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

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 if 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 Facts

**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 is 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 should be limited to no more than 300 mg / day.

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

**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 recovery after hard training sessions.

**Vitamins and Minerals:** The FDA requires Vit. A, C, Iron and Calcium to be 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

Overview

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

Building a nutrition base

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

Several types of foods are carbohydrates

- Breads, Cereals, Legumes/Beans
- Fruits
- Vegetables
- Dairy

What kind of carbohydrates?

Nutrient dense carbohydrates (high nutrient to calorie ratio) can be found on both sides of this scale.
**Examples of nutrient-dense carbohydrates**
- Berries
- Grains
- Vegetables
- Red Grapes
- Kiwi Fruit
- Some Cereals
- Garlic
- Raspberries
- Prunes & Dates

**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

**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 caloric-dense, so choose healthy fats to meet your caloric needs

**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 ≤ 30% total fat
  2. ≤ 9g total fat per 100 calories
- If not, it should be ≤ 10% saturated and/or trans fat ≤ 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!

**“Healthy Fat” Food Sources**
- Herring
- Mackarel
- Tuna
- Trout
- Salmon
- Soybeans
- Nuts
- Flaxseed & Flaxseed Oil
- Walnuts
- Avocado
- Olive Oil

**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
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

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

Overview

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Eat more frequently

- Eating small meals every 3-4 hours (starting with breakfast) can:
  - Improve body composition ('lean, fit, fat')
  - Total calories consumed over whole day
  - Intensity of workouts
  - Improve blood glucose control
  - Calories burned over the whole day
  - Appetite control

Optimal body composition

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

Soda Beverage

20 years ago
6.5 oz.
85 calories

Today
20 oz.
250 calories

National Institutes of Health, National Heart, Lung, and Blood Institute

Cheeseburger

20 years ago
333 calories

Today
540 Calories

National Institutes of Health, National Heart, Lung, and Blood Institute

Bagel

20 years ago
3-inch diameter
140 calories

Today
6-inch diameter
350 calories

National Institutes of Health, National Heart, Lung, and Blood Institute

French Fries

20 years ago
2.4 oz.
210 calories

Today
6.9 oz.
500 calories

National Institutes of Health, National Heart, Lung, and Blood Institute

Overview

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

Questions?

GOOD LUCK!