NUTRITION

Skate Harder & Longer

Your body is such an intricate machine – the only machine in the world that is not fully understood by anyone. In comparison, an automobile is a very simple machine, but people know that using anything but the proper fuel makes a car run poorly or break down altogether. Consequently, people would never think of putting anything but gasoline in their cars. But people don't have the same concern for their own bodies – they try to keep them running using all kinds of wrong fuel. The result is a body that sputters and eventually breaks down.

As you prepare for and recover from a hockey game, there are precise times to put specific foods and fluids into your body. The inability to distinguish between foods makes it difficult for you to eat a balanced diet and consume the right foods at the right time. A coach who demands hard work from players has the responsibility to teach them what and when to eat in order to fuel the very hard work required of them. Once they realize the power of certain food choices and how they can eat for hockey success, they will turn to nutrition as a competitive edge. It is also important for coaches to adopt the same nutrition guidelines they are teaching especially when they are with their players. ***If you are preaching hard work, physical preparation, and good nutrition, then just don't preach it – live it!***

NUTRIENTS

Six nutrients within four main food groups are essential for health and hockey success. The nutrients are carbohydrates, fat, protein, vitamins, minerals, and water. The food groups are grain products, fruits, and vegetables, milk products, and meat and meat alternatives.

Carbohydrates

Carbohydrates are the main source of energy during a hockey game. Complex carbohydrates come from the grain products group (formally known as the breads and cereals group) and the fruits and vegetables group. Simple carbohydrates are foods like table sugar and honey.

Fats

Fat does have some positive roles for the body: providing energy for sub maximal activity and protection for the body during impact, and serving many operational functions such as aiding digestion and vitamin transfer. But too much fat is very unhealthy and makes movement less efficient.

Protein

Protein's well – known function is to repair and build muscle tissue. Protein, made up of amino acids, is used as an energy source only if there are not enough carbohydrates available. Excess protein does not make you stronger, and it is not stored as muscle—it is usually stored as fat. The best sources of protein are the meat and meat alternatives and the milk products groups. Since many good protein sources are also high in fat, athletes need to choose their protein sources wisely.

Vitamins and Minerals

Vitamins and minerals are not an energy source, but they are needed in the energy production process. Excess vitamins are either stored in fat or are excreted in the urine. Excess vitamins and minerals taken as supplements will not improve performance, increase energy, increase strength, build more muscle, increase endurance, or prevent sickness. Dr. Sue Crawford, sport nutritionist cautions that "athletes should not allow supplements to give them a false sense of security. They shouldn't think, 'If I eat junk but take my supplements, I'm OK.' Supplements cover only a few of the missing nutrients; you need varied, wholesome food choices to get all the nutrients, and supplements can't undo a high-fat, low-fiber, low-water diet."

Water

Water accounts for more than 50 percent of your body weight and is essential to most body functions. It helps body temperature, run the energy production process, and build muscle, and it carries nutrients to body parts while taking waste products away. Sedentary people should drink eight cups of water a day. Athletes who lose a lot of water through sweat during daily practices, games and workouts need to drink much more water.

HEALTHY EATING GUIDELINES

For long-term health and wellness, along with enhanced sport performance, no product can replace natural food. Here are a few simple guidelines to steer you toward a healthy, balanced diet:

1. Eat a variety of foods to ensure you are getting all of the nutrients your body needs.
2. Select natural foods over processed foods. For example, orange juice is high in carbohydrate, low in fat, and has the vitamin C needed to maintain and repair muscle, cartilage, and bones. OJ also has a vitamin A, which strengthens the immune system, and calcium, which has a role in muscle growth and contraction. OJ contains magnesium, which is involved in blood sugar metabolism, niacin and thiamin, which play a role in the breakdown of carbohydrates, folic acid for growth and development, and phosphorus for nerves and muscles. OJ is a perfect post-game beverage, great for replacing depleted glycogen (sugar) stores and the water and potassium that have been lost through sweat. Potassium is important to the normal functioning of the heart muscles and nervous system.
3. Avoid deep fried foods and oil based foods that are high in fat.
4. Go ahead and eat a thick-crust vegetarian pizza for breakfast. Try oatmeal for lunch. Cereal with skim milk and a sliced banana, toast and jam, and orange juice is great for post practice refueling.
5. When you select low-fat main food items, don't ruin the good choice by adding high-fat, low-nutrient toppings and spreads.

CARBOHYDRATE: THE MASTER OF SPORT FUEL

Carbohydrate is the preferred fuel for intense hockey action. Muscle glycogen supplies the energy for playing hockey, but it is only stored in limited amounts. Since carbohydrate stores are relatively small, and hockey preferentially uses carbohydrates for energy, players need repetitive refueling, eating carbohydrates each day and meal. When your muscles run out of glycogen, your legs feel tired. Once fatigued, players lose speed, strength, and stride power; their skating ability

and technique is adversely affected. After the muscles' supply of glycogen is depleted, the body turns to the liver for glycogen. This results in low blood sugar, which causes mental fatigue and lethargy-not quite the best condition for a hockey game. Since the intensity of most games increases as the game progresses, a player's ability to give 100 percent in the third period is critical to the team's success or failure. There are two ways to increase your storage of glycogen: conditioning and carbohydrate loading.

Conditioning

Nutrition and training go hand in hand. Proper nutrition allows hockey players to train harder and longer. A well conditioned hockey player can then store more carbohydrates. Once they can store more carbohydrates, they can train with an even greater intensity, thus the cycle will continue.

