



Shooting

Information

All disciplines of shooting requires high mental concentration which requires more nutrients to be delivered to the brain to use as fuel. Mental performance will be best after eating a mixture of carbohydrate, lean protein and healthy fat at frequent intervals throughout the day. This will ensure that blood sugar levels remain stable and provide the body and the brain the necessary nutrients to perform at an elite level.

Application

Follow these nutrition guidelines to improve your mental concentration, cognitive function and reaction time.

- ✓ Follow a lower fat eating program. In general, eating a higher fat diet generally disrupts cognitive function.
- ✓ Eat a balance of simple and complex carbohydrates. This will help to avoid high sugar spikes which results in improved reaction time. A higher degree of mental concentration uses more carbohydrate.
- ✓ Eat a balance of protein, carbohydrate and healthy fat at every meal/snack. This will help stabilize blood sugar and will maintain mental and physical energy.
- ✓ Eat smaller meals and snacks. Smaller portions eaten at frequent intervals help improve performance body composition (increase muscle mass and decrease fat mass), blood chemistry (lipid profile), and provides a steady supply of fuel to the brain for optimal mental focus and cognitive function.
- ✓ Stay hydrated. Moderate dehydration can decrease mental performance by decreasing the ability to concentrate and decreasing movement accuracy. Measure your hydration status by the color of your urine (pale yellow) and make sure you are urinating every 2-3 hours during the day.



Daily Hydration

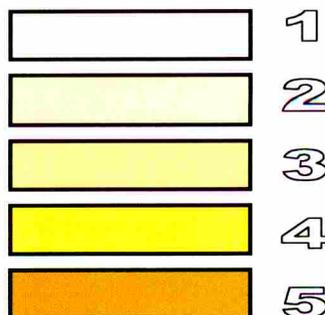
PERFORMANCE SERVICES
usolympicteam.com

Information

- ✓ Water is one of the most important nutrients in an elite athlete's nutrition program. Drinking too little water or losing too much through sweating decreases your ability to train hard and recover properly.
- ✓ Water does more than just keep you hydrated. For elite athletes, water:
 - Acts as a transporter to supply working muscles with the nutrients they need during training
 - Helps the body get rid of the waste products resulting from high-intensity training
 - Helps the body cool itself during exercise by dissipating heat through sweat
- ✓ Losing even a small amount of fluid during training or starting a workout dehydrated will make it hard to perform at your best. Fluid losses of 2-3% of an elite athlete's body weight (3-4 ½ pounds for a 150 pound athlete) can lead to:
 - Lack of concentration and focus
 - Early fatigue
 - Trouble tolerating hot weather conditions
 - And a longer recovery time

Application

- ✓ An easy and effective method to figure out if you're drinking the right amount is to check the color of your urine. Using the chart below, aim for a urine color throughout the day of #2-3 (pale yellow or the color of lemonade). Anything above a #3 indicates that you're not drinking enough fluid and your performance will quickly suffer. Remember, certain vitamin/mineral supplements can make your urine appear dark yellow, as will your first bathroom break of the day. Also, it is important to pay attention to having a significant volume of urine.
- ✓ Tip: It's always a good idea to start off your day, whether training or not, by drinking a full glass of water.



Urine Color Chart



Nutrition Label Facts

Knowing how to read food labels can help you build better eating habits.

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 250 **Calories from Fat 110**

	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Potassium 700mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Serving Size: All of the information listed here pertains to the amount of food. It helps you to compare similar products with one another. Begin by looking at how many servings there are in this product. The information on the rest of the label is based on 1 single serving.

Total Fat: Consists of four subtypes of fat: saturated fat, trans fat, monounsaturated fat, and polyunsaturated fat. Watching the amount of fat important, but also be mindful of the type of fat. Saturated and trans fat can lead to increased inflammation while mono and poly unsaturated fats have anti-inflammatory properties.

Cholesterol, only found in animal products, not plant **A.1** should be limited to no more than 300 mg / day.

