



PowerBar Playbook Series | Canada Version



# SPORTS NUTRITION FOR HOCKEY

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**Your team is up by one goal late in the third period. The other team pulls their goalie and they now have a one-man advantage and the puck in your end. Both teams are exhausted after nearly 60 minutes of nonstop body checking and hard-fought, high-speed play. You and your teammates are trying to hang on for the win, while your opponents urgently pass the puck along the perimeter, desperately trying to find that open seam to the goal.**

They make a quick centering pass, and with lightning speed their best scorer, open for a split second, fires a rocket one-timer toward the net, where your goalie is now out of position.

Maybe you've been at this point in a must-win game — digging deep, trying to find the edge over a closely matched opponent. When your game is on, you anticipate that shot, instinctively know its trajectory, and knock it down with a glove or stick to bail out your goalie and save the game. But some games, you're completely gassed in the third period, you have trouble seeing the puck off the opponent's stick, your reactions are slow, and you can't seem to find the extra edge you need.

It might surprise you, but players who have a sports nutrition game plan have a much better shot at finding that competitive edge and making the big play when it's needed most.

## THE PHYSICAL CHALLENGE

Ice hockey features nonstop, high-speed, aggressive body contact. Players require explosive power to reach top speeds on breakaways and to stop on a dime, and muscle strength and bulk to deliver and take bone-jarring body checks. They also need agility and coordination to manoeuvre at high speeds while deftly handling a stick, and overall conditioning to withstand repeated 30- to 80-second all-out shifts on the ice, spanning three 20-minute periods and possibly overtime. The ice is cold, but your body isn't. In heavy pads and with layers of clothing, players can lose 1.4–4.5 kg (3–10 lbs) of fluid due to sweating during a game. Playing heavy minutes at breakneck speed also drains muscle energy stores. While energy reserves and hydration might hold you over for a single game, back-to-back games or practices will quickly take their toll if recovery between sessions on the ice isn't optimal. On-ice training includes warm-ups, high-intensity skating, drills, and scrimmaging, while off-ice training frequently involves resistance training to enhance explosive power. Nutrition plays a vital role in

maximizing the benefits of all this training. Finally, elite and professional athletes might be playing 3–4 games per week and traveling extensively between games, with limited access to the foods and beverages needed to help promote recovery.

## KEY PRINCIPLES OF SPORTS NUTRITION

Meeting the rigorous demands of ice hockey requires a comprehensive performance nutrition strategy. How you prepare nutritionally prior to games and practices, how you reenergize and rehydrate during play, and what you do afterwards to help speed recovery can dramatically impact your performance on the ice.

### HYDRATION

In hockey, fatigue is your enemy. It robs you of the ability to compete at your quickest, fastest, and strongest. The single largest contributor to fatigue when practicing or playing is dehydration. When you're dehydrated, your reactions are dulled, it's harder to get to the puck, the precision of your shots suffers, and your risk of injury increases. Dehydration also impairs your ability to concentrate and make tactical decisions on the ice.

High-speed skating for exhausting 30- to 80-second shifts produces large fluid and sodium losses due to sweating. Protective helmets and pads make it even harder to dissipate heat. This scenario can quickly lead to dehydration and a fall off in your performance on the ice. In fact, if you lose just 2% of your body weight due to fluid loss, your ability to perform on the ice will suffer. For a 68-kg (150-lb) athlete, a 2% weight loss equates to 1.4 kg (3 lbs). Hockey players can easily lose this much fluid and more during long practices and during games. Complicating matters is the fact that thirst doesn't kick in until well after you've lost a significant amount of fluid. Fortunately, dehydration can be avoided by sticking to a disciplined hydration plan before, during, and after you play.

### ENERGIZING

During practices and games, you rely heavily on carbohydrates to help provide energy to working muscles. Carbohydrate energy is present in your body in two forms. Glucose circulates in your bloodstream, and bundles of glucose called glycogen are stored in your liver and muscles. The catch is that you don't have much of a reserve of these important energy stores. Fully loaded, you might have about 40 calories worth of glucose circulating in the bloodstream and about 1,900 calories worth of glycogen. Intense practices and playing heavy minutes in games will deplete glycogen stores.

