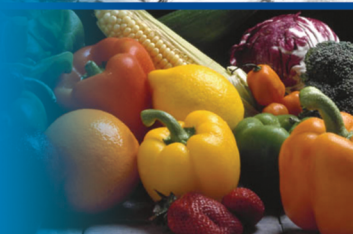




CLEAN SPORT IS MY GAME

Alternate solutions for the betterment
of performances



Canada

Éducation,
Loisir et Sport

Québec



MISSION

Aware of the importance of its mandate and dedicated to realizing its goals, Hockey Québec vows to adopt and apply the following mission:

«As **leader**, ensure the proper **framework** for ice hockey while prioritizing the development, promotion, implementation and monitoring of **programs** and fostering the development of the **individual**. »



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THE ALTERNATIVES TO DOPING

Document prepared for
Hockey Québec's anti-doping program

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INTRODUCTION

**Presentation of
the Document**

Defining Doping

**Necessity of an
Antidoping Program**

INTRODUCTION

PRESENTATION OF THE DOCUMENT

In today's world, people, whether they are from the world of sport or other branches of society, look for performance. They are ready to do anything to offer better performances to overcome competition. Quebec's minor hockey is faced with that phenomenon and it has grown widely over the last years. We cannot forget that the improvement in performance depends on the time spent doing the activity and the quality of training. The constant improvement of performance is because of more rigorous physical training techniques and psychology. The more an athlete trains properly, the more he will develop his athletic talents. Unfortunately, emphasis is placed on immediate results that push athletes to consider quick ways such as drugs and medication. Many athletes look for other solutions to doping and believe that a performance enhancing magic potion will be authorised. It is important for them to see the difference between means and substances.

Many means are made available to athletes by different sport specialists. Those means can improve the performances that will not put their health at risk while respecting sport's ethics. We must not use another substance for a doping product. The alternative substance reproduces the same pattern that a doping hockey player follows.

This document was created to develop concrete and realistic tools that are directly related to the competition and training schedule sustained by a Junior or Midget level hockey player.

DEFINING DOPING

Doping is defined as the use, during a sporting event or in preparation to a sporting event, of a substance or method that artificially modifies the performance, and that is restricted by sport authorities.



NECESSITY OF AN ANTIDOPING PROGRAM

Hockey Quebec's mission is to encourage the development of hockey players as individuals. Therefore, we must offer a healthy environment to all hockey players that is filled with values such as respect of the rules and of the people

For an organisation like Hockey Quebec who takes care of young athletes, it is important for us to preserve their health. The dangers associated to the use and over consumption of doping products are well documented to incite us to put in place measures to prevent that problem. The effects can go from simple faintnesses, to permanent and irreversible after-effects and extreme cases, death.

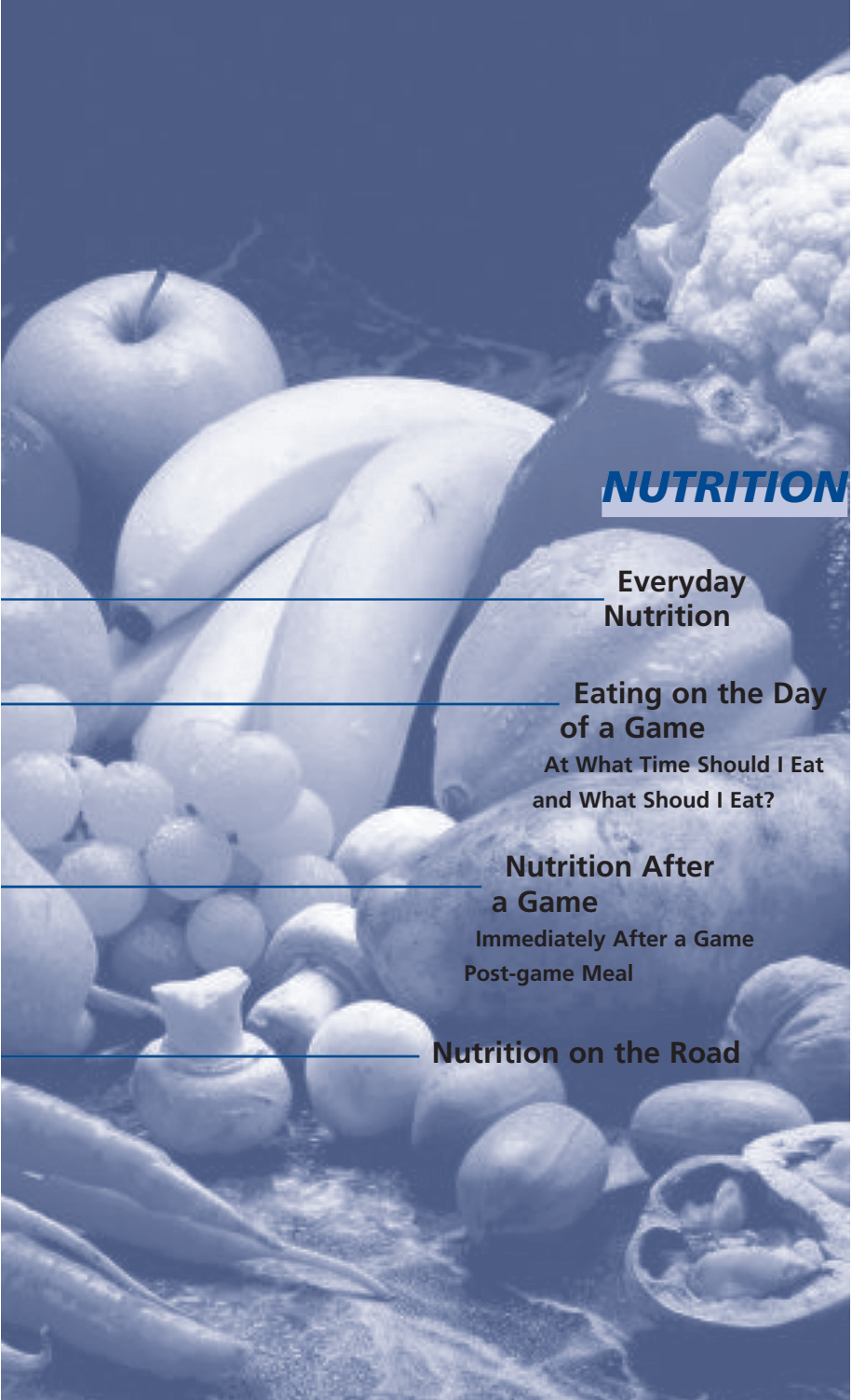
The affiliation to a sport is made on a voluntary base; the player is free to register and is also free to quit. When a player registers to a Hockey Quebec affiliated team, he signs a contract in which he engages himself to respect the rules, and amongst them, not to use banned substances. Doping is a rupture of the athlete's contract that betrays his engagement toward his sport and the other participants.

Many persons are in a favour of a legalization of doping in sports. Such a change would mean asking every hockey player to put his health on the line to compete against those who are doped. Accept doping can only tarnish the image of the sport and, inevitably, lead to its loss.

ALTERNATIVES TO DOPING

The use of doping products by hockey players is often caused by the lack of confidence in their abilities and because they believe to have reached the maximum of their abilities. For them, only the doping products can allow them to improve their performance. They are wrong because different alternatives to doping exist, and they can improve their performance without being harmful to the player's health. These alternatives rely on the different means the sport specialists can offer to athletes. In this section, we will speak of sport nutrition, hydration, off-ice training, sport psychology and recovery. These recommendations are based on studies and concepts used by physical assistants, nutrition specialist and sport psychologist and they are real doping alternatives as elements that can improve the quality of his play. Then, the player will have a higher confidence in his abilities.





NUTRITION

Everyday Nutrition

Eating on the Day of a Game

At What Time Should I Eat
and What Should I Eat?

Nutrition After a Game

Immediately After a Game
Post-game Meal

Nutrition on the Road

NUTRITION

Food is for humans what fuel is for cars. So, we have to look for the best mix to give our best possible performance. Consequently, if an athlete wants to perform, he must ingest more liquids, more energy in the form of carbohydrates, fat content and proteins. Hockey is a sport where short periods of efforts are required and carbohydrates are the primary source of energy for such an effort. The more the training time and the intensity rise, the more the need for energy rises. When an athlete ingests a bigger quantity and broader variety of food to allow him to have enough energy, he also gets the proteins, the carbohydrates, the vitamins and the minerals necessary for his body to function properly. Quantity is not the only thing that matters when athlete is competing; there is also the appropriate moment to eat that food. To optimize on-ice performance, here are a couple of indications for your nutrition that will allow you to eat better every day, the day of a game and after a game.

