

## Sports Nutrition Study Guide Test 2

**Fat. Articles to read: *What is Fat 1; What is Fat 2; Carbohydrates and Fats for Training and Recovery, Fat Metabolism During Exercise; Strategies to Enhance Fat Utilization During Exercise;***

1. Be able to identify the major functions of fat in the body.
2. Be able to define the following: lipids, triglycerides, fatty acids, monounsaturated fat, polyunsaturated fat, saturated fat, hydrogenated fat, trans fatty acids, omega-3 fatty acid, omega-6 fatty acid, glycerol
3. Know common food sources for the following: the two essential fatty acids (linoleic and linolenic), monounsaturated fatty acids, polyunsaturated fatty acids, saturated fat, hydrogenated fat, and trans fat.
4. Understand the fundamentals of fat metabolism. (How does fat get from the mouth to the cell?) Which energy systems use fat as an energy substrate and what is the quantity of ATP re-synthesis from fat compared to CHO?
5. Be able to compute the quantity of Calories stored as fat based on %fat and body weight values.
6. Be able to identify reasons fat is a better energy reserve than is carbohydrate.
7. Know the two major sources of fatty acids for use by muscle (adipose tissue triglyceride and intramuscular triglyceride) and their pattern of use during exercise.
8. Be able to identify reasons for the reduced use of fats at higher exercise intensities.
9. Know the effect of exercise duration & training on fat utilization.
10. Know the effect of short-term and long-term consumption of high fat diets on use of fats during exercise.
11. Know the recommendations for and against fat loading before exercise and fat consumption during exercise.
12. Be able to identify the postulated mechanisms and the ergogenic properties of carnitine, caffeine, medium chain triglycerides, long chain triglycerides (ie. Do they work and if so, how?).

**Protein and Amino Acids. Articles to read: *Amino Acids, Protein and Exercise Performance; Muscle Builder Supplements; Protein and Amino Acids for Athletes***

1. Know the function of protein in the body.
2. Know what makes protein molecularly different from fats and carbohydrates (what does protein have that fats and CHO do not?).
3. Be able to define the following: essential amino acid, non-essential amino acid, complete protein, incomplete protein, glucogenic amino acid. Know what amino acids are branched-chain amino acids.
4. Know the basic difference between plant and animal protein relative to amino acid content.
5. Know the RDA for protein for jr.high school, high school-age youth, and adults.
6. Know the amount of protein in common sources of protein (meat, dairy, soy)
7. Know the effect of acute and chronic training/exercise (resistance and endurance) on protein requirements. Specifically, know the effects of strength-type and endurance-type exercise. Know the recommendations for protein intake for athletes. Know the recommendations for protein intake following exercise.
8. Know the consensus of scientific opinion regarding the effect of supplementing the following: branched-chain amino acids (BCAA) and glutamine.
9. Know the effects of insufficient protein intake and of too much protein intake
10. Be able to identify high risk groups for inadequate protein intake.