If you don't consume adequate carbs between workouts and competitions, your muscle glycogen reserves will dwindle. As muscle glycogen stores run dry, you turn to liver glycogen stores to maintain your blood glucose level. But once liver glycogen stores are tapped, your blood sugar level drops, fatigue quickly sets in, and your play drops off dramatically. So you can't afford to show up for important games or intense periods of training with your carbohydrate energy reserves anything less than fully replenished. In addition, you can delay the onset of muscle fatigue by replenishing your energy with carbs during practices and games.

# If you go into practices fully hydrated, you'll be able to train harder.

## RECOVERY

Not only do training and games deplete your glycogen reserves, they tax your muscle tissue in other ways, especially if resistance training is part of your weekly workouts. The fact is that muscle tissue gets damaged as you train or play, and it requires repair. In addition, during conditioning workouts and when you're lifting weights, your muscle tissue is being stimulated to increase as an adaptation to your training workload. Recovery is the process of reloading carbohydrate for energy stores, repairing and building new muscle tissue, and rehydrating. It's during the recovery process that you achieve the gains from each practice, workout, or game. And it is the process of recovery that enables you to be ready for your next practice or game. So recovery is an extremely important element of your hockey game plan. Your body is ready to begin recovery as soon as you step off the ice, but the process doesn't begin in earnest until you provide the nutritional components.

## PRACTICAL SPORTS NUTRITION STRATEGIES FOR ICE HOCKEY

Fortunately, there are easy-to-implement sports nutrition strategies that can help you ward off fatigue and remain at your best throughout practices or games.



### START FULLY HYDRATED

If you go into practices fully hydrated, you'll be able to train harder and have better practices. The same goes for games — you'll be able to sustain a higher level of play for longer, and that might be the difference between winning and losing a close contest.

Make up for any fluid deficits you might have incurred from prior practices or games by **consuming 400–600 ml (14–20 fl oz) of water or a sports drink 2–3 hours before you start play. Keep hydrating as needed prior to play and during warm-ups.**

Monitor your hydration status prior to the start of play by checking the colour of your urine. A light-yellow colour is consistent with adequate hydration. If your urine is darker, more like the colour of apple juice, that's typically a sign that more fluids are needed before you head to the rink.

### START FULLY ENERGIZED

To top off muscle glycogen reserves for energy, consume a meal 2–4 hours before you start play. Choose familiar high-carbohydrate foods and beverages, and avoid slow-to-digest fatty and high-fibre foods prior to play. If you have an early-morning game or practice, consume your high-carb meal the evening before and have a carbohydrate-rich snack with fluids an hour or two before you start play. As a snack, try a fruit smoothie, a meal replacement beverage, a PowerBar® Sport Energy™ bar, or a PowerBar® Energy Gel.



PowerBar® Gel Blasts™  
Energy chews

Professional hockey players often have evening games. Frequently, they will eat a high-carbohydrate, pregame meal 5–6 hours before the game — then rest, snack on carbs, and hydrate up until the pregame warm-up.

Don't let pregame jitters cause you to skip eating altogether before playing. Instead, try liquid carbohydrate sources in place of solid foods. A fruit smoothie or a meal replacement drink is a good alternative when nerves have your stomach in a knot.

Make sure to have readily digestible, high-carbohydrate snacks on hand for when you get hungry at the venues where you are playing.

**IDEAS FOR HIGH-CARBOHYDRATE PREGAME MEALS**

(2-4 hours before practice or a game)

Cold or hot cereal with fruit or fruit juice and low-fat or skim milk

French toast or pancakes with maple or fruit syrup

Toast with jam or honey, low-fat yogurt

Breakfast burrito (scrambled eggs, salsa, and low-fat cheese in a flour tortilla) and fruit juice

Bagel or English muffin with jelly and/or peanut butter, banana, and fruit juice

Pasta or cheese ravioli with low-fat, tomato-based sauce; French bread or low-fat breadsticks; steamed vegetables; low-fat/skim milk; pudding snack; canned fruit

Grilled chicken sandwich with frozen low-fat yogurt, baked potato with low-fat sour cream or salsa

Turkey sub sandwich with tomato, lettuce, and mustard; baked chips; fruit juice; low-fat frozen yogurt

Thick-crust veggie pizza, low-fat gelato, and canned peaches

Baked or grilled lean beef, chicken, turkey, or fish; steamed rice; dinner roll; cooked green beans; low-fat frozen yogurt; fruit juice

**IDEAS FOR QUICK-TO-DIGEST, HIGH-CARBOHYDRATE OPTIONS**

(30 minutes to 1 hour before practice or a game)