Everyday nutrition

Even if he does not have a game, a hockey player must eat properly. It is very important that your body never misses the essential nutrients, by that, we mean substances absorbed by the human body to make sure it functions properly. Here are a few notions that will help you have the necessary energy for your body on the days you don't have a game.

- It is suggested to have **5 to 6 meals or snacks every day** with **2 to 3 hours between each of those meals**.
- A hockey player should eat about **40 kcal per kg of body weight**. So a player who weighs 85 kg (187 pounds) should ingest 3400 kcal.

60 to 65% of the calories should come from carbohydrates because they are the best energy source for an athlete. It is better for an athlete to have complex carbohydrates as they are slowly assimilated in the blood system thus give energy on a longer period. We find them in **cereal products** like pasta, rice, cereals or whole wheat bread. We must not forget to eat simple carbohydrates that will give quick energy. The glycaemia index of carbohydrates, therefore, the ability for food to raise the blood sugar level compared to glucoses, is different for each one of them. Carbohydrates with a high glycaemia index will increase the level of insulin (sugar) in the blood faster. You can also consult Annex 1 in which you will find information on the glycaemia index of food. There is also a lot of information on the Web site of the Canadian Coaches association at www.coach.ca under the resource/sport nutrition tab. The cereal products as well as fruits and vegetables will give many vitamins and essential minerals.



15 to 18% of the calories should come from proteins. You can also count the quantity of necessary proteins by multiplying your weight in kilograms by 1.4 to 1.8 grams of proteins. The answer to the equation will give you the amount of grams of proteins you should have every day. **The proteins will allow you to grow and to renew your cells and they are the principal component of your muscles.** We essentially find proteins in **meat and substitutes** like poultry, fish and beans and also in milk products like milk, yogurt and cheese.

20 to 30% of the calories should contain **lipids**. We need fat content in what we eat. Effectively, it is a macro-nutrient that provides energy. **The fat content provides transportation for certain vitamins.** It is not necessary to look to integrate fat content in our diet. The food in the meat and substitutes group and in milk products group automatically provides a lot of fat content. Without forgetting vegetable oil, butter and margarine that are used to cook, the sauces and dressings and jam. Check the *Canadian Food Guide to Healthy Eating* to have the good sources of fat and the necessary quantity for your body functions.

It is very important for an athlete to have breakfast every morning because that meal provides the necessary energy for the body to begin the day. When you wake up in the morning, you haven't eaten for a period of 8 to 12 hours. Studies have proven that breakfast helps to improve mental and physical capacities. Furthermore, it helps to provide many important nutrients in the diet. If you are not used to have breakfast, begin with a yogurt or a fruit until you can have a full meal.

The list of carbohydrates sources in Annex 1 will allow you to make the difference between complex and simple carbohydrates. There is also a lot of information on the www.coach.ca Web Site. Even if fruits and vegetables are simple carbohydrates, try eating 5 to 10 servings every day because they will provide vitamins and essential mineral that are essential for the human body to function properly.



Eating on the day of a game

Every player has his own routine the day of a game. That routine applies to his nutrition. There are many urban legends concerning eating before a game and each player has his own tricks, but one thing is for sure, it is essential to have carbohydrates the day of a game and to drink much liquid. (See the section on hydration) You have to be cautious with some food. You have to limit your consumption of the following food:

- Food rich in proteins because it is slowly digested and has a dehydrating effect.
- Food that is rich in fat because it is slowly digested.
- Food rich in simple carbohydrates like honey and table sugar in the hour before the effort because an important rise of sugar in the blood can be followed by a fast reduction of it when you begin your effort, and it can affect the performance on the ice.
- New food because it may cause digestive problems.
- Alcoholic beverages, such as beer, wine and liquor, because they have a dehydrating effect.

Here is a list of food to eat cautiously:

- Spiced food
- Food rich in fibres (bread, cereals and whole wheat cookies)
- Gas generating food (cabbage, cauliflower, broccoli, garlic, corn)
- Food and drinks with caffeine (coffee, tea, cola, chocolate, etc.)

At what time should I eat and what should I eat?

First of all, here is a little tip on the composition of your meals: carbohydrates should be 2/3 of your plate and the other third should be proteins. For example, 2/3 could be pasta and the other could be a chicken breast with vegetables. The meal planned for before the game should also be planned the day before. Have a supper rich in carbohydrates with two glasses of water and, on the day of a game, your breakfast and your lunch should be rich in carbohydrates. (Use the Annex 2 for examples of meals rich in carbohydrates.)



Ideally, the last meal before the beginning of the effort should be taken 4 to 5 hours before it. That meal should have 500 to 800 kcal of which, 65% will be carbohydrates. If you have less time and you only have only two to two and a half hours, you should have between 300 and 500 kcal and 70-75% in carbohydrates. Finally, if you have less time than that, such as only one to two hours, it is suggested to have between 200 to 250 kcal and at least 75% of it should be carbohydrates. You will find two examples of menus in the Annex 2 that will help you apply those principles.

Nutrition before a hockey game is very important and must be planned ahead of time. One must wisely choose the food to be eaten that day. See Annex 3 for food to be eaten and avoided on the day of a game to help you make the right choice. Ask the help of your parents or of the family where you live to plan your weekly meals depending on your schedule. Don't forget, your body is like a car and it is your responsibility to give it the best possible fuel for it to perform.

Nutrition after a game

After having played three games in four nights, we sometimes ask ourselves why our legs feel heavy and why we lack energy. Midget and junior level hockey players don't always know what to do after a game to improve the recovery process. How many times over a season do you eat junk food after a game? If the recovery process is not immediately engaged after the game, a lack of energy will be noticed in the muscles and that could lead to fatigue, bad performances and even, sometimes, injuries. Even if you're mentally ready, if you don't have a sufficient energy reserve in your muscles, you will not be able to perform adequately. Therefore, you must take the habit after each game or training session of taking the necessary means to regenerate your reserves of glycogen (sugar reserve in the liver and the muscles) and to re-hydrate your body to recover the liquids lost during the effort period. This requires a lot of discipline and is a process that, once it is applied, will help you perform at an optimal level. The creation of a recovery plan after a game that allows the necessary nutrients to be provided at the right time becomes an essential tool and must one of your priorities.

Immediately after a game

After a game or a training period, it is essential to have carbohydrates. Effectively, it is recommended to consume 1.5 grams of carbohydrates per kilogram of your body weight to regenerate your reserves of glycogen 15 to 30 minutes after the effort. So if you weigh 80 kg., you must have 120g of carbohydrates. You will find a chart of portions for certain food that are the equivalent of 30 g of carbohydrates. (See Annex 4) It is better to get the carbohydrates in liquid form because we have less appetite after a



game or a training session. After that, complete with a meal or a snack that are rich in carbohydrates. Studies have shown that the consumption of 6 to 10 grams of proteins combined with carbohydrates after an effort have an effect on the time it takes to regenerate the muscular glycogen. Those proteins will also allow to repair the muscular fibres that could have had been altered during the session. Nevertheless, the more you wait to get your proteins and carbohydrates after the effort, the less important the effect will be. What we encourage you to get is fruit juice, chocolate milk, recovery drinks that contain proteins (Boost, home-made shake, etc.), fresh fruits like water melon, oranges and grapes. You can also prepare your own recovery drink. (See Annex 5.)

Post-game meal

The hours that follow are as important as the first 30 minutes following the effort. To get the best regeneration of glycogen, you must have a gram of carbohydrates per kilogram of your weight every hour following the game until your next meal. So, if you weigh 80 kg, you should have 80 g of carbohydrates every hour until your next meal.

Typical post-game meal :

- 120 g of meats, poultry or fish
- 750 ml of pasta or rice
- Salad with dressing (non creamy is best)
- A glass of milk, yogurt or whole wheat cookies

Finally, for your post-game meal, it should have complex carbohydrates and proteins. Here is an example of a typical meal and don't forget that you can increase the quantities of bread, fruits and vegetables or of sugar dessert if you still feel hungry because it is important to maintain your body weight during the training and competition season:

Moderately salt your food to rebuild your reserves of sodium. If you loose more than 3 kilograms, about 8 pounds, while training, add a lot of salt to your food and insist on having very salted food, like vegetables juice, lives or salted nuts.

