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Fueling Ice Hockey Players

Ice hockey is an intermittent, high-intensity sport like soccer or basketball, but unlike soccer or basketball, hockey has physical contact in the form of checking. Ice hockey players need multidirectional movement and speed, agility, balance, coordination, endurance, and strength. Dry land training is part of the sport as well as practice on the ice. Even though ice hockey is played in a cold arena on a cold surface, heavy uniforms and padding contribute to high sweat rates in some players. Proper fueling and hydration to stay strong for the entire practice or game are important for success in the sport.

Ice hockey uses up a lot of the body's glycogen (carbohydrate stored in muscle), especially in the leg muscles. Without enough carbohydrate, fatigue can result, limiting the player's ability to maintain high-intensity effort, especially in the later stages of the game.

The United States Hockey Association is the national governing body for elite junior and senior hockey players (www.usahockey.com).

Fueling Strategies

Ice hockey players face intense practice sessions. A player can burn up to 3,000 calories on practice and game days.

The nutrients that provide energy (calories) are carbohydrate, protein, and fat. Eating a wide variety of foods with enough carbohydrate, protein, and fat will help fuel your training and competition and support training adaptations and recovery. The amounts you need of each nutrient are given below.

Carbohydrate

Carbohydrate should make up most of your diet. During intense training periods, eat 2.7 to 4.5 grams of carbohydrate per pound of body weight per day (6 to 10 grams per kilogram). For example, a 160-pound hockey player would need 432 to 720 grams of carbohydrate a day. On less intense training days or when sidelined by injury, you only need 1.4 to 2.3 grams of carbohydrate per pound (3 to 5 grams per kilogram). Active young children need less carbohydrate than older children, so the lower end of the range is recommended for young hockey players.

These foods have **15 grams** of **carbohydrate**:

- 1 slice bread
- 1 6-inch tortilla
- ½ cup corn
- ½ cup mashed potatoes
- ½ medium baked or sweet potato
- ⅓ cup rice
- 3 cups popcorn
- 1 small apple
- 15 grapes
- 2 tangerines
- 2 tablespoons raisins
- ½ cup orange juice
- 3 cups green beans
- 1¼ cups milk or yogurt

Choose high-quality carbohydrate foods such as whole grain breads and cereals, rice, pasta, starchy vegetables, whole or dried fruit, and low-fat milk and yogurt. Eat fewer refined carbohydrates and sweets such as pastries, cookies, cakes, candy, sugar-sweetened soft drinks, fruit drinks, tea, and specialty coffee drinks.

Protein

Protein provides the building blocks for muscle mass and for healthy growth and development.

These foods have
7 grams of protein:

- 1 ounce cheese
- 1 ounce beef, pork, chicken, or turkey
- ¼ cup cottage cheese
- ½ cup black beans or kidney beans
- 1 whole egg
- 2 tablespoons peanut butter
- 1 cup milk or plain yogurt

You need 0.6 to 0.8 grams of protein per pound (1.3 to 1.8 grams per kilogram). For example, a 160-pound hockey player would need 96 to 128 grams of protein a day.

Consuming protein with every meal and snack will help get needed amino acids (building blocks of protein) to the body for repair and recovery. Eating more protein than the recommended amount will not build muscle faster or add extra muscle mass.

Choose lean protein foods such as lean beef and pork, chicken and turkey, fish, eggs, and low-fat dairy foods. Nuts are a good source of protein and contain health fats. Eat fewer high-fat protein foods such as regular burgers, brisket, ribs, sausage, and full-fat cheeses and dairy foods.

Fats

There is no specific recommendation for fat for hockey players, but healthy fats should be a part of every athlete's diet. Healthy fats include olives and olive oil, nuts and nut butters, avocado, and vegetable oils (such as canola oil). Fat has more calories than carbohydrate or protein so healthy fats can help add calories for athletes who want to gain weight.

What Should Hockey Players Eat Before and After a Workout?

When possible, eat 3 to 4 hours before a hard practice or competition. Aim for a low-fat meal with about 200 to 300 grams of carbohydrate and 30 grams of lean protein. This will ensure you have enough fuel on board but will leave time for your stomach to empty before you take the ice. A turkey sub sandwich with baked chips and a side of fruit or a grilled chicken wrap on a flour tortilla with pretzels and fruit juice or low-fat milk are examples of meals that will meet the energy demands of a long practice or competition.

If there is not enough time to eat 3 to 4 hours before practice or competition, eat a snack 1 to 2 hours before you begin. Good choices include juice, fruit, milk, granola or cereal bars, a small bagel with peanut butter, cheese and crackers, a bowl of cereal, or yogurt. If there is less than 1

hour before exercise, liquids, such as a sports drink or a low-fat liquid meal replacement, may be the best choice.