Fruit smoothie made with mango/banana/berries and low-fat or skim milk or yogurt

Fruit or vegetable juice

Small roll or sandwich made with banana and honey

Low-fat or fat-free yogurt, or fat-free frozen yogurt, gelato, or sorbet

Bagel or English muffin with jelly and/or peanut butter, banana and fruit juice

PowerBar® Sport Energy™ bar

PowerBar® Fruit Energize™ bar

PowerBar® Energy Gel

PowerBar® Gel Blasts™ Energy chews

Ironman PERFORM™ sports drink



PowerBar® Fruit Energize™ bar



PowerBar® Sport Energy™ bar

## REHYDRATE AND REENERGIZE AFTER EVERY SHIFT

With every shift on the ice, you're losing fluids and sodium due to sweating, and you're burning through your limited carbohydrate energy stores. These losses can lead to fatigue and poor play in the third period or overtime if allowed to accumulate. Fortunately, you can help delay the onset of fatigue by systematically replacing lost fluids, sodium, and carbohydrates while you're on the bench between shifts. Use this time wisely to reenergize and rehydrate. Goalies are especially prone to heavy sweat losses because of all their padding. If you're in the goal, make sure to have a sports bottle close at hand for a few gulps during breaks in the action. Players often take a hit from the sports bottle, only to spit out the fluid rather than drinking it. Get into the habit of swallowing fluids. Consume at least five swallows of fluid during breaks. This is equal to about 150 ml (5 fl oz).



## MATCH YOUR SWEAT RATE AND MONITOR SUCCESS

Dehydration can impair your game when you lose upwards of 2% of your body weight due to fluid loss. To stay hydrated while playing, it is now the consensus recommendation of authorities such as the American College of Sports Medicine that athletes consume fluids at a rate that closely matches sweat rate. This generally requires something on the order of 400–800 ml (13–26 fl oz) every hour of exercise, preferably in smaller amounts taken frequently, such as 100–200 ml (3–7 fl oz) every 15 minutes.

However, fluid needs can vary considerably, depending on factors such as your size, your position, and the intensity of play. Therefore, calculating your sweat rate is the best approach to determining your hydration needs, and it's really quite simple. In fact, you can do it during practices or games. For a step-by-step guide to calculating your sweat rate and to obtain a personalized plan to meet your unique hydration needs, use the PowerBar Sweat Rate Calculator at [www.powerbar.ca/src](http://www.powerbar.ca/src).



Ironman PERFORM™  
sports drink

## USE A SPORTS DRINK

For games and intense practices, a beverage that provides carbohydrates, fluids, and sodium, such as Ironman PERFORM™ sports drink, is a much better option than water. The advantages are that a sports drink provides carbohydrates to help sustain your blood glucose level and causes fluid in the beverage to be absorbed more quickly. Athletes also typically consume more fluids when their hydration beverage is flavoured, as is the case with a sports drink. So have sports bottles easily accessible on the bench, filled with a flavoured sports drink.



PowerBar® Energy Gel

Another option for energy replenishment and rehydrating during breaks or between shifts is to consume an energy gel and chase it with water. Make sure to select an energy gel that provides sodium along with carbohydrates, such as PowerBar Energy Gel. These gels are designed to be consumed every 20–45 minutes during exercise, and they provide the carbohydrate and sodium of a sports drink.

If you get hungry for something more solid during practices or games, a few bites of a PowerBar Sport Energy bar can provide a muscle-energizing carbohydrate boost. Keep a stash on the bench for quick access during breaks.



## START RECOVERY AS SOON AS POSSIBLE AFTER PLAYING

You finish a hard-hitting overtime game with a victory. You make your way back to the locker room, shedding your jersey and pads as you go — you're ready to celebrate with your teammates. But before you do, take the necessary steps to kick-start your recovery. Your body is ready to start the recovery process just as soon as you step off the ice. However, you need to provide the nutritional components, including carbohydrates to restore depleted glycogen stores, protein to repair and build muscle tissue, and fluids to effectively rehydrate. The sooner your next game or practice, the sooner you'll want to start recovery.

## Carbohydrates

Failing to replenish glycogen stores after a tough session on or off the ice is a recipe for poor performance at your next game or practice. Research shows that a single hockey game depletes glycogen stores in your leg muscles by 60%. So if you don't replenish your reserves after playing, chances are you'll be fading in the third period of your next game.

