correctly identified recommendations for the correct percentages of protein, fat, and carbohydrate. Only 37% correctly listed the role of vitamins and 54% the role of protein.⁵ The findings of the survey prompted the researchers to conclude, “Despite previous recommendations regarding nutrition education of high-level athletes, diminutive changes have occurred in the past 6 years.”

Why is there a dearth of nutritional knowledge among athletes? One reason may be that the scientifically credible recommendations are not guiding the food choices of college athletes but instead they are obtaining their nutritional information from a variety of resources that include in rank: 1, popular magazines; 2, trainers; 3, friends; 4, college courses; 5, strength and conditioning coaches; 6, sport-specific coaches; and 7, parents. Coaches, trainers, and college courses may be the most reputable sources but the scientific credibility of their recommendations and the quality of their advice is unknown.⁶ Athletic trainers were more likely to attend workshops and use textbooks on nutrition to guide their recommendations, but neither group scored above 64% on a basic nutritional survey.⁷

The absence of clear nutritional guidance puts some groups of athletes at greater risk for nutritional deficiencies that have immediate and long-term health consequences. For example, female collegiate cross-country runners, one of the at-risk athletic groups, lack the necessary nutritional knowledge critical to the prevention of nutrition-related health problems.⁸

The nutritional confusion evident at all levels of athletics and secondary health consequences highlight the need for a clear, credible, and authoritative voice to help provide credible dietary advice that optimizes performance and long-term health.

Misconception: Athletes Are Willing to Sacrifice Their Health and Life and Future for Success—The Goldman's Dilemma

Poor study design and faulty assumptions can initiate and perpetuate scientific misconceptions. If the conclusions are publicized widely, a scientific misconception can be misconstrued as fact and may ultimately influence policy.

In 2016, the CEO of UK Anti-Doping was questioned in a parliamentary inquiry about the effects of criminalizing doping to help deter athletes from using performance-enhancing substances. She responded by quoting a study to validate her position, saying,

There was one study where a group of athletes or sportspeople were asked, “This is a magic pill and, if you take this magic pill, it will assure you that you can win your competition event. You will be top of the game, would you take it?” Startling, over 50% said of course they would take it. You then overlay that with, “If we then told you that in five years’ time, as a consequence of taking that magic pill, you would die would you still take it?” You would expect the response rate to drop significantly but, no, it didn’t. So I could equally argue that a criminal charge or death—if you are prepared to dope I wonder if either of those two are something that you would consider.”⁹

She was referencing an idea that has been perpetuated in athletic academic circles initially described in a study that quickly came to be described as Goldman's dilemma. The study reported that more than 50% of athletes would be willing to die to achieve a gold medal. The original publication was in the *Sports Medicine Handbook* in 1978 with the quote appearing on page 84,

A few years ago I polled more than a hundred top runners and posed this question: “If I could give you a pill that would make you an Olympic Champion—and also kill you in a year—would [you] take it?” To my

amazement, more than half of the athletes responding stated that they would take my magic pill.¹⁰

This unpublished study and broad generalization was perpetuated through the athletic circles and soon took on the appearance of science. Fueled by this concept, another study asked 103 athletes the question,

If I had a magic drug that was so fantastic that if you took it once you would win every competition you would enter, from the Olympic decathlon to Mr. Universe, for the next five years, but it had one minor drawback—it would kill you five years after you took it—would you still take the drug?

Reportedly 52% answered in the affirmative. For nearly 2 decades this science was quoted in academic journals and textbooks of sports medicine and influenced doping legislation.

Finally, in 2013 a new scientific study revisited the original premise with more robust methodological framework. They found only 2/212 or about 1% would take the Faustian bargain offered in the original study.¹¹ Further research evaluated the cognitive plausibility of the original study and found that the basic presuppositions of the hypothetical scenario were implausible and should not be considered relevant.¹²

Sports science is now embracing more rigorous research standards and in the process dispelling misconceptions like the Goldman's dilemma. It is important to remember, however, that for nearly 2 decades leading researchers quoted this study and its history should motivate us to evaluate the methods and conclusions of each study.

Misconception: Expert Power Has the Greatest Influence on Athlete Behavior

Influence is defined as the capacity to have an effect on the character, development, or behavior of someone. Frequently, in our information-based

economy, the expert is viewed as the individual with the greatest opportunity to effect change. The perception is that more knowledge and more information will result in greater change.

John French and Bertrand Raven (1959)¹³ identified 5 sources of power/influence in leadership: (1) expert power defined as the unique knowledge and skills that influence opinion; (2) referenced power originates in a cultivated, trusted relationship; (3) reward power is the ability to allocate incentives; (4) coercive power is the authority to punish or reprimand; and (5) legitimate power is positional power earned and recognized. Expert power, commonly ascribed to physicians, is influential when others perceive them to be credible, trustworthy, and relevant.¹⁴ However, influential leaders do not rest solely on expert power as the primary source of influence.

A survey of coaches working with elite athletes identified expert and referent power as the most important factors for influencing athletes.¹⁵ Coercive power and legitimate power, associated with organizational position, have been negatively associated with learning, while referent power and expert power improved learning and performance.¹⁶ Furthermore, the balance of referent power and expert power is the most effective method for influencing long-term behavior change and maintenance of healthful habits.¹⁷ Effective leadership that produces positive change and influences healthy behaviors is rooted in the balance of expert power and referent power emphasizing personal empowerment.¹⁴

Conclusion

The health care professional working with athletes has a unique opportunity to educate and influence healthy lifestyles. The professional can proactively influence nutritional and lifestyle patterns that optimize performance and health through a cultivated and trusted relationship built on balanced referent power and expert power, the careful examination of

research, and judicious use of trustworthy science.

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