



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 5.2  
IJAR 2015; 1(11): 107-110  
www.allresearchjournal.com  
Received: 15-08-2015  
Accepted: 16-09-2015

**Dr. Monika Verma**  
Associate Professor  
Department of physical  
education, C.D.L.U., Sirsa,  
Haryana,

**Sanesh Kumari**  
Research Scholar,  
Department of physical  
education, C.D.L.U., Sirsa,  
Haryana

## Supplements for Shot Putters

**Monika Verma, Sanesh Kumari**

### Abstract

The throwers required speed, strength, power and a wide variety of skills to be successful in this events only a handful studies have assessed the nutritional needs of such shot-putters because of this recommendation for nutrition requirements to supports and enhance training as well as competition performance the goal of preparation cycle of nutritional periodization for the shot putters include attacking desirable body weight, high ratio of lean body mass and improved muscle power. Carbohydrate to take as it provides adequate fuel, for energy demands during competition or adequate intake of meet proteins synthesis and turnover need. Always consume effective supplements. Translating these supplements and dietary recommendation in to guideline for shot putters during training is important for performance.

**Keywords:** Nutrition, Shot putters, supplements, carbohydrate, protein, energy.

### Introduction

#### “Runners run by hand & throwers throw by leg.”

Throwers need to consume sufficient carbohydrate to fuel training needs; however carbohydrate requirements do not reach the level of speed or endurance-type athletes. Throwers need to be mindful of eating sufficient variety and quantity of food to meet nutritional requirements and promote recovery between sessions. Diets need to be nutrient-dense. Moderate portions of lean sources of protein such as lean meat, skin-free chicken, eggs; low-fat dairy foods, lentils and tofu should also be included in moderate amounts throughout the day.

Throwers, jumpers, and combined events athletes require speed, strength, power, and a wide variety of technical skills to be successful in their events. Only a handful of studies have assessed the nutritional needs of such athletes. Because of this, recommendations for nutritional requirements to support and enhance training and competition performances for these athletes are made using research findings from sports and exercise protocols similar to their training and competitive events.

The goals of the preparation cycle of nutrition periodization for these athletes include attaining desirable body weight, a high ratio of lean body mass to body height, and improving muscular power. Nutritional recommendations for training and competition periods include:

- Meeting energy needs
- Timing consumption of adequate fluid and electrolyte intakes before, during, and after exercise to promote adequate hydration
- Timing consumption of carbohydrate intake to provide adequate fuel for energy demands and to spare protein for muscle repair, growth, and maintenance
- Timing consumption of adequate protein intake to meet protein synthesis and turnover need
- Consuming effective nutritional and dietary supplements. Translating these nutrient and dietary recommendations into guidelines these athletes can apply during training and competition is important for enhancing performance.

#### Why do sports nutrition is important for shot putters?

Athlete is the sports of speed, strength, which requires extreme nutrition because thrower group requires maximum strength. In the speed strength sports shot putters needs more

**Correspondence**  
**Dr. Monika Verma**  
Associate Professor  
Department of physical  
education, C.D.L.U., Sirsa,  
Haryana,

supply of energy. The main source of energy for shot putters is breakdown of creative phosphate and glycol sis (anaerobic glycogen breakdown). Total energy consumption in a shot putter is 72-76 Kcal/kg of body mass.

Important supplements and their important for shot putters

### Carbohydrates

Carbohydrates are the main source of energy and it is made up of chains of sugar molecular, carbohydrates contain about 4 cal/ gm a monosaccharide is a simplest form of sugar. The three mono saturides are glucose, fructose and galactose. Glucose is the work of building block and fructose is a fruit sugar, carbohydrates consumed in diet which is not immediately use for energy as a glycogen. "Throwers does not deplete glycogen store and therefore carbohydrates loading before a competition is not necessary. Carbohydrates are broken down by the body into glucose. This glucose is then stored in the muscles and liver as glycogen, which is a ready source of energy. Chemical reactions involving glucose or glycogen produce ATP. Sugars (simple carbohydrates) can provide muscle glycogen, but the best sources come from complex carbohydrates, such as grains, cereals, breads, legumes and vegetables. One gram of carbohydrate yields approximately 16 kilojoules of energy when broken down.