Sodium is essential for optimal hydration before, during and after training. The American heart **A.2** Association recommends American adults to eat less than 2,300 mg / day. As athletes you may need more or less. **A.3**

Carbohydrate will be a major source of your daily caloric intake.. When trying to limit the amount of simple sugars in your diet, look for foods with high fiber content. Foods that are more than 5 grams of fiber per serving are considered “high fiber.”

Protein is very important because it is the building material of our bodies. It is necessary for muscle **A.4** recovery after hard training sessions.

Vitamins and Minerals: The FDA requires Vit. A, C, Iron and Calcium to be **A.5** food label. Food companies can voluntarily list others. You want to aim for 100% of these daily especially during high intensity training.

% Daily Value: This information is based on a 2,000 calorie daily diet. As athletes you may need more or less. Use these percentages as a reference tool, giving you basic guidelines on how much of each food item you should consume daily.

Performance Nutrition for Shooting: The Basics



Jr. Olympic Dev Camp
August 2010

Jim Pulliam, MA, RD, CSSD, CSCS
Strength & Power Sport Dietitian
U.S. Olympic Committee



Building a nutrition base

- Performance nutrition foundations
 - Carbohydrates
 - Appropriate fats
 - Lean proteins



Overview

- Everyday nutrition
- Nutrient timing
- Body composition
- Putting it all together...




Several types of foods are carbohydrates



Breads, Cereals,
Legumes/Beans



Fruits



Vegetables



Dairy



Building a nutrition base

- What you eat and drink on a daily basis will affect your future ability to:
 - Train at **high level of intensity & focus**
 - Recover optimally from training sessions
 - Maintain a strong immune system
 - Recover from injuries
 - Resist illness
 - Compete in multiple matches over multiple days



What kind of carbohydrates?

Denser carbohydrates provide a higher amount of nutrients per calorie.

Examples of nutrient-dense carbohydrates include fruits, vegetables, legumes, and whole grains.



Some carbohydrates are less nutrient-dense than others. These include refined grains, sugary drinks, and processed foods.

These carbohydrates provide energy but are lower in nutrients.





Nutrient dense carbohydrates (high nutrient to calorie ratio) can be found on both sides of this scale.



Examples of nutrient-dense carbohydrates

Berries
 Greens
 Vegetables
 Red Grapes
 Melons
 Kiwi Fruit
 Some Cereals
 Whole grains
 Carrots
 Tomatoes
 Prunes & Dates
 Raspberries
 Garlic
 Strawberries
 Potatoes

USA
Colorado Springs OTC

Protein choices

Choose more of proteins high in omega-3 & monounsaturated fats

Fish & Seafood
 Eggs
 Lean meats
 Legumes/Beans
 Low-fat Dairy
 Tofu
 Nuts

Choose less of proteins high in saturated & trans fats

Fatty and Processed Meats

USA
Colorado Springs OTC

Types of fats

- Unhealthy
 - Saturated and trans fats
 - Promotes inflammation
 - Compromises immune system
- Healthy
 - Omega-3 and monounsaturated fat
 - Exhibits anti-inflammatory properties
 - Enhances immune system
- All fats are calorically-dense, so choose healthy fats to meet your caloric needs

USA
Colorado Springs OTC

Give your food a "fat test"

- How do you know if a food has healthy or unhealthy fat?
- Read nutrition label and give it the "fat test":
 1. Should be $\leq 30\%$ total fat
 $\leq 3g$ total fat per 100 calories
 2. If not, it should be $\leq 10\%$ saturated and/or trans fat
 $\leq 1g$ saturated and/or trans fat per 100 calories
- Remember...
 - If you're watching your weight, even healthy fats are dense in calories, so pay attention to how much of it you're eating!