If you don't play or practice again within 24 hours, high-carbohydrate meals and beverages will generally promote a full recovery within about 24 hours. But the trick is to consume enough carbohydrates shortly after your game or practice to ensure optimal glycogen replacement. Researchers have found that some hockey players don't consume adequate amounts of muscle-energizing carbs. This underscores an important point — while triathletes, distance runners, and endurance cyclists have been quick to grasp the importance of carbs to athletic performance and endurance, many hockey players have yet to make that same connection, and poor performance on the ice is the result. The only way to effectively replenish your energy after a tough practice or game is to ensure that your diet post-exercise is loaded with carbohydrate foods and beverages. Typically, hockey players require 6–10 grams of carbs per kg (2.7–4.5 grams per lb) body weight daily. For a 68-kg (150-lb) athlete, that equates to 405–675 grams of carbohydrates per day. This requires making carbohydrate foods such as cereals, bread, fruit, vegetables, pasta, rice, and potatoes the focus of meals and snacks. Also, alcohol is not a good source of carbs, and therefore not effective for rebuilding glycogen stores.

In preparation for a period of intense training or a key game or tournament, you might want to load your leg muscles with extra glycogen stores. To do this, taper your workouts, or rest a day or two before play, and consume 8–12 grams of carbs per kg (3.6–5.5 grams per lb) body weight.

Also, if you're in a tournament situation with two games in a single day or 24-hour period, rapid recovery is a must. Speed the rebuilding of glycogen stores by consuming about 1.1 grams of carbohydrates per kg (0.5 grams per lb) body weight within 30 minutes of completing your game. Repeat this regimen again within 2 hours or consume a high-carbohydrate meal. For a 68-kg (150-lb) athlete, that equates to 75 grams of carbohydrates after playing and then again 2 hours later.

If you prefer, you can also reenergize by consuming smaller amounts of carbohydrates more frequently. Continue to consume easy-to-digest, high-carb foods and beverages up until 30–60 minutes before the start of your next game.



PowerBar ProteinPlus® protein bar

## Protein

Muscle tissue repair and building is another important aspect of recovery. Muscle tissue is made up of protein, and protein is made up of building blocks known as amino acids. When you consume protein foods, the protein is digested and broken down into its component amino acids. These amino acids are then absorbed and repackaged into the proteins that your body needs in order to repair and build muscle tissue. Consuming 10–20 grams of protein as soon as possible after a practice or game will provide the amino acids needed for repairing damaged muscle tissue, and for making new muscle tissue as an adaptation to your training. When you do resistance training workouts, consume 20–40 grams of protein just before and/or immediately after lifting, to ensure an adequate supply of amino acids for the muscle tissue repair and building process.

## Fluids

Playing ice hockey leads to heavy fluid and sodium losses due to sweating. Even if you are diligent in your efforts to hydrate during play, chances are you'll probably lose more fluids than you take in. Weigh yourself before and after practices and games to gauge your net loss of fluids. Replace this fluid by gradually drinking 690 ml (23 fl oz) of a sports drink, recovery beverage, or water for every 0.45 kg (1 lb) of weight lost. If your loss of fluid during practices consistently exceeds 2% of your body weight, try to increase your fluid intake during subsequent workouts in order to avoid dehydration.



PowerBar ProteinPlus® protein powder

A PowerBar ProteinPlus® protein powder shake is a fast and convenient option to help start the recovery process. You'll quickly have the carbs, protein, and fluids to start reloading, repairing, and rehydrating. So before hitting the shower, slam down a shake and get on the road to rapid recovery. Other meal and snack ideas for speeding recovery after a tough day of practice are listed in the following table. If travel between games limits your access to the fluids and foods that you need for rapid recovery, pack a bag or cooler with your own supply of foods, beverages, and snacks to aid in promoting a full recovery.



PowerBar® Sport Energy™ bar

## RECOVERY OPTIONS

Be prepared! Pack in your bag or cooler:

Bread, rolls, and bagels

Sandwiches

Crackers or pretzels

Fresh and canned fruits and fruit smoothies

Vegetables and vegetable juice

Cereal with milk

Fat-free or low-fat yogurt or cottage cheese with fruit

### PowerBar® Products:

PowerBar ProteinPlus® protein powder

PowerBar® Recovery bar

Ironman PERFORM™ sports drink

PowerBar ProteinPlus® protein bar

PowerBar® Sport Energy™ bar

## ICE THE OPPOSITION WITH POWERBAR SPORTS NUTRITION

Play your best all season long by being prepared nutritionally before every game and practice, effectively energizing and hydrating during play, and doing what's required afterwards to speed recovery. Use PowerBar® sports nutrition products and tools to help meet your energy, hydration, and recovery needs.