Nutrition on the Road

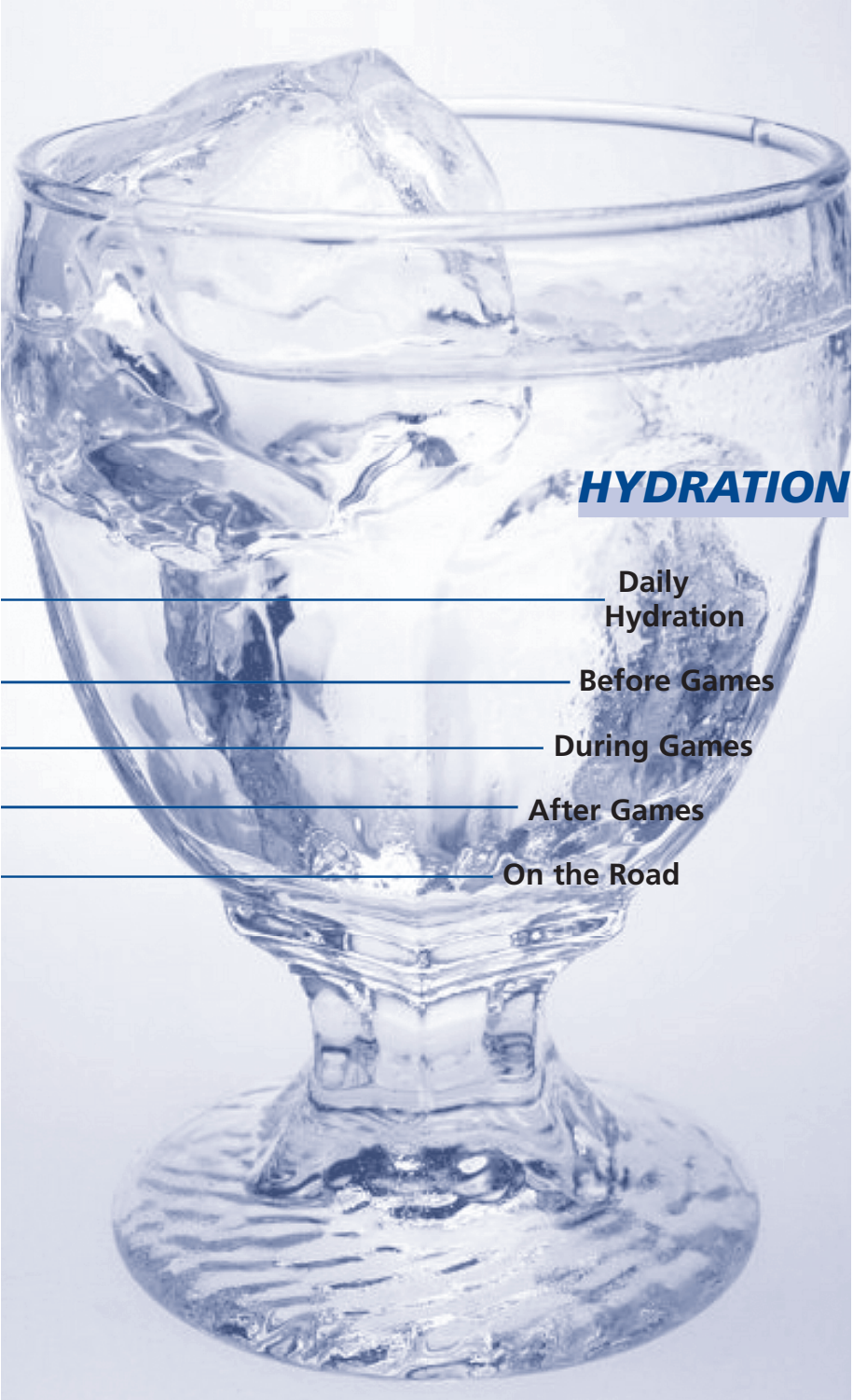
Nutrition during long trips may require a little bit more effort the athletes that have to keep on feeding themselves properly, especially when most of the meals are taken at a restaurant. During those trips, the nutrition plan of the players must have enough energy, like carbohydrates and proteins, to make sure he can still perform on the ice.



Hydration is also very important. Generally, the teams organise a pre-game team meal that gives the control on what players eat and most of the time those meals are rich in carbohydrates. If you are alone and you have to choose your meals, always check the way the food is cooked. Meals associated to words like fried, crispy, creamy or with cheese may be too rich. Instead, choose food that has been boiled, steamed, poached or grilled without grease. Always choose known food and sure hits. That will lower the chances of digestive problems.

During trips, always bring snacks and healthy meals that have a lot of carbohydrates like sandwiches, cold meals, salted cookies, granola bars, fresh or dried fruits, pretzels, bagels or energy bars. Make sure you have enough for the whole trip and anticipate delays by carrying more food and liquid. It will be harder for you to buy junk food during stops. On the move, mainly eat food with a high level of carbohydrates. To help you make healthy choices on the road, you will find in Annex 6 a list of food to have and to avoid when you eat a restaurant.



A high-quality photograph of a clear glass filled with water and several ice cubes. The glass is a classic tumbler style with a thick base. The water is clear, and the ice cubes are partially submerged, creating reflections and refractions. The background is a soft, out-of-focus light blue.

HYDRATION

**Daily
Hydration**

Before Games

During Games

After Games

On the Road

HYDRATION

Daily Hydration

Hydration is a big part of the fuel a human being must bring to his body. Adequate and frequent hydration will increase the capacity to quickly recover. The minimal daily needs can be calculated like this:

$$\text{Minimal daily hydration need} = \text{weight kg} \times 20 \text{ ml}$$

So if a player weighs 85 kg, he should drink $85 \times 20 = 1700$ ml. Divide by 1000 to know the quantity in litres. That equation is only used for the minimal consumption of an inactive person and the quantity of water drank during the exercise is not part of it.

We must not wait to be thirsty to drink water. When we are thirsty, we are already dehydrated. Abundant and clear coloured urine is the sign of a good hydration. If your urine is dark, you must drink more water. Drink regularly during and between meals.

If daily hydration is important, hydration before, during and after a training session or a game is essential for an athlete. Here are a few recommendations that will assure an optimal hydration while an effort is given:

Before games

- The day before a game, drink two glasses of water before going to bed (500 ml).
- Drink two glasses of water when you wake up in the morning the day of a game or practice.
- Two hours before a game or a practice session, have, in small quantities, two glasses of water.
- Drink a glass of water or of Gatorade 15 minutes before a game.
- Drink a lot of water on the day of a game.

During games

- Drink 150 to 350 ml of water every 15 to 20 minutes.
- The best drink during a training session or game is water.
- At least two glasses (500 ml) of water or energetic drink (Gatorade, home-made energetic drink) between each period. Because the loss in sweat vary very importantly between each players, check the weight you have lost during your practice session by weighing yourself before and after such a session. That will allow you to best determine the quantity of liquid to drink during a game.



After games

To best deal with your quantity of water to have after a game, it would be best for you to weigh yourself before and after a game. You should drink 1 to 1.5 litres of water per kg loss during the game. So if you have lost 3 kg (7 pounds), you should drink 3 to 4.5 litres of water after your game.

N.B. : Don't drink too much alcohol during your recovery period (after the game) if you play the next day or two days after your game. That may impair your recovery and the integration of glycogen in the muscles and in the liver.



On the road

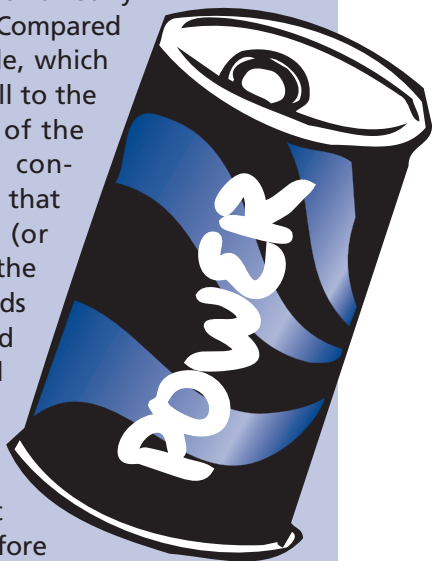
- Drink at regular intervals.
- Bring sport drinks and water with you.
- Lower your consumption of beverages with caffeine and alcohol because they are diuretics, drinks that stimulate the secretion of urine, which may increase the loss of liquid.
- Bring your own bottles for the duration of the trip because drinking water during the trips may cause gastric problems, meaning digestive problems.