### Fats

Triglyceride, which is found in fatty foods, is the digested form of fat for energy production. Triglycerides are stored in the muscles and are broken down when needed during exercise to produce glycerol and free fatty acids. Free fatty acids are the primary energy source when fat is used for energy. They can be stored in fat cells and in muscles. Fatty acids can be stored as adipose tissue (body fat) or they can travel around the body in blood. These substances can produce ATP, but are usually used only at lower intensities over longer periods of exercise. One gram of fat yields approximately 37 kilojoules of energy when broken down. Omega -3 or omega-6 much more important for shot putters it contains fatty acid.

### Proteins

**Protein.** Protein provides amino acids which play key roles in formation and turnover of protein in the body and also provides energy. Power male athletes doing serious resistance exercise can meet their protein needs in the early phase of training by consuming 1.5 – 1.7 g of protein·kg-1 of body weight ·d-1 and in an established training program with 1.0 – 1.2 g·kg-1·d-1 (Lemon, 2000; Tarnopolsky, 2006; Burke, 2007) <sup>[7, 9]</sup>. Highly trained athletes with periods of large and intense training loads who consume a maximum of 1.7 g·kg-1·d-1 will adequately meet their protein needs (Tarnopolsky, 2004). These protein guidelines should also meet the needs of the female athlete too. Recommending the exact amount of protein needs for individual athletes is controversial. A recent review on the controversy indicates that determining a research-based consensus for the protein needs for athletes is unrealistic because many factors influence their protein needs (Tipton and Wizar, 2007). Two factors are important for making individualized recommendations for protein intake. First, overall energy needs must be met to allow ingested protein to be available for muscle repair, maintenance and growth (Tipton and Wolfe, 2004; Tipton and Witard, 2007). Second, timing of

protein intake is important for influencing the anabolic response of muscle in relation to exercise.

**Vitamins and Minerals.** Research assessing vitamin and mineral intakes of athletes, has been limited because it has been conducted mainly in female populations and only evaluating a few types of sports (Volpe, 2007). Without vitamins and minerals shot putter growth and development are not possible. The shot putters has high devastating effects on their bones and joints which can prevent by consuming minerals and vitamins. A recent review on the topic indicates that dietary calcium is often low in diets of male athletes, while dietary calcium and iron intakes are low in female athletes (Volpe, 2007). The only identified study evaluating the diet of combined events athletes reported that female heptathletes did not consume adequate vitamin E (Mullins *et al.*, 2001). Without adequate research-based information on the vitamin and mineral intakes of jumpers, throwers, and combined events athletes, definitive conclusions about their ability to meet their needs for these nutrients from dietary sources cannot be made.

### Creatine

- Creatine supplementation may help athlete in high intensity short duration activities, such as sprints and its field events like shot put, javelin throw, Discuss throw.
- Creatine may help you to recover more quickly from weight training sessions, which could help you to train harder.
- Creatine is responsible to increase the muscle size and due to more workouts a shot putters requires more amount of creatine.

### Calcium

Calcium is important for achieving and maintaining optimum bone density. Some athletes, especially women with low body weight and/or amenorrhea, are at risk for serious bone loss and fractures. Contributing to this risk are the diets of these athletes, which are frequently deficient in calcium. All athletes should try to achieve the recommended intakes of calcium, which are 1,300 mg per day for teenagers and 1,000 mg per day for adults. Other uses of calcium for sports and fitness, including prevention or relief of sports-related muscle cramps, have not been studied. Some studies have shown that calcium competes for absorption with a number of other minerals, while other studies have found no such competition. To be on the safe side, some doctors recommend that people taking calcium for long periods of time should also take a multimineral supplement. One study has shown that taking calcium can interfere with the absorption of phosphorus, which, like calcium, is important for bone health. Although most western diets contain ample or even excessive amounts of phosphorus, older people who supplement with large amounts of calcium may be at risk of developing phosphorus deficiency. For this reason, the authors of this study recommend that, for elderly people, at least some of the supplemental calcium be taken in the form of tricalcium phosphate or some other phosphorus-containing preparation.