## TOURNAMENT SAMPLE SPORTS NUTRITION PLAN

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PowerBar ProteinPlus<sup>®</sup> protein bar



PowerBar<sup>®</sup> Harvest Energy™ bar



PowerBar<sup>®</sup> Triple Threat Energy™ bar

TIME	EVENT	WHAT TO EAT
6:30–7:00 a.m.	Breakfast Ideally 2–4 hours before a game	Low-fibre breakfast cereal with skim milk Banana Toast with honey Ironman PERFORM™ sports drink or water
7:00–8:30 a.m.		Frequent sips of Ironman PERFORM sports drink or water
9:00–10:30 a.m.	Game #1	Frequent sips of Ironman PERFORM sports drink, PowerBar <sup>®</sup> Energy Gels, or water during breaks in play
10:30–11:00 a.m.	Recovery	Plain bagel Yogurt Banana Frequent sips of PowerBar ProteinPlus <sup>®</sup> protein powder shake or water
12:00–12:30 p.m.	Lunch	Turkey sandwich on French bread Canned fruit Baked chips Low-fat frozen yogurt Frequent sips of Ironman PERFORM sports drink or water
12:30–1:30 p.m.	Rest time	Frequent sips of Ironman PERFORM sports drink, PowerBar Energy Gels, or water; or PowerBar <sup>®</sup> Fruit Energize™ bars or PowerBar <sup>®</sup> Sport Energy™ bars if hungry
2:00 p.m.	Warm-up	Frequent sips of Ironman PERFORM sports drink or water
3:00–4:30 p.m.	Game #2	Frequent sips of Ironman PERFORM sports drink, PowerBar Energy Gels, or water during breaks in play
4:30–5:00 p.m.	Recovery	Choose from: PowerBar ProteinPlus protein powder shake PowerBar ProteinPlus <sup>®</sup> protein bar PowerBar <sup>®</sup> Recovery bar String cheese and crackers Smoothie Bagel Peanut-butter-and-jelly sandwich
6:00 p.m.	Dinner	Cheese ravioli with meat or marinara sauce French bread Fresh or canned fruit Steamed vegetables Gelato or frozen yogurt Goal: Consume a high-carb meal and then high-carb snacks until you retire for the night

This food plan is intended to give general guidelines for a typical tournament schedule. It is not designed to be any particular caloric level. For a personalized daily food plan, use PowerBar<sup>®</sup> PowerCoach™ to determine your caloric needs and to obtain a daily sports nutrition plan just for you.

## CANADA VERSION

## HOCKEY SPORTS NUTRITION GUIDE

Hockey players require explosive power to reach top speeds on breakaways and to stop on a dime, muscle strength to deliver and take bone-jarring body checks, and agility and coordination to manoeuvre at high speeds while deftly handling a stick. By making sports nutrition an integral part of your game strategy, you can be ready for every workout and play at your best throughout each game. Follow these tips for optimal performance on the ice.

## BEFORE PRACTICE/GAME:



## Start Hydrated

- Start hydrating 24 hours prior to your game/training session
- Check urine colour: lemonade colour = well hydrated; apple juice colour = drink more fluid
- 2–3 hours before exercise: Drink 400–600 ml (14–20 fl oz) of water or sports drink
- During active warm-up: Drink another 240 ml (8 fl oz) — about 8 swallows/gulps

## What and When to Eat

- Focus on carbs
- Eat a high-carb snack 30–60 minutes before a game or a practice, to top off energy stores
- If you have more time before a game or a practice (4 hours), eat more; if you have less time (2 hours), eat less to avoid stomach distress

## Carbohydrates

are the main energy source  
for hockey players

## 2–4 HOURS BEFORE A GAME OR A PRACTICE

## Recommended amount of carbs

2 hours: 2.0 x weight (kg) = \_\_\_\_\_ grams (A)

0.9 x weight (lbs) = \_\_\_\_\_ grams (A)