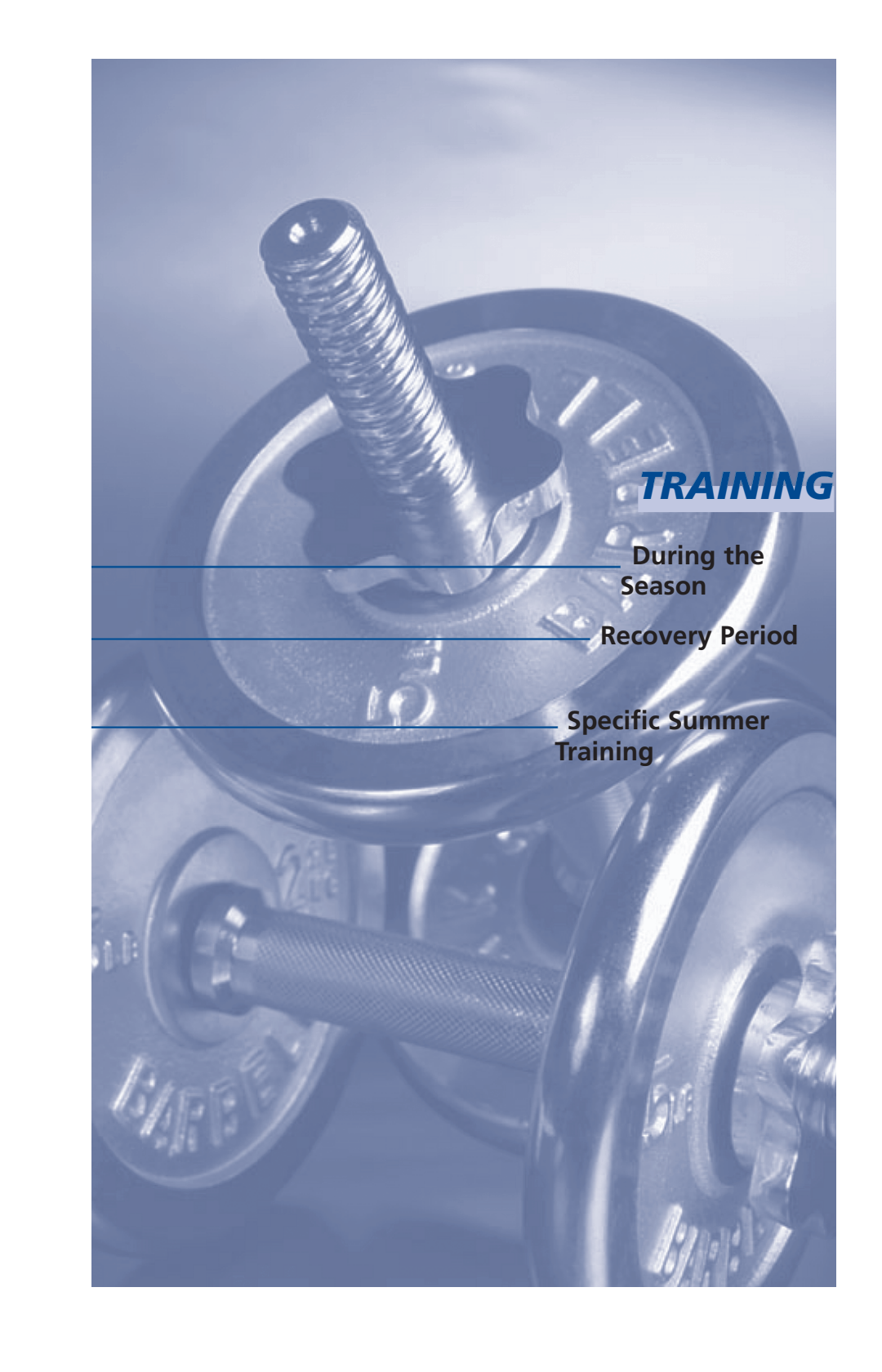
We must make a distinction between sport drinks like Gatorade (it essentially contains water, carbohydrates, sodium, potassium and magnesium) from energy drinks like Red Bull, Guru, etc. that contain caffeine, herbs, ma-huang, etc. and that are not recommended during a physical exercise.



Advice concerning energy drinks

Many athletes want to try and use energy drinks like Red Bull, Hype and Guru. Those athletes have to compose with a very charged scheduled between sport, studies and the personal life, and the idea of getting extra energy in a drink may seem like the ideal solution. Hockey players can't escape that. What makes up those drinks? Is it really efficient? The answer is no. Compared to sport drinks like Gatorade, which composition adapts very well to the needs during games, most of the energy drinks contain a concentration of carbohydrates that is higher than 10% (or 10gm/100ml) that will slow the process of absorption of liquids through the intestines toward the blood and that will impair re-hydration during the physical exercise. Be it only for that reason, hockey players should not drink those energy drinks before or during a game. Also, the quantity of caffeine in those beverages may impair the performance because caffeine is a diuretic and a laxative that can cause dehydration. The dosage of caffeine in the drinks is not always exact and that increases the risks of failing a doping test for an athlete. Is it worth it? To get more information on athlete hydration, you can check the article "Nutrition and Hydration for Team Sports" on the Web Site of the Canadian Coaches Association under the Resources/Sport nutrition tab.





TRAINING

**During the
Season**

Recovery Period

**Specific Summer
Training**

TRAINING

Hockey players often use doping agents to increase their strength, their muscular mass, their endurance and their recovery. Prescribing and periodizing a training program specific to hockey will allow you to develop those qualities, on the muscular level as well as the cardiovascular level and will help increase the performance. Here are the three big annual training phases with their characteristics that will help you understand the reasons and the components of each phase. The goal of this section is not allow you to create training programs but really to inform you on the characteristics of the different types of programs depending on the period of the year. For the prescription of a program and follow-through, it is better to ask a kinesiologist¹ or a physical trainer.

During the season

Many players put in a lot of time and money to get to training camp in the best possible shape. When the season begins, those players stop training until the end of the season thinking that what they have gained during the summer period will stay all season. In fact, if a player stops training during the season, the gains and anatomical adaptations acquired will be lost very quickly. To improve the speed of his shot, his top speed or his abilities to change direction on the ice, a player must maintain or improve his strength and power. The objective of a program during the season is to maintain his muscular qualities developed during the summer period and his preseason training that will help him be in top shape when the playoffs come.

That program will be different from any other training program. One of the main differences is the frequency. During the games and the training sessions, players need a high level of energy. So, the program should consider the schedule of the games, of the training sessions and of the trips. A player shouldn't train in strength or power within 48 hours of a game and not 24 hours after a game to allow him to fully recover and give him the chance to fully benefit from his training. That program should include training in strength, power and agility especially for the lower part of the body and the trunk. Exercises that will require the strength of the top of the body should also be included. Weights used during the training session should increase during the season and the number of repetitions should decrease. Hockey is a sport where power is very important. So a program in strength and in power should contain 3 to 4 series of 6 to 10 repetitions with a heavy weight, with breaks of 120 to 180 seconds between each series. Another reason to use that training method is that it allows you to produce less lactic acid than you would in endurance training, so there is no muscle pain that can affect the performance.

¹Kinesiologist : The kinesiologist is a professional with a university degree in kinesiology who, by personalised and secure interventions in physical training, contributes to maintain or improves the health of individuals.



There should be two training sessions every week that should last 45 to 50 minutes and the program should change every two months. For security reasons, it is very important to always train with a partner. On the cardiovascular training level, the objective should be to maintain the two systems used in hockey, the aerobic and anaerobic system. The aerobic system will give you a faster recovery between each of your shifts on the ice. That system uses oxygen to produce energy. The anaerobic system is highly required in hockey because it is an irregular sport where we have to give short laps of efforts with pauses in between. It is an energetic system that doesn't use oxygen but that produces lactic acid, the substance that makes that our muscles burn during the effort. Those systems will be maintained during the team's practices.

Training during the Season

Goal

- Maintain the muscular qualities developed during the off-season and the preseason training.

Priorities

- Maintain the cardiovascular and muscular qualities: anaerobic and aerobic system, the muscular strength, muscular endurance, the speed, the power, the quickness and the flexibility.

Key points

- Muscular training
 - 3 to 4 series
 - 6 to 10 repetitions
 - 6 to 8 exercises
 - Rest 2 to 4 minutes between each series
- Flexibility and jumping exercises
- Agility and cardiovascular exercises are done on the ice during the team's training sessions.

For players who have never trained or who haven't trained during the off-season, it would be good for them to a training specialist or your team's physical trainer. He will make an evaluation of your physical condition to establish a program based on your level of experience. A player with no experience in training should start with a training program that should have two or three training periods every week for four to six weeks, incorporating exercises that will allow an anatomical adaptation. After that, the player could start a more intense program with strength and power exercises.



Recovery Period

When the season is over, it is important to take a pause to allow the body to recover. The mental and physical fatigue accumulated over the season should be eliminated. During that period, it is very important for you to rest, relax, heal your injuries, recover and look back on your season.