### Iron

Iron is required for a number of key functions in the body for shot putters:

- Iron is an important in transporting oxygen in the blood and in the muscles.

- Iron is involved in the electron transport system. This system controls the release of energy from cells.
- Iron is required for red blood cell production.
- Iron is required for a healthy immune system

Inadequate iron in the body can impair aerobic metabolism by decreasing the delivery of oxygen to tissues and reducing the capacity of muscles to use oxygen for the oxidative production of energy. All shot putters taking iron supplements should have iron status monitored due to the potential association between iron status and chronic disease.

### Zinc

Zinc is involved in literally every phase of growth, cell reproduction and tissue repair.

Obviously, that's why it is one of the most important minerals in sports nutrition.

Bodybuilders go for growth and every workout causes micro-injuries to your muscles.

No matter which sport you are in to, recovery and tissue repair will always be important. The zinc supplements are therefore recommended for shot putters.

### Preparation for Competition

Shot Putters events do not deplete glycogen stores and therefore carbohydrate loading before a competition is not necessary. Rather, the elite thrower should continue to follow a meal plan similar to that used in training. A slightly lower total energy intake may be required, given that energy needs are not as high as training loads taper off in the days prior to competition. The support of a dietitian in preparing a competition nutrition plan can be particularly valuable in getting the fuel supply right.

### Competition Day Food and Fluid

On the day of competition, the priority is intestinal comfort - avoiding hunger but not risking the discomfort of a full stomach. The type of meal will depend on the timing of the event (including qualifying round and final) and personal preferences.

The following foods are suitable to eat 3-4 hours before exercise:

- ❖ crumpets with jam or honey + flavored milk
- ❖ baked potato + cottage cheese filling + glass of milk
- ❖ baked beans on toast
- ❖ breakfast cereal with milk
- ❖ bread roll with cheese/meat filling + banana
- ❖ fruit salad with reduced-fat yoghurt

**The following foods are suitable to eat 1-2 hours before exercise:**

- ✚ liquid meal supplement
- ✚ milk shake or fruit smoothie
- ✚ reduced-fat yoghurt
- ✚ fruit

Suitable choices may not be available at the competition venue. As such, athletes should be encouraged to bring along their own supplies of food and fluid for the day ahead. Experiment with any new nutrition regimes in training, to ensure normal routine on competition day. Take care to drink adequate fluid when competing in hot weather.

### Top three nutrition tips to improve performance

- Learn to eat well before, during and after events.
- Eat carbohydrates to refuel after training or competition.
- Follow a fluid schedule and stick to it.

### Conclusion

Sports nutrition for shot putters plays an important role in achieving high performance. Sports supplements for shot putters are becoming increasingly scientific and recognized for its importance in shot- put. This article covers the most important principles of sports supplements for shot putters.

### Recommendations for

- ❖ Food and fluid intakes need to be individualized for each athlete because nutrient needs vary with body weight, periods of training preparation, competition schedules, transitions and the off-season
- ❖ Changes in body weight and composition should be attempted before or after the competition season
- ❖ Fluid losses should be limited to <2% reduction of euhydrated body weight by consuming appropriate amounts of fluid before, during and after exercise
- ❖ The athlete should rehydrate after exercise training and at the end of competition days by consuming enough fluid and sodium to replace body fluid and sodium losses and to have a pale yellow colored urine.
- ❖ Protein and carbohydrate needs vary with individual body weight and with the intensity and duration of training periods
- ❖ Protein and carbohydrate needs, even for high intensity and long duration strength training exercise loads, can be met by food sources
- ❖ Protein supplements provide convenient sources of protein but the protein is not superior to the protein in foods.
- ❖ During training sessions of moderate-intensity or intermittent exercise that lasts longer than one hour consuming carbohydrate will help replace glycogen stores.
- ❖ Following exercise, consuming adequate amounts of carbohydrate will speed up the rate of replacement of glycogen stores
- ❖ Dietary Reference Intakes for vitamins and mineral should be attained
- ❖ Dietary supplements that have demonstrated efficacy can improve speed, strength, and power can potentially benefit performance
- ❖ Translating research based recommendations for nutrient intakes into practical plans that athletes actively apply during training, competition, transition and off-season periods can help enhance performance

