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INSINUATION OF DIET AND NUTRITION FOR SPORTS PERFORMANCE

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Abstract

Every Sportsman/Athlete needs to be aware of their personal nutritional goals and how they can select an eating strategy to meet their goals. A good diet helps and supports to Sportsman/Athlete in adapting training stimulus and to acquire stability in consistent intensive training, which in turn reduces the risks of illness or injury. The competitive athlete has a need to make aware of the role of the diet and nutrition which plays important role in both training as well as individual sports performance. The paper attempts to discuss about the diet and its management.

Key words: *Diet, Nutrition & Sports performance*

INTRODUCTION

Every Sportsman/Athlete needs to be aware of their personal nutritional goals and how they can select an eating strategy to meet their goals. A good diet helps and supports to Sportsman/Athlete in adapting training stimulus and to acquire stability in consistent intensive training, which in turn reduces the risks of illness or injury. Every player is different, and there is no single diet that meets the needs of all players at all times. Individual needs also change across the season and players must be flexible to accommodate this. Whenever highly talented, motivated and well trained players meet in competition, the margin between victory and defeat is small.

The diet, fluid and exercise are essentials for the healthy life. In the modern era of the sports competition, the sportsman concentrates more on exercise, training and body built up, but the overall performance is completely dependent on

the pre-during-post diet management. While training, physical fitness is directly linked with balanced diet such as carbohydrates, proteins, fats, vitamins/micronutrients and optimum fluid intake (FCPFM). Well balanced diet with help of Athletes RDA is essential for peak performance in the field of sports, besides other factors like motivation, skills, techniques, commitment, physical fitness and training. The competitive athlete has a need to make aware of the role of the diet and nutrition which plays important role in both training as well as individual sports performance.

History of Sports Nutrition

Documentation on “special” foods and nutrition strategies for sports performance History says! Way back in 300 BC Greek Olympians used specific mushrooms to enhance performance. Dutch swimmers used caffeine before races in 1800’s whereas, Belgium

swimmers dipped sugar cubes in ether before racing.

“A balance diet is defined as the various types of nutrients having adequate proportion of fluid intake, carbohydrates, fats, proteins, and Vitamins/minerals (FCPFM) to meet the body requirement for growth, physical and mental stability”.

Nutrition is the science of food and its interaction with an organism to promote and maintain health. Thus, nutrition is a combination of process by which all parts of the body receive and utilize the materials which are necessary for the performance of their functions, growth and renewal of all the components (Rejuvenation).

The sportsman/Athlete has to strongly ponder on diet management for better performance in sports competitions. In view of sportsman, balanced diet is nothing but termed as sports nutrition. Nutrition in sports applies equally to the elite athlete and the active person. A solid sports nutrition plan can support to improve their training and performance, all while promoting health and wellness. Eating right allows sportsman/athlete body to adapt to training, helps them to recover after exercise and attain peak performance. Although, the training, hard work and body built up also matters a lot, but to keep consistency till the game finishes requires fuel (Carbohydrates). In order to take athletic abilities to the highest level the body must have energy. Knowledge, planning, and preparation of nutrition in sports are vital key to **hit the highest point**. Thus, a sports dietitian can help them to develop personalized pre-during-post eating plans to meet the needs for their individual game.

Most of the Athletes don't know about what to eat? When to eat? How much to eat? What to choose when eating out? How to achieve weight goals the

RIGHT way and the Facts about supplements?

The athletes must focus on following diet priorities... (FCPFM)

- **Fluid** needs
- **Calorie** needs
- Adequate **Carbohydrates**
- Increased **Protein** especially for strength & endurance athletes
- Adequate **Fat**
- **Micronutrients** (vitamins and minerals, such as calcium & iron)

FCPFM KEY FOR SPORTS PERFORMANCE

Carbohydrates:

Carbohydrate is key nutrient for athletes which provide the major fuel, especially during prolonged and strenuous exercise. The body has a limited capacity to store carbohydrate (as glycogen in the muscle and liver) and stores must be replenished regularly to provide immediate energy to muscles. Low body stores of carbohydrate can result in fatigue, impairment of performance at training or during competition, and a negative impact on the immune system.

Good sources: Whole grains like whole-wheat breads, brown rice and pastas, Fruit, Dairy products, Energy bars, & Sports drinks

Protein:

Proteins are needed for transfer of nutrients in the blood stream, gases exchange to meet oxygen, muscle strength, and the repair of tissues in response to periods of exercise. Endurance athletes undertaking heavy training may require extra protein to cover a proportion of the energy costs, to repair and recovery after a workout. Additional protein intake is required for athletes to increase muscle size and strength in response to resistance training.

