



USOPC

Nutrients that Fuel Performance

Carbohydrates

- A quick source of fuel needed for optimal cognitive and physical performance.
- Need enough to replenish muscle glycogen, which is depleted after 90 minutes of consistent exercise.
- Essential to consume within 30 minutes -1 hour after training, so that it is shunted to the muscles to be converted to glycogen versus the liver.
- Ideal to have meals containing nutrient -dense carbohydrates every 4 hours to maintain adequate blood sugar levels
- Weight maintenance = 3g/kg of carbohydrates (can go up to 5g/kg)
- Foods include: whole grain bread/cereals/pastas, fruits, vegetables, and low-fat dairy products.



Protein

- The primary source fuel needed for muscle building and recovery
- Most effective when consumed at every meal, spaced ~3-4 hours apart.
- Ideal to consume protein 30 minutes to 1 hour after training to minimize muscle protein breakdown
- Consume carbohydrates with protein in a post-training snack/meal to prevent the body from using protein as an energy source.
- Weight maintenance = 1.8g/kg of protein (can go as low as 1.6g/kg)
- Lean meats include: chicken breast, turkey/ground turkey, pork tenderloin, steak/90% ground, tofu, tempeh, nuts/seeds and eggs.



Fat

- The predominant fuel source during times of low activity (sitting, listening, walking, breathing)
- Important in the diet for absorption of fat soluble vitamins.
- Mono-unsaturated and polyunsaturated fats can act as anti-inflammatory and provide antioxidant properties to help with quick recovery and muscle damage repair.
- Foods includes: nuts, avocados, whole eggs, fatty fish, chia seeds, extra virgin olive oil



Fiber

- Soluble fibers found in beans, lentils, oats, citrus fruits and apples (to name a few) absorb water from partially digested food and slows digestion, make you feel fuller longer and regulates blood sugar
- Insoluble fiber found in whole wheat bran, whole grains, nuts, and legumes, don't absorb water. Instead it helps to bulk up and move the stool more efficiently through the body.
- Prebiotics: fibers that act as food for the healthy bacteria in the gut. Foods include whole grains, bananas, greens, onions, garlic, soybeans and artichokes



Water

- Water serves as a lubricant. It makes up saliva and the fluids surrounding the joints. Water regulates the body temperature through perspiration. It also helps prevent and relieve constipation by moving food through the intestines.
- Dehydration causes decrements in athletic performance. A 2% weight loss from sweat can cause decreased skin blood flow and increase rate of glycogen use.