### References

1. American College of Sports Medicine Joint Position Statement: nutrition and athletic performance. American College of Sports Medicine. American Dietetics Association, and Dietitians of Canada. *Medicine and Science in Sports and Exercise*, 2000; 32:2130-2145.
2. American College of Sports Medicine, Sawka MN, Burke LM, Eichner ER, Maughan RJ, Montain SJ, Stachenfeld NS. American College of Sports Medicine position stand: Exercise and Fluid Replacement.

- Medicine and Science in Sports and Exercise, 2007; 39:377-390.
3. Armstrong LE, Pumerantz AC, Roti MW, Judelson DA, Watson G, Dias JC *et al.* Fluid, electrolyte, and renal indices of hydration during 11 days of controlled caffeine consumption. *International Journal of Sport Nutrition and Exercise Metabolism*, 2005; 15:252-265.
  4. Atalay M, Lappalainen J, Sen CK. Dietary antioxidants for the athlete. *Current Sports Medicine Report* 2006; 5:182-186.
  5. Balsom PD, Gaitanos GC, Soderlund K, Ekblom B. High-intensity exercise and muscle glycogen availability in humans. *Acta Physiologica Scandinavica*, 1999; 165:337-345.
  6. Brown CH, Wilmore JH. The effects of maximal resistance training on the strength and body composition of women athletes. *Medicine and Science in Sports and Exercise*, 1974; 6:174-177.
  7. Burke LM. Training and Competition Nutrition. In: *Practical Sports Nutrition - A Sport-Specific Approach to Nutrition for Optimal Performance*. pp. 5, 12. Champaign IL: Human Kinetics, Inc, 2007.
  8. Burke LM, Kiens B, Ivy JL. Carbohydrates and fat for training and recovery. *Journal of Sports Sciences*. 2004; 22:15-30.
  9. Burke LM, Eichner ER, Maughan RJ, Montain SJ, Stachenfeld NS. Exercise and Fluid Replacement. *American College of Sports Medicine Position Stand*. 2007; 39:377-390.
  10. Carrithers JA, Williamson DL, Gallagher PM, Godard MP, Schulze K, Eurk, Trappe SW. Effects of postexercise carbohydrate-protein feedings on muscle glycogen restoration. *Journal of Applied Physiology*. 2000; 88:1976-1982.
  11. Casa DJ, Armstrong LE, Hillman SK, Montain SJ, Reiff RV, Rich BSE *et al.* National Athletic Trainers' Association Position Statement: Fluid Replacement for Athletes. *Journal of Athletic Training*, 2000; 35:212-224.
  12. Clark KL. Nutritional considerations in joint health. *Clinics in Sports Medicine*, 2007; 26:101-118.
  13. Clarkson PM, Thompson HS. Antioxidants: what role do they play in physical activity and health? *American Journal of Clinical Nutrition*, 2000; 72:637S-646S.
  14. Coyle EF. Fluid and fuel intake during exercise. *Journal of Sports Sciences*. 2004; 22:39-55.
  15. Elliot TA, Cree MG, Sanford AP, Wolfe RR, Tipton KD. Milk ingestion stimulates net protein synthesis following resistance exercise. *Medicine and Science in Sports and Exercise*, 2006; 38:677-674.