Good sources: Lean meat, poultry and fish, Fat-free or low-fat milk, yogurt and

cheese, Eggs, Legumes (lentils, black beans, pinto beans, and dried peas), Soya products.

Fat:

Fat is important for energy production, protecting organs, providing insulation to the body, facilitating essential fatty acid and fat-soluble vitamin uptake. During sub-maximal exercise, fat and carbohydrate are both fuel sources. Very low-fat diets are not recommended because they can lead to a shortage of some nutrients and can hurt Sportsman/athletes performance.

Good sources: Fish, Nuts, Nut oils, Seeds, Vegetable oils and spreads made from a vegetable-oil base

Micronutrients:

Micronutrients are essential players in metabolic pathways to generate energy, hemoglobin synthesis, bone health, immune function and antioxidant activity. Micronutrient needs can be met, through athletes consuming a high energy and balanced diet.

Hydration:

Water is essential for maintaining hydration of muscles, regulation of body temperature, cushion & protects vital organs, aids digestive system, acts within each cell to transport nutrients and dispel waste.

Dehydration:

During sports performance sensible and insensible water loss leads to Dehydration in turn causes muscle fatigue, loss of coordination and may hinder athletic performance. In a dehydrated state the body is unable to cool itself efficiently, leading to heat exhaustion and possibly heat stroke. Inadequate intake of water to the body will lack energy and muscles may develop cramps. Therefore, proper hydration protects during training and sports performance from adverse consequences of dehydration.

PHASES OF DIET MANAGEMENT

Phase I (Pre-competition):

Taking food 30 minutes to 4 hours before activity will be beneficial for muscles and brain to attain energy saturation state for better performance. It maintains the blood sugar level for muscles to use energy and keeps sportsman/athlete free from feeling hungry before and during the event. This leaves him or her neither hungry nor with undigested food in the stomach.

Phase II (During Competition):

Sportsman/athlete has to focus actively on fluid intake during competition to replace fluids lost through sweat. Sportsman/athlete should carry their own water bottle supplied with dissolved Carbohydrates (releases immediate energy) & electrolytes (replenish lost electrolytes through sweat). Sports drinks have added edge of carbohydrates for energy and provide some electrolytes.

Phase III (Post-Competition):

The most important phase in regard to sports nutrition is post competition meals (Recovery phase). It allows the body to replenish muscle glycogen breakdown and assists with muscle building and repair. After a workout, carbohydrates and fluids can be replaced with fruit juices.

Iron and Calcium for a female athlete

Iron is important for carrying oxygen in the blood so even a mild deficiency can affect performance. Some women have very high iron requirements due to heavy menstrual losses.

Calcium is important in the formation and maintenance of strong bones. Although moderate exercise is important in bone formation, very strenuous exercise can interrupt the menstruation cycle and cause a hormone imbalance which can lead to problems with bone health. It is therefore important that female athletes' diets contain adequate calcium & Iron intake.

PLANNING OF SPORTS NUTRITION FOR COMPETITION

1. Pre-game:

- Plan meal 2-4 hours before the game
- Low in fat and fiber to reduce gastric upset
- Replenish glycogen by carbohydrates
- 1-2 gms/kg Carbohydrate with 15-25 gms/kg of body weight lean protein
- Pre game snacks 30 minute to 1 hour before the game
- 1 gm Carbohydrate/Kg of body weight
- Good time for sports drinks or juice, or low protein energy bar
- Water intake throughout the day should remain a priority

2. During-Game:

- To focus during competition is to actively replace fluid lost through sweat
- Better to Carry water bottle
- Primary intake of carbohydrates should come in the form of *sips* of sports drinks if, the competition lasts more than 1 hour
- Sports drinks that supplement electrolytes lost through sweat are beneficial, but often over used

CONCLUSION

Diet is of great importance to athletes, the key to achieving an optimal sports diet in relationship to peak performance and good health. Athletes must fuel their bodies with the appropriate nutritional foods to meet their individual energy requirements in the competition, training and recovery. If these nutritional needs are not met, there is an increased risk of poor performance and health issues. You can easily meet these needs with a nutrient-dense, well-balanced diet. A sports dietitian can assist you in developing personalized eating plans to meet the needs of your sports.

“Sports Nutrition is the key energy providing nutrient that must be optimized during the days leading up to and including the day of competition to be a champion of champions”

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