USA
Colorado Springs OTC

"Healthy Fat" Food Sources

Herring
 Mackerel
 Tuna
 Trout
 Salmon
 Soybeans
 Flaxseed & Flaxseed Oil
 Walnuts
 Avocado
 Nuts

USA
Colorado Springs OTC

Hydration

- Approx. 70% of body mass is water
- Dehydration of as little as 2% body mass:
 - ↓ muscular strength
 - ↓ muscular endurance
 - ↓ anaerobic work capacity
 - ↓ aerobic work capacity
 - ↓ alertness
 - ↓ ability to concentrate

USA
Colorado Springs OTC

Sawka MN Med Sci Sports Exerc 1992;24:657-670

Hydration Strategies

- Pay attention to your hydration status everyday!
 - urine color: crude but good field gauge
- Paying attention to hydration status and adjusting fluid intake accordingly becomes a habit
- One less thing to worry about going into
 - Hard training sessions
 - Dehydrating environments (hot & humid or arid)
 - Competitions



Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Recovery Nutrition

- Immediately (within 30-60 minutes) after workouts
 - Especially when doing > 1 workout per day
 - Not necessary for low intensity workouts <1 hr
- Conditions within the body post-workout are optimal for recovery if the proper nutrients are provided
- Consuming carbohydrate & protein right after workout will:
 - Restore fuel stores in muscle (glycogen)
 - Increase synthesis of muscle protein



Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Overview



- • Everyday nutrition
- • Nutrient timing
- • Body composition
- • Putting it all together...



Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Overview

- • Everyday nutrition
- • Nutrient timing
- • Body composition
- • Putting it all together...



Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Eat more frequently

- Eating small meals every 3-4 hours (starting with breakfast) can:
 - Improve body composition (↑ lean, ↓ fat)
 - ↓ total calories consumed over whole day
 - ↑ intensity of workouts
 - **Improve blood glucose control**
 - ↑ calories burned over the whole day
 - ↑ appetite control

Farschohr HR et al. *Am J Clin Nutr*. 2005;81:16-24
 Farschohr HR et al. *Am J Clin Nutr*. 2006;81:388-396
 Speechly DP, Bullensten R. *Appetite*. 1999;33(3):285-297



Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Optimal body composition




What's the perfect body type for shooting?
The one that's optimal for you and your performance!



Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Optimize your genetic potential

- Start with performance nutrition foundations
- Eat smaller & more frequently
 - For weight loss & weight gain
- Pursue body comp modification at appropriate time
 - Not during competitive season
- Focus on recovery nutrition (quality & timing)
- Be careful of portion sizes!

USA
 Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Soda Beverage

20 years ago	Today
	
6.5 oz.	20 oz.
85 calories	250 calories

National Institutes of Health, National Heart, Lung, and Blood Institute
 USA
 Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Cheeseburger

20 years ago	Today
	
333 calories	540 Calories

National Institutes of Health, National Heart, Lung, and Blood Institute
 McDonald's online nutrition info (<http://nutrition.mcdonalds.com>) (Accessed Nov 08)
 USA
 Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Bagel

20 years ago	Today
	
3-inch diameter	6-inch diameter
140 calories	350 calories

National Institutes of Health, National Heart, Lung, and Blood Institute
 USA
 Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

French Fries

20 years ago	Today
	
2.4 oz.	6.9 oz.
210 calories	500 calories

National Institutes of Health, National Heart, Lung, and Blood Institute
 McDonald's online nutrition info (<http://nutrition.mcdonalds.com>) (Accessed Nov 08)
 USA
 Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Overview

- Everyday nutrition
- Nutrient timing
- Body composition
- ➔ • Putting it all together. . .

USA
 Jim Pulliam, MA, RD, CSSD Colorado Springs, OTC

Putting it all together. . .

- Consume foods that contribute to a strong nutrition base
 - Antioxidant-rich produce & whole grains
 - Lean proteins
 - Healthy fats
- Monitor hydration status & hydrate accordingly
- Eat every 3-4 hours
- Consume carbs + protein immediately post workout
- Professionalism in sport means having a plan.....

ESPECIALLY A NUTRITION PLAN!



Jim Pulliam, MA, RD, CSSD

Colorado Springs, OTC

Questions?



GOOD LUCK!



Jim Pulliam, MA, RD, CSSD

Colorado Springs, OTC