You had a busy schedule during the season and it is now time to change your life style and relax. Take some time for you to have fun, visit family and friends. Take care of your body who has worked all winter long, mentally relax and clear your mind. After a few days of rest you may start to do some physical activities that will require different muscles then the ones used during the season. You can practice other sports like tennis or soccer for example and do general very light muscular exercises. That will allow you to keep a basic physical shape. It is also the best time to see health professionals to take care of your injuries. Finally, at the end of your recovery period, after 2 to 4 weeks, do a debriefing of your season by asking yourself what were the highs and the lows of your season. Once that is done, go on to your next season and look ahead to establish new goals for your next season and give you the means to achieve them.

Recovery Period

Goal

- Fuel up with energy, both mentally and physically.

Priorities

- Physical rest.
- Psychological rest.
- If it applies, heal your injuries.
- Recover from the over the season accumulated tensions.
- Do a debriefing of the season.

Key points

- Gradually decrease the intensity
- That period should last over 2 to 4 weeks
- Do other activities
- Take care of your body



Specific Summer Training

Following that break, you could start your specific summer training that will allow you to develop your muscular and cardiovascular qualities. A physical trainer can plan a training program specific to your needs that respects your level of training experience. A hockey specific program should include muscular training (general and specific), aerobic exercises (aerobic and anaerobic exercises), flexibility, plyometric and agility exercises. If the program doesn't have those components, it should be better for you to contact your organisation to make sure they can refer you to a qualified trainer. A summer period training program should last 10 weeks and should include a general training phase and a specific training phase. The off-ice training could be compared to the building of a house, because all hockey players need a base to progress in their training. A hockey player's ultimate goal is to be faster, more powerful and more agile. To achieve that goal, you should develop your cardiovascular system, your muscular strength, your muscular endurance and your flexibility. For example, if a player wants to improve his power and his speed, he will always have to push his limits. It is impossible to go over his elements if he can't recover quickly enough between each series. So the development of your cardiovascular endurance will allow you to recover quickly. The off-season training will also give you the opportunity to work on your weaknesses.

Many theories, training methods and training periods exist that may vary depending on your trainer, your needs or your position. It is highly recommended to have a frequent supervision of your training. The ideal situation is to train daily with your physical trainer to always keep intensity in your work and an optimal motivation. But all of that, depending on your budget, will be achieved with a trainer that best fits your needs.

Off season Training

Goal

- Develop and maintain the basic muscular and cardiovascular qualities.
- Develop the muscular and cardiovascular qualities that can maximise the performance of a player.
- Eliminate weaknesses.

Priorities

- Develop cardiovascular endurance, strength, muscular endurance and flexibility.
- Develop power, speed and quickness.
- Go on from general training to specific training and apply it to technical abilities.
- Maintain cardiovascular, muscular strength, muscular endurance and flexibility qualities.



Off season Training (suite)

Key points

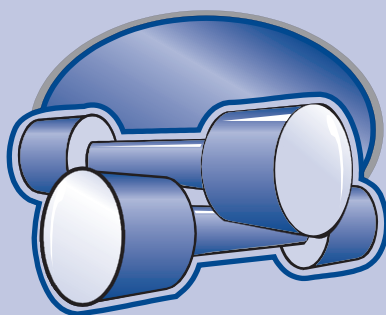
- Must last at least 8 to 10 weeks.
- General and specific training phase.
- Supervision by a physical trainer.

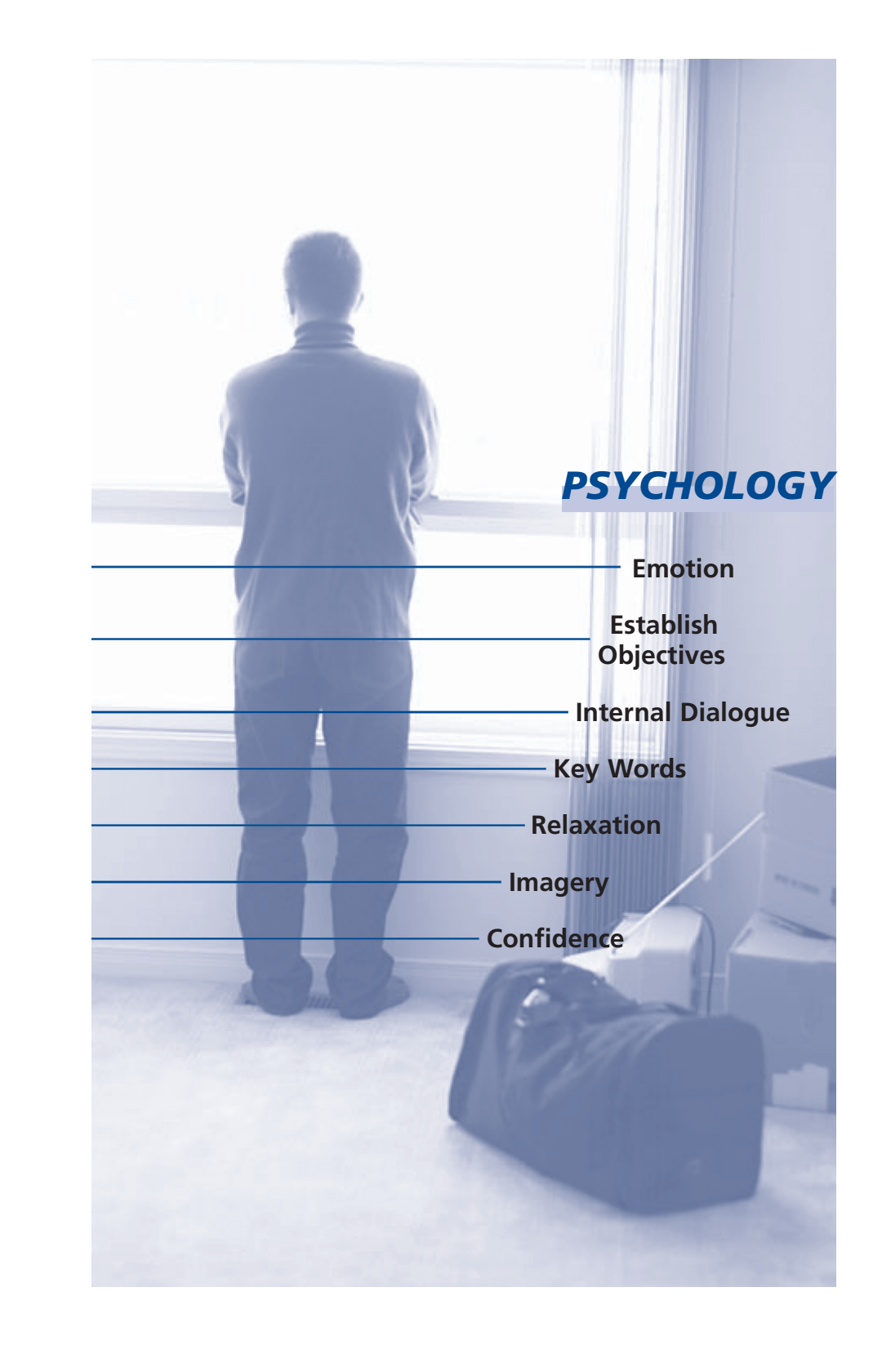
How to choose your strength and conditioning coach ?

There are more and more strength and conditioning coach that are specialized in training hockey players. You still have to be cautious when time comes to choose your strength and conditioning coach. Many persons improvise themselves as personal trainers or strength and conditioning coach and their lack of knowledge and experience with hockey players may impair your development. Here are a few questions to ask in order to chose your strength and conditioning coach :

- What's your academic experience?
- Do you have specific certifications?
- Have you ever trained hockey players before?
- How much do you charge and what does that include?
- How do you see my training?
- Do you encourage the use of products to improve the athletics capacities?

It is recommended to shop for a strength and conditioning coach. Try to meet many and based on those meetings, you will be able to chose wisely and respect your budget, yours goals and your training experience.



A person is seen from behind, standing on a carpeted floor and looking out of a large window. The scene is dimly lit, with light coming from the window. On the right side of the image, there is a vertical list of psychology-related terms, each preceded by a horizontal line. The word 'PSYCHOLOGY' is written in a bold, italicized font at the top right. In the bottom right corner, there is a dark bag and some boxes.

PSYCHOLOGY

Emotion

Establish
Objectives

Internal Dialogue

Key Words

Relaxation

Imagery

Confidence

PSYCHOLOGY

When we think of an athlete's training, we often forget a component that can make all the difference between a victory and a defeat: mental preparation. Effectively, many psychological factors may influence the performance of hockey players. The use of doping agents to perform is often influenced by the psychological state of the athlete. Mental training can help a hockey player improve his performances. Each player is different and all don't have all the same needs. But there are certain concepts that can be used by all. Here are a couple of tools that will help you improve your confidence, the control of your emotions and your concentration, the three "c's", three essential qualities to have success.