Carbohydrate Loading

Hockey players need to carbohydrate load every single day. To meet the energy requirements and recover from the high volume of activity, players need to consume a diet high in carbohydrates every day, both before and after games and practices. It is equally or even more important to consume carbohydrates on practice days, as it is game days. In games, players don't share equal times on the ice, but on practice days all players skate hard the duration of the practice.

The Pre-game Meal

Five to six hours before a game, eat a large meal high in carbohydrates and low in fat and protein. Five hours leaves enough time for digestion but is not so long that you'll be overly hungry when you step onto the ice. Additionally, only 20 percent of the normal blood will be available at the stomach to continue digestion because the body is diverting oxygen to your skating muscles. Select pre-game foods you are familiar with so that you know your taste buds will allow you to eat an adequate amount, and you know the food's effect on your body – this is not the time to try the spicy bean dip for the first time.

A pre-game snack three hours before the game will supply a little more energy and prevent hunger pains during the game. The closer you get to game time, the lighter and more liquid the food. A pre-game snack should be foods like yogurt, fruit juice, bananas, bagels and low fiber cereal and skim milk.

Pre-game Meal Guidelines
- High carbohydrate
- Low fat
- Low protein
- Plenty of water and juice
- 5 to 6 hours before game
- Stick with familiar foods
- Eat easily digestible foods

Pre-game Fluids

Water is an important nutrient for both health and sport performance. One of water's roles is to regulate body temperature. Excess heat is dissipated in the form of sweat, and the body cools when the sweat evaporates. For the body's cooling system to work effectively, you need to maintain an adequate fluid level. Water is also required for the chemical reactions in the muscles that release energy for movement. This is why muscle tissue has higher water content than fat tissue – because more water is required to carry out the chemical reactions involved in the vigorous function of the muscle. Water is also a key ingredient of blood volume, so the heart, lungs, and entire circulatory system depend on your body's water level.

Prepare ahead for the fluids that will be lost through sweat by consuming plenty of water on the days before a game. Your kidneys need 60 to 90 minutes to process excess liquid, so stop drinking fluids 90 minutes before game time to allow the excess to be eliminated through the urine before game time. Drink one or two cups of water 5 to 10 minutes before your game to add a little extra fluid to help replace sweat losses.

NUTRITION DURING THE GAME

Ingesting liquid carbohydrates throughout the game will help ensure enough carbohydrate is available for energy late in the third period. Don't wait until the third period to think about replacing carbohydrates – begin in the first period. Once the game has started, drinking small amounts of carbohydrate does not cause hypoglycemia. (Exercise suppresses insulin release and prevents rebound hypoglycemia). The carbohydrate taken during the game can be used as energy. Commercial sports drinks are helpful during a game, when you want a diluted source of carbohydrate. More concentrated drinks are slow to leave the stomach and are a poor game choice.

Fluid Intake

If you do not replace fluids you lose as sweat, you dehydrate and your blood volume decreases. This affects blood circulation, and blood supply to the muscles shuts down, destroying your ability to maintain athletic effort. The muscles you are asking to perform for you on the ice cannot receive the volume of oxygen they need to function because your body preferentially keeps the limited blood volume for the heart and lungs. If you wait for your thirst mechanism to be triggered, which increases your desire to drink, you are too late. By the time the brain discovers this and sends the message that you are thirsty, you've already lost 1 percent of your body weight. Your work performance will begin to become severely hampered.

Thirst is not a good indicator of your water needs. To prevent dehydration during games, drink well before you are thirsty. Your body takes in and retains water at a slower rate than it loses fluids through sweat. So, to prevent falling too far behind your body's water needs, and to prevent dehydration, begin drinking water right at the beginning of the first period. Try to drink water throughout the game, between shifts and periods. Drink as much as you can without causing stomach discomfort.

POSTGAME NUTRITION

As a general rule, for every pound of weight loss after a game, you need to drink two cups of fluid. The best sources of water are plain water, and juices. Caffeinated pop, iced-tea and alcoholic drinks slow rehydration and recovery.

Postgame carbohydrates are even more important than your pregame meal. Immediately after intense activity, you have 20 minutes when your muscles are most receptive to taking in carbohydrates and storing them as muscle glycogen. As a general rule, the sooner the better. A banana and two cans of juice during these 20 minutes replenish a lot muscle fuel. If you don't take advantage of this 20 minute window, it will take you longer to get your energy stores up to the same level. Once players leave the arena, coaches have no control over what they eat. But to take advantage of the 20-minute window, carbohydrates must be consumed right in the dressing room. If possible have specific foods and drinks ready in the dressing room area. Fruit and juice are better choices because they offer more healthy nutrients in addition to carbohydrates and water. Sport drinks are more suited for during the game, not after. Plain water is also necessary to help restore the body's fluid balance.

The Postgame Meal

After players have left the rink, they should eat a full postgame meal one to two hours later. This meal is similar to the pregame meal, consisting of carbohydrates, fruits and vegetables and fluids. Carbohydrates can be categorized as having low, moderate, or high glycemic levels. High glycemic foods are converted to blood glucose and transported to the muscles at a faster rate than low-glycemic foods. This is very significant after exercise and after games, when athletes are trying to speed up the recovery of muscle glycogen.

All Day Tournaments and Back to Back Games

Liquid carbohydrates on the bench will allow players to sip a bit between each shift. After each game, there should be carbohydrate sources available in the dressing room (if possible), juice, fruit, bagels, sport drinks so all players can take advantage of the "20 minute" window of opportunity. At all day tournaments, there is obviously not enough time to eat and fully digest a restaurant meal before the next game. The dressing room carbohydrates provide immediate carbohydrate replenishment, plus are of a small enough volume so that digestion should be complete before the next games.

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