For practices longer than 1 hour, pack portable snacks. Try to eat 30 to 60 grams of carbohydrate when you have the opportunity, such as between periods. Good choices for snacks include sports drinks, which provide carbohydrate, fluid, sodium, and potassium; peanut butter sandwiches; pretzels; string cheese; trail mix; dried fruit; orange slices; baked chips; smoothies; or 100% fruit juice.

After practice, recover with a carbohydrate- and protein-rich snack. Carbohydrate replaces muscle glycogen that was lost during a long practice or competition, and protein stimulates muscle repair. Good choices include a turkey or grilled chicken sandwich, a slice of vegetable-cheese pizza, low-fat chocolate milk, cottage cheese and fruit, or cheese and crackers. If you are practicing or competing the same day or the next day, start your recovery within 30 minutes after training. If the following day will be a rest day, add recovery foods to your next meal.

Vitamins and Minerals

Hockey players can get all the vitamins and minerals they need by making healthy food choices and eating a variety of foods. Have at least 5 servings of fruits and vegetables each day. Adding berries to breakfast cereal, dried fruit to trail mix, frozen fruit to plain or vanilla yogurt, side salads with meals, vegetables on sandwiches, and salsa on baked potatoes and snacking on fresh fruits and vegetables will help you get all the nutrients you need.

Female ice hockey players should pay extra attention to choosing iron-rich and calcium-rich foods. These nutrients are needed in larger amounts, especially during teen years. Lean beef in a stir-fry, dark-meat chicken or turkey, kidney beans and black beans, and breakfast cereals fortified with iron are good choices. For calcium, choose low-fat milk (cow's milk or soy, rice, or almond milk), low-fat cheese, yogurt, almonds, leafy green vegetables, orange juice with added calcium, or smoothies made with milk or yogurt.

Hydration Strategies: What Should Hockey Players Drink?

Ice hockey players, especially goalies, can sweat heavily under all their padding. A study of Canadian elite junior hockey players found that one-third did not drink enough during practice or a game to prevent a sweat loss of 2% body weight or more, even though there was plenty of time to drink. Losing 2% body weight through sweat has been associated with decreased sports performance in the later stages of a practice or game.

Hockey players have plenty of breaks in the action and should take advantage of the time between shifts to drink fluids. Keep a water bottle at the bench for easy access to fluids.

Water is best for most athletes. Plan to drink about 2 cups (16 ounces) of water 2 to 3 hours before a workout or game. Then drink 1 cup (8 ounces) of water 10 to 20 minutes before exercise.

Sports drinks are a good choice when you have long, hard workouts or for all-day tournaments. Stick to the basic tried-and-true sports drinks such as Gatorade or PowerAde, because they provide a good balance of carbohydrate, sodium, and potassium to replace losses. Replacing carbohydrate and electrolytes during a game can help maintain physical and mental performance in the later stages of the game. Follow the same drinking schedule as for water, but also listen to your body. Drink when you are thirsty and monitor how much you urinate and the color of your urine. If you are urinating frequently throughout the day and your urine is a light-straw color, you are probably drinking enough fluids.

Notes:

Frequently Asked Questions

Are there any supplements that can help me get stronger and improve my power?

Supplements are no substitute for a sound nutrition plan. Eating quality carbohydrates, lean protein, and healthy fats at every meal and snack will give you what you need to support your training. Sports nutrition research has shifted in recent years to finding ways to maximize adaptation to training. Time meals and snacks around practice to have carbohydrate and protein available to support hard training. Eat a protein-rich snack immediately after a strength-training session and replace carbohydrate after a hard aerobic workout. Elite hockey players must follow the World Anti-Doping Agency rules for banned substances, and a list can be found on their website (www.wada-ama.org).

I get dizzy and light-headed during morning practice but I don't like to eat a traditional breakfast. Any suggestions?

Starting practice with low glycogen stores and/or low blood glucose (sugar), as can happen after an overnight fast, can set you up for dizziness and low energy during a hard practice. Eat and drink something before a practice, even if it's not "traditional" breakfast food. Try a liquid breakfast (a smoothie or commercially prepared meal replacement) to sip on as you head to practice or an energy bar that provides about 100 to 250 calories, 10 grams of protein, and 15 to 30 grams of total carbohydrate per bar along with water or 16 ounces of a sports drink.

What are some good resources for nutrition and hockey?

The best resource is a registered dietitian nutritionist, especially one who specializes in sports nutrition.

To find a qualified sports dietitian, connect to the website of Sports, Cardiovascular, and Wellness Nutrition (SCAN) (www.scandpg.org) and use the "Find a SCAN RD" search box. SCAN also has free sports nutrition fact sheets on a wide range of topics at www.scandpg.org/sports-nutrition/sports-nutrition-fact-sheets.

For online resources, check out the United States Olympic Committee's sports nutrition resources at www.teamusa.org/About-the-USOC/Athlete-Development/Sport-Performance/Nutrition. You will find many resources there, including videos, recipes, and eating guidelines for athletes.