Emotion

One of the first things to do is to ask yourself why you play hockey and why you do high level sport. What does hockey bring to you? There are many reasons that may push a child to play hockey and those reasons are often related to the joy that activity brings, to the challenge of learning new abilities and accomplish and achieve goals as a team. Those reasons have given you the ability to develop technical, physical and psychological abilities. It is important to know the reasons why you play hockey. The answer to that question will let you realise how lucky you are to practice that sport with emotion and have fun on the ice.

Establish objectives

Hockey players must establish objectives at the beginning of the season. Those objectives must be realistic and concrete. If a player knows his limits, his strengths and his points to improve, he will be able to make a better evaluation of his situation and establish reachable objectives. That will give him a direction in his efforts. A meeting with the coach at the beginning of the season should be held so the expectations of the coach toward his players are known in order that players know where they are going. The objectives should not only be based on results, but also on your behaviour and your attitude at each training session and game. For example, your objectives could be to stay positive or to relax before each game, and be less stressed.

Well formulated objectives for an athlete are essential so he can improve and that will help organise and evaluate his progress.



Internal Dialogue

Internal dialogue is those little voices in your head, and that is a key point that allows you to control your thoughts. As soon as we think of something, we talk to ourselves about it. The little voices in our head are everywhere and we don't always realise their presence. They can be positive and negative and they have an impact on our self-confidence and on the performance. A player who is scared of failure will have a negative tendency and will always expect the worst. Therefore, it is important for a hockey player to be aware of those voices because they may impair his performance. The objective of the player should be to control them as best as possible when he performs and when he doesn't and to control them before and after a competition. It is important to understand that the best way to control our thoughts is to not put them on hold, so, you must do activities, plan properly your days, think of that you have to do, entertain yourself by listening to music or relaxing. If it is impossible for you to control your thoughts, here are a couple of strategies that will help you achieve that goal:

1. The first step : Identify your little voices. To begin with, try to identify your internal dialogue. After that, you will have to find the style of your dialogue. Is it positive or negative? Is it toward your results or toward the others? When you will have identified the style of your dialogue, it will be important to identify the moment when you use it. The questions you will have to ask yourself will be: Is it during my performance? Is it when I'm not performing, so when I'm on the bench or between periods? Is it before or after my game? Is it during the training sessions?
2. Second step : control your internal dialogue. There are four (4) strategies that can be used :
 - a) **The first strategy : Stop the thoughts.** When you will have a negative thought, say STOP. You can say it out loud. You can also put a rubber band around your wrist and you will have a negative stop, pull the rubber band. It will help you to be conscious of these moments of negative thoughts.
 - b) **Second strategy : Turn the negative words and phrases into positive.** For each negative sentence, turn the negative words into positive so what you say becomes positive. Sometimes, there are to be moments where you can't control the evolution of your dialogue, but you can always try to turn them into positive.
 - c) **Third strategy : Control those negatives thoughts.** When you will no longer believe your positive assertions, use facts and logic to counter your negative beliefs. For example, if you tell



yourself that you are not fast enough, you can ask yourself if your thoughts are helping you. You will realise that those thoughts will take you to nothing, you will change what you say.

- d) **Fourth strategy : Eliminate all irrational thoughts.** For example, always looking for perfection, take a defeat as the end of the world, think that we are the cause of a defeat and use excuses that decrease your responsibility. If you realise that you have those thoughts, try to play with them to make them realistic.

Key words

The athletes often have the tendency of thinking of the results instead of thinking of what's ahead and what to do in order to perform and, sometimes, it is during that period of time that the negative internal dialogue happens. High level athletes often use key words that allow them to concentrate on the spear of the moment and on the task ahead. Use words that you like, that help you concentrate and be confident. Key words used could be "Move your feet", "Protect the puck", "Complete your checks" and for a goaltender, the key words could be "One shot at a time", "A wall" and "Fluid". Many examples exist; you just have to find your own key words.

Relaxation

It is sometimes necessary before, during or after a competition to lower the physical intensity or the psychological stress. When you feel stressed, you breathe faster and not as deep. When you breathe that way, your body reacts :

- There is less oxygen in your blood system,
- Your blood vessels shrink,
- There is less oxygen in your brain,
- Your cardiac rhythm and your blood pressure rise.

Sometimes, you don't need too much to feel better. By changing the way you breathe, it can be a first step in the good direction. Here is one of the best ways to introduce yourself to anti-stress breathing :

1. Lie down or sit comfortably and rest a hand on your stomach and the other on your chest.
2. Breathe through your nose by making sure that your hand on your stomach rises and the hand on your chest almost doesn't move.
3. By slowly breathing through your nose, count to three with a low voice.



4. Slowly breathe out, slowly count to four, feeling that your hand on your stomach slowly goes down.

Take a small pause before your next breath. Repeat the exercise for 5 to 15 minutes and every time you can.

There are more advanced techniques, but that exercise is a good introduction to the breathing techniques that will allow you to lower your stress.

Imagery

Mental imagery is very efficient to improve the performances. Imagery not only uses vision, but also all the senses. Many researches have shown that the brain doesn't differentiate the reality from the imagined experience. Imagery could be used to experiment techniques and strategies, to learn to control your emotions, to improve your concentration and your confidence, to reduce the stress and, finally, to prepare before a game. Creation of situations is unlimited when we use imagery. It is very easy to use imagery. Most of us already use it. For example, when we try to remember what we have done during the day, we use imagery. What is more difficult is to render an efficient imagery.

For imagery to be efficient, it is important that images to be clear, that actions and movements are complete and to act as if we were doing that movement for real, that images are to be fluid, that all senses are used (so we must smell, see, ear and taste) and the imagery has to be positive.

There are two types of imagery: internal and external. When we see ourselves as if we were watching a video, we use external imagery. That technique is used by the beginners and is very efficient when we want to learn a new technical movement. So if you have never used imagery, you can start with that technique. But we use internal imagery when we see the events through our own eyes; it is as if we were there. That form of imagery is very efficient being more sensory. It causes a micro-activation of same muscles used when the movement is real, so our body is programmed to do those wanted movements and they become automatic. We can create different situations during which we will find solutions in our head and when that situation will happen, the "surprise" effect won't be as hard and the ideal reaction will be faster.

Imagery should be used in the evening, before a game, while training or when we are injured. It should be repeated 3 to 5 times every week during 10 to 20 minutes and will be very efficient if used often while training. It also stimulates, creates and recreates all kinds of situations to allow a better self-confidence and concentration, manage your stress and allow ideal state of mind to increase the performance.



Confidence

Confidence is defined by many psychologists like the belief of having the necessary abilities to achieve that duty. In sports, confidence is the factor that has the most influence on performance. There are internal and external factors that influence our confidence. To begin with, an athlete must justly evaluate his potential. The other factors are physical and psychological conditioning, physical conditioning for each of us, social support, quality of the installations and quality of the coaches that work with the athlete.

The confidence is a factor that, with long hours of training, technical abilities and physical conditioning will allow you to perform when you will be under pressure during the game. Confidence helps to face adversity and losses in order to always be on top and in control of your destiny. When confidence is high, we have a better concentration, a better orientation toward the objective and we have more tenacity to achieve our goal. When the confidence level is low, we have incapacity to stay in the spear of the moment, the effort given lowers, we are more scared and negative emotions take control. There are different strategies that allow you to raise your level of confidence.

The first strategy, and the most efficient, is to make to make sure you have had successes before. That means that you will do anything you can to have the best physical condition possible, that you develop the necessary abilities to succeed, that you make sure you have the best possible preparation and to work on the interpretation on the successes you have had in the past, so be logic and realistic.