OR

4 hours: 4.0 x weight (kg) = \_\_\_\_\_ grams (B)

1.8 x weight (lbs) = \_\_\_\_\_ grams (B)

Meals should be high carb, moderate protein, low fat, and low fibre

## High-carb pregame sample meals

Cold or hot cereal with low-fat or skim milk and fruit or fruit juice

French toast or pancakes with maple or fruit syrup

Toast with jam or honey, and low-fat yogurt

Breakfast burrito (scrambled eggs, salsa, and low-fat cheese in a flour tortilla) and fruit juice

Bagel or English muffin with jelly and/or peanut butter, banana, and fruit juice

Pasta or cheese ravioli w/low-fat, tomato-based sauce; French bread or low-fat breadsticks; steamed veggies; low-fat/skim milk; pudding snack; canned fruit

Turkey sub sandwich with tomato, lettuce, and mustard; baked chips; fruit juice; and low-fat frozen yogurt

Thick-crust veggie pizza, low-fat gelato, and canned peaches

Baked or grilled chicken, turkey, lean beef, or fish; steamed rice; dinner roll; cooked green beans; low-fat frozen yogurt; and fruit juice

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**30–60 MINUTES BEFORE A GAME OR A PRACTICE, TO TOP OFF ENERGY STORES****Recommended amount of carbs**

Aim for about 40–60 grams of carbohydrates	0.7g to 1.1g x weight (kg) = _____ grams (C)
	0.3g to 0.5g x weight (lbs) = _____ grams (C)

**Quick-to-digest, high-carbohydrate options**

	Carbs (g)
Fruit smoothie made with mango/banana/berries and low-fat or skim milk or yogurt (240 ml/8 fl oz)	30–35g
1 serving fresh fruit or 100% fruit juice (1 cup)	25–30g
Low-fat or fat-free yogurt (180-ml/6-fl oz container)	33g
Fat-free frozen yogurt, gelato, or sorbet (1 cup)	45g
PowerBar® Sport Energy™ bar	41–45g
PowerBar® Fruit Energize™ bar	43g
PowerBar® Energy Gel	27g
PowerBar® Gel Blasts™ Energy chews (1 pouch)	45g
Ironman PERFORM™ sports drink (600 ml/20 fl oz)	42g

Try a PowerBar® Energy Gel  
with a sports drink during breaks



PowerBar Energy Gel

**DURING PRACTICE/GAME:****Stay Hydrated and Energized****HYDRATE AND ENERGIZE AT EVERY BREAK IN THE ACTION**

- Drink about 150 ml (5 fl oz) during breaks or between shifts
- Be sure to get 30–60 grams of carbs per hour (for exercise >1 hour) or 45–90 grams of carbs per hour (for exercise >2 hours) to help delay fatigue and improve performance

**STAY IN YOUR HYDRATION ZONE:** Avoid losing more than 2% of your body weight

- Do this by drinking at least 400–800 ml (13–26 fl oz) water or sports drink each hour
- Drink more if you sweat more
- Ice is cold, but your body isn't; heavy pads and helmets + intense exercise = a lot of sweat

**CONSUME A SPORTS DRINK WITH SODIUM****THREE KEY PRINCIPLES OF SPORTS NUTRITION**

The three most important principles of a sports nutrition game plan are to stay **well hydrated**, provide energy for your muscles, and achieve optimal **recovery** after training or competing. Apply these principles correctly and you can maximize the gains from your training in order to perform at your best!

**AFTER PRACTICE/GAME:****Recovery Starts As Soon As You Step off the Ice**

- To start your muscle recovery, consume foods/fluids with carbs and protein within 30 minutes after exercise
- Sports drinks, energy/protein/recovery bars, gels, and chews make convenient and portable recovery foods
- Be prepared — pack recovery foods in your gear bag

**Carbohydrates to Replenish Muscle Energy Stores**

Consume carbs to help kick-start muscle recovery (Especially important if you have another game within 24 hours):	
Recommended amount of carbs	
Within 30 minutes	1.1 x weight (kg) = _____ grams (D) 0.5 x weight (lbs) = _____ grams (D)
<b>AND</b>	
Within 2 hours	Repeat same as above OR have a high-carb meal (D)
High-carbohydrate recovery options	
Rolls or bagels	PowerBar ProteinPlus® protein powder shake
Peanut-butter-and-jelly sandwiches	PowerBar® Recovery bar
Salted pretzels	PowerBar ProteinPlus® protein bar
Fresh and canned fruits, frozen fruit smoothies	PowerBar® Sport Energy™ bar
String cheese and crackers	PowerBar® Fruit Energize™ bar
Low-fat chocolate milk	