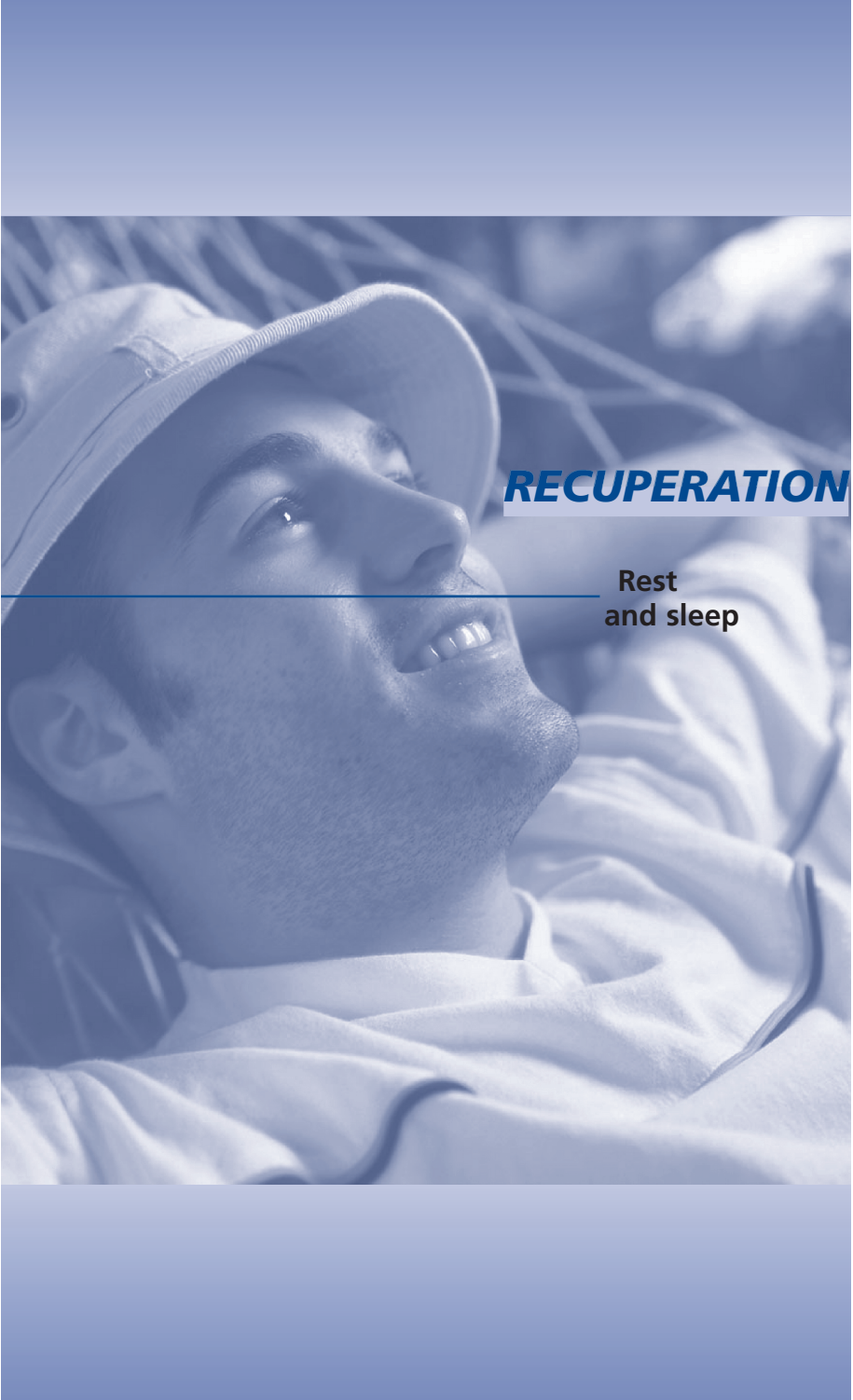
The second strategy consists of being able to adapt yourself to the situation with different actions that you will have already planned. The techniques that can be used are to fix long, mid and short term objectives, to use mental imagery in order to prepare properly the execution of the movements, to recognize and control our internal dialogue and to have a good comportment.

Finally, the last strategy that is the weakest and out of your control, is to control the social climate surrounding you, such as the leadership of the coach that can be controlling or non-controlling and the type of feedback proposed that can be a positive or negative reinforcement.

As you can see, there are many psychological factors that can affect an athletic performance. The most important in all of that is to have fun when playing hockey, it's only a game and there are many tools available in order to develop good habits on the psychological training level. The psychological training is as important as training muscular qualities.

If you want to learn more, you can consult your organisation's sport psychologist. You can also click on the web site of the Canadian Coaches Association to find the nearest sport psychologist at the address : www.coach.ca.



A man with a beard and mustache, wearing a white long-sleeved shirt and a white cap, is lying on a hammock. He is looking upwards and to the right with a slight smile. The background is a bright, slightly blurred outdoor setting. The entire image has a blue tint.

RECUPERATION

**Rest
and sleep**

RECOVERY

Rest and sleep

The pre-game preparation should start way before you get to the arena. Preferably, you will have planned your schedule ahead of time by including in it your training sessions, your studies and your rest, always considering the schedule of games. At the beginning of the season, your priorities will be to improve on ice and at the same time, adapt yourself to the schedule of a hockey season that is often busy. To maintain a high level of intensity, you will need to plan your rest and sleep periods. There is a difference between rest and sleep. Sleep is what the body needs every day to recover and repair the damages inflicted by the accumulated fatigue over the day, the week and, sometimes, even the month. The younger you are, the more sleep you need. Studies show that a teenager nine hours of sleep per day. It is important to know that the moment at which you go to sleep as a high importance. The hours before midnight are very important. An athlete that goes to bed from 10 pm to 7 am will be more rested than an athlete that sleeps from midnight to 9 am. The quality of sleep suffers a lot the day before a game because the athletes are often nervous and think a lot of their upcoming performance. It is essential to have two good nights of sleep before a game.

Rest encompasses more than sleep. During rest periods, the players can read a book, listen to music, and watch television. Study for an exam is not rest, but take a walk with your dog is. An active rest allows you to relax and still stay active, and that is very profitable. A friendly game of soccer, throw a Frisbee or play tennis are good ways that make you can move while having fun. Rest is very important for players your age and can prevent exhaustion.



CONCLUSION



CONCLUSION

Finally, many athletes look for the fastest means that can improve their performance. Doping agents can cause different health problems and there is also the consequence of being considered as a cheater. Consult Annex 7 to know the secondary effects of the drugs that hockey players are most likely to use. Doping agents are not necessary if you eat properly, train well and are mentally ready before each performance.

Finally, here are five basic questions that hockey players should ask themselves before using a doping agent or a substance that can improve performance :

1. Do you know all the product's ingredients?
2. Are you sure that the product is safe?
(Caution "Natural" doesn't necessarily mean acceptable)
3. Did you ask a qualified professional?
4. Does the product contain banned or restricted use substances?
5. On the mental and physical preparation, nutrition and recovery sides, is your training plan optimal?

And remember, there is no magic potion that can replace effort, talent and a training of quality.



DOPING NUTRIENTS CARBS AGENTS

ANNEXES

Annex 1

Glycaemia rating
of the nutriments

Annex 2

Types of carbohydrates

Annex 3

Meal examples

Annex 4

Examples of food to eat and
to limit on a game day

Annex 5

Food supplying 30g of carbohydrates

Annex 6

Home-made recovery and
energy drink recipe

Annex 7

Food to eat and to avoid in a restaurant

Annex 8

List of doping products used and their
secondary effects

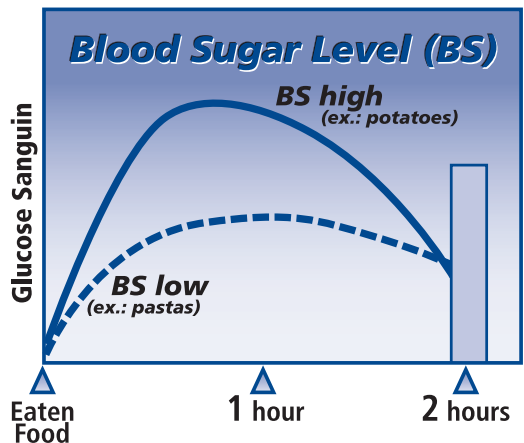
Glycaemia rating of the nutriments

Carbohydrates can be found in the complex or the simple form. Recent studies have shown that not all carbohydrates have the same effects on the concentration of glucose and insulin found in the blood. And because the concentrations of glucoses and insulin are the main reason for heart problems suffered by those who have diabetes, it is important to recognize the glycaemia rating of food to make the right choice.

The glycaemia index shows the effect of food on the blood sugar. We define that index as being the area under the glycaemia response curve during the two hours following the ingestion of 50 grams of carbohydrates during an eating test. The sugar level of food is related to the rise of sugar in the blood after eating that food, compared to glycaemia that is joined by the absorption of a drink with 50 grams of carbohydrates.

In other words, the terms simple carbohydrates and complex carbohydrates refer to the chemical aspects and to the molecular structures of food; but the glycaemia index represents the physiological answer of the organism to the physical properties of the food.

When there is ingestion of food with a high level of glycaemia, the sugar level in the blood tends to rise quickly. (See the illustration below) On the opposite, when there is ingestion of food with a low level of sugar, the level of blood sugar shows inferior values and the area under the glycaemia response curve is smaller than during the observation period of two hours.



It can be hard to establish the glycaemia index of eaten food because that measure is related to simple food, and not food combinations that are close to the ones found in every day meals or in snacks. It is not always simple to gather food in accordance with glycaemia index. As a matter of fact, the proteins or the fat and even the level of refinement or transformation done to the food may change the glycaemia index. It is the same for the size of the particles, either if it is after transformation or



chewing. The proportion of glucose, fructose or fructose and even the types of starching molecules in the food influence the glycaemia index found in the food.

Here are the principal situations where it is important to consider the food's glycaemia index:

The endurance athletes that want to have carbohydrates less than 60 minutes before their training or performance will pick food with a high glycaemia index in order to increase the concentration of glucose in their blood (their glycaemia).

For that increase to be profitable, they must maintain that concentration at a high level by drinking energy drinks until the beginning of the performance.

- Inversely, before doing any exercise, an athlete can also choose to eat food with low glycaemia index so that the energy boost is immediate, but that it last longer during the effort.
- Because food with a high level of glycaemia index are digested or absorbed faster, their ingestion during the exercise maintains the level of glycaemia. In other words, high glycaemia index foods are particularly interesting in the way that they can allow a fast absorption of glucose by the blood.
- In the first hours following an exercise, high glycaemia index food can improve the rate of the renewal of the reserves of muscular glycogen. That renewal can play an important role on the multiple training period days or during the training periods or the competitions.
- The level of blood glucose influence the appetite; then, by eating food with a low glycaemia index, we reach satiation more easily; so we eat less food, and it is easier to control the body mass.

The interest in knowing if the food's glycaemia index is high or not depends from a sport to another. The high glycaemia index food may be particularly interesting for endurance athletes. The effect of those foods on the athletic performance is controversial and must be subjected to further research.

The coaches and the athletes that want to learn more about which food to choose depending on the sport they practice should contact a professional dietician.



Table of GLYCAEMIA Index for every day food (Glucose = 100)

Cereal Products	Vegetables	Fruits
Rice (instant): 91	Potatoes (baked): 85	Watermelon: 72
Rice Krispies: 82	Potatoes (instant): 83	Pineapple: 66
Corn Flakes: 84	Carrot: 71	Grapes: 64
Cheerios: 74	Mashed potatoes: 70	Orange juice: 57
Bagel: 72	Sweet potatoes: 54	Banana: 53
Whole wheat bread: 68	Green peas: 48	Raisins: 43
Shredded Wheat: 69		Orange: 43
Corn semolina: 68		Apple juice: 41
Life cereals: 66		Pear: 36
Oatmeal: 65		Apple: 36
Wheat muffin: 60		
Rice (white): 56		
Rice (brown): 55		
Oatmeal cookies: 55		
Spaghetti (white): 41		
Wheat Kernels: 41		
Milk products	Beans	Other food (snacks)
Ice cream: 61	Baked beans: 48	Candies beans: 80
Yogurt (sweet): 33	Chickpeas: 33	Graham cookies: 74
Milk (skimmed): 32	Yellow beans: 31	Honey: 73
Milk (homo): 27	Lentil: 29	Sodas: 68
	Beans: 27	Angel cake: 67
	Broad beans of Soya: 18	Wheat crackers: 67
	Peanuts: 14	Sucrose: 65
		Popcorn: 55
		Chips: 54
		Chocolate: 49
		Fructose: 23

Taken from K. Foster-Powell and J. Brand Miller, « International Tables of Glycaemia Index », American Journal of Clinical Nutrition, 1995, 62:871S-93S.



ANNEX 2

Types of carbohydrates

COMPLEX	SIMPLE
• Pasta • Rice • Beans • Cereals • Bread (Whole wheat and white) • Potatoes • Certain fruits (fibres) • Nuts • Vegetables (Potatoes, corn, peas)	• Fruits • Vegetables • Honey • Maple syrup • Milk products • Candies • Jam • Sugar (White and brown) • Pastries



ANNEX 3

Example 1

Game at 4 pm

Meal : On the night prior to the game, have a dinner rich in carbohydrates, and drink a lot of water until 2pm the day of a game. Have a breakfast rich in carbohydrates (see example below) at 8am and have a lunch rich in carbohydrates at around noon. You can have a light snack rich in carbohydrates at around 2pm. It is very important not to eat later than 4 hours before the game.

Example of a breakfast rich in carbohydrates

- 250 ml of orange juice
- 350 ml of cereals like Mini-Wheat or other (250 ml of 1% milk)
- 1 banana
- 2 whole wheat bread toasts with peanut butter or jam
- 2 glasses of water

That breakfast supplies 850 kcal with 70% of which are carbohydrates, 11% are proteins and 13% are lipids.

Example of a carbohydrates rich lunch (4 to 5 hours before the game) :

- 3 cups (750 ml) of spaghetti
- 1 cup (250 ml) of marinara sauce (tomato sauce)
- 60 g of chicken breast or grilled turkey
- 250 ml of lettuce with one table spoon of non creamy dressing
- 1 yogurt
- 2 glasses of water

That lunch will supply 820calories, 68% are carbohydrates, 13% are lipids and 20% are proteins.

Example of a light snack rich in carbohydrates (1 or 2 hours before the game) :

- 1 fresh fruit and one granola bar (ex: Nature Valley bar)
- 125 ml of fruit juice and two oatmeal cookies
- 200 ml of chocolate milk



Example 2

Game at 7pm

Meal : Have breakfast at around 8am, a snack around 10am and a lunch rich in carbohydrates at around noon, your pre-game meal at around 3pm and, if you want, a snack at around 5pm. Drink water all day.

Example of a typical day

8am 250 ml of orange juice
 350 ml of cereals like Mini-Wheat or other (250 ml of 1% milk)
 1 banana
 2 whole wheat bread toasts with peanut butter or jam
 2 glasses of water

That breakfast supplies 850 kcal which 70% are carbohydrates, 11% are proteins and 13% are lipids

10am 1 fresh fruit
 1 granola bar
 250 ml of water (1 glass)

Noon One sandwich with lean meat (ex: breast of turkey, roast beef, tuna), with lettuce, tomato on whole wheat bread
 1 low fat yogurt
 250 ml of apple juice
 250 ml of water

3pm **Pre-game meal**
 3 cups (750 ml) of spaghetti
 1 cup (250 ml) of marinara sauce (tomato sauce)
 60 g of chicken breast or grilled turkey
 250 ml of lettuce with one table spoon of non creamy dressing
 1 yogurt
 2 glasses of water

5pm **Snack**
 2 glasses of water or 250 ml of fruit juice or energy drink (PowerAde, Gatorade)
 250 ml of applesauce or 2 oatmeal cookies
 2 slices of Italian style bread with jam

* Menus from the document prepared by Joëlle Gauthier P.Dt. and Marielle Ledoux Ph.D., P.Dt., March 2003



ANNEX 4

EXAMPLES OF FOOD TO EAT AND TO LIMIT ON A GAME DAY

MEAL	HEALTHY CHOICE	AVOID
Breakfast	• Cereals, bread, bagel, home-made muffin, French toast, crape, waffle • Yogurt 0 to 2 % of fat, 1 % or skimmed milk • Cottage cheese • Boiled eggs, vegetable omelette, lean ham • Fresh or canned fruits • Jam, honey, maple syrup	• Crescents, donuts, pastries, commercial muffins • 3.25% milk and cream • Rich cheddar cheese • Fried eggs, cheese omelette, bacon, sausages • Hash brown potatoes • Butter and margarine
Lunch and dinner	• Soups (containing broth or consommé) • Raw vegetables, steamed or boiled • Meat, fish, skinned poultry, grilled or roasted, baked, barbecued. Remove the visible fat. • Lean cold meat (turkey breast, roast pork, lean ham, etc.) • Baked, boiled or mashed potatoes • Boiled or steamed rice • Noodles or pasta, nature or with vegetable sauce • Salad (lettuce, beans, fruit, vegetable), be cautious on the amount of dressing • Bread, small breads, low fat crackers, dry cookies • Low fat cheese • Fruits, yogurt low in fat, frozen yogurt, puddings, sorbet	• Cream based soup • Vegetables cooked in oil or butter • Meat, fish or poultry, breaded, fried or with skin • Sausages, salami, pâté • Fries • Fried rice • Noodle or pasta with butter, cream or cheese • Potato salad, cole slaw, or macaroni salad • Dressings • Pies, ice cream, cakes, pastries
Snacks	• Pretzels • Low fat popcorn • Cottage cheese with fruits • Low fat granola bars • Energy bars • Bowl of cereal with fruits • Yogurt • Frozen yogurt • Fresh or canned fruits • Fresh vegetables • Puffed rice wafers • Nuts and seeds	• Regular popcorn with butter • Chips • Junk food • Chocolate bars • Ice cream

* Chart taken from the document prepared by Joëlle Gauthier P. Dt. and Marielle Ledoux Ph.D., P. Dt., March 2003



ANNEX 5

Food