Try PowerBar® Recovery bar



PowerBar Recovery bar

**Protein to Help Build and Repair Muscle Tissue**

**AFTER HOCKEY GAMES AND PRACTICES:** Consume 10–20 grams of protein within 30 minutes

**FOR RESISTANCE TRAINING:** Protein intake just before and/or as soon as possible after resistance training is essential for optimal recovery, including the growth and maintenance of muscle tissue

FOR RESISTANCE TRAINING: CONSUME ABOUT 20–40 GRAMS OF PROTEIN AS SOON AS POSSIBLE JUST BEFORE AND/OR AFTER EXERCISE*	
One time (in one sitting)	20–40 grams just after exercise (E)
<b>OR</b>	
In two sittings	10–20 grams just before and 10–20 grams just after exercise (F)
<b>OR</b>	
In hourly intervals for up to 3 hours after exercise or until regular meals resume	5–10 grams just after exercise, and then 5–10 grams every hour for 3 hours (G)

\* Totals based on 0.4 grams per kg body weight

**Fluids to Rehydrate**

**AS SOON AS YOU STEP OFF THE ICE,** grab your bottle of water and/or sports drink

**AVERAGE FLUID LOSS DUE TO SWEATING FOR HOCKEY PLAYERS IN A GAME** = 1.4–4.5 kg (3–10 lbs)

**GRADUALLY DRINK** 1,500 ml per kg (23 fl oz per lb) weight lost

**CONTINUE REHYDRATING** until urine is pale yellow like lemonade, not darker like apple juice

**DAILY NEEDS:**

**AIM FOR A WELL-BALANCED DIET** with a variety of carbohydrates, lean protein, and healthful fats

**AS A HOCKEY PLAYER**, carbohydrates should be the focus of your meals

**DRINK UP EARLY:** Every morning when you wake up, have a large glass of water

**KEEP UP YOUR ENERGY LEVELS:** Eat 5–6 meals per day CONSUME MORE (AT THE HIGHER END OF THE

**RECOMMENDED RANGE)** on more intense training and game days

TOTAL DAILY CARBOHYDRATE RANGE		TOTAL DAILY PROTEIN RANGE	
6 to 10 x weight (kg)	= _____ grams (H)	1.4 to 1.7 x weight (kg)	= _____ grams (I)
2.7 to 4.5 x weight (lbs)	= _____ grams (H)	0.6 to 0.8 x weight (lbs)	= _____ grams (I)

**PUTTING IT ALL TOGETHER (REFER TO LETTERS FROM PREVIOUS CHARTS)**

	CARBS	PROTEIN	FLUID	COMMENTS
<b>BEFORE</b>	2–4 hrs: _____ (A or B) AND ≤1 hr: _____ (C)	Games/practices: Have a moderate-protein meal 2–4 hours before  Resistance training: 10–20 grams (F)	Start hydrating 24 hours prior to game/training session  Drink 400–600 ml (14–20 fl oz) of water or sports drink 2–3 hours before a game or a practice	
<b>DURING</b>	30–60 grams of carbs per hour for exercise >1 hour OR 45–90 grams of carbs per hour for exercise >2 hours: _____ (D)	Not required	Drink at least 400–800 ml (14–26 fl oz) per hour in small, frequent doses as play permits  Drink about 150 ml (5 fl oz) during breaks or between shifts  Use sports drinks with 500–800 mg sodium per 1 litre (32 fl oz)	
<b>AFTER</b>	Within 30 mins: _____ (D) AND Within 2 hrs: _____ (D)	Games/practices: 10–20 grams  Resistance training: 20–40 grams (E, F, or G)	Gradually drink 1,500 ml per kg (23 fl oz per lb) weight lost  Average sweat loss per game for hockey players = 1.4–4.5 kg (3–10 lbs)	
<b>DAILY</b>	_____ grams/day (H)	_____ grams/day (I)	Hydrate continuously throughout the day	

This food plan is intended to give general macronutrient and fluid guidelines while you are training and competing. It is not designed to be any particular caloric level.


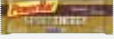





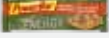





Information presented in this booklet is intended to impart general fitness, nutrition and health information. Nestlé is not engaged in rendering medical advice or services. The information presented in this booklet is not intended for diagnostic or treatment purposes. You should consult your doctor for medical advice or services, including seeking advice prior to undertaking a new diet or exercise program. Advance consultation with your doctor is particularly important if you are under eighteen (18) years old, pregnant, breastfeeding, or have health problems. Never disregard professional medical advice or delay in seeking it because of something you have read in this booklet.

# PRODUCT FEATURES AND BENEFITS

Canada Version

POWERBAR® PRODUCTS WORK BEST IN COMBINATION:

Mix and match products to meet your specific training and exercise needs.

	DESIGNED TO DELIVER BENEFITS TO ATHLETES	PROTEIN IN GRAMS PER BAR/ POUCH/TUB	CARBS IN GRAMS PER BAR	CONTAINS POWERBAR® C2MAX™ ENERGY BLEND	LOW SATURATED FAT (1 GRAM OR LESS)	0 GRAMS TRANS FAT PER SERVING	NO HIGH-FRUCTOSE CORN SYRUP	NO ARTIFICIAL FLAVOURS	
<b>BEFORE &amp; DURING EXERCISE</b>									
		1 BEFORE	2 DURING	3 AFTER					
	PowerBar® Fruit Energize™ bar	Delivers more energy to working muscles/ Easy to digest*	6g/bar	46g/bar	X	X	X	X	X
	PowerBar® Sport Energy™ bar	Delivers more energy to working muscles/ Easy to digest*	8–9.5g/ bar	40–43g/ bar	X	X	X	X	X
	PowerBar® Energy Gel	Delivers more energy to working muscles/ Easy to digest*†	0g–0.3g/ pack	27–28g/ pack	X	X	X	X	X
	PowerBar® Gel Blasts™ Energy chews	Fast energy	3g/pack	45g/pack	X	X	X	X	X
	Ironman PERFORM™ sports drink	Hydration/ fast energy	0g/ 591 ml (20 fl oz)	42g/ 591 ml (20 fl oz)	X	X	X	X	X
	Ironman PERFORM™ sports drink mix	Hydration/ fast energy	0g/ 500 ml (17 fl oz)	34g/ 500 ml (17 fl oz)	X	X	X	X	X
	PowerBar® Energy Bites™	Delivers more energy to working muscles/ Easy to digest*	11g/ pouch	58g/ pouch	X		X	X	X
	PowerBar® Harvest Energy™ bar	Long-lasting energy°	10g/bar	34–35g/ bar		X	X	X	X
	PowerBar® Triple Threat Energy™ bar	Long-lasting energy	10g/bar	27–28g/ bar		X	X	X	X
<b>AFTER EXERCISE</b>									
		1 BEFORE	2 DURING	3 AFTER					
<b>STRENGTH</b>		Supports muscle recovery	12g/bar	30g/bar			X	X	X
		Builds muscle ‡	20g/ pouch	38g/ pouch			X	X	X
		Builds muscle ‡	24g/bar	37–39g/ bar			X	X	X
		Builds muscle ‡	20g/ serving	7g/ serving		X	X	X	X

\* PowerBar® C2MAX™ Energy blend is designed to have the same blend of energy sources found in breakthrough studies to deliver 20–55% more energy than glucose alone. In another study, these energy sources improved athletes' cycling times by 8%. (This study was done with a drink containing glucose alone vs. 2:1 glucose to fructose.)

† Some flavours contain caffeine. † Only PowerBar® Harvest Energy™ bar double chocolate is dipped.

‡ Use PowerBar ProteinPlus™ protein bars, Bites™, or protein powder before and/or after resistance or strength training, to help support muscle growth and repair.

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4. American College of Sports Medicine, Sawka MN, Burke LM, Eichner ER, Maughan RJ, Montain SJ, Stachenfeld NS. American College of Sports Medicine Position Stand. Exercise and Fluid Replacement. Med Sci Sports Exerc 2007; 39: 377–390.
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6. [www.ausport.gov.au/ais/nutrition/factsheets/sports/hockey..](http://www.ausport.gov.au/ais/nutrition/factsheets/sports/hockey..)

## PARTNERS



POWERBAR is the recommended supplier of sports nutrition bars, gels, and sports protein supplements to the Professional Hockey Athletic Trainers Society™ (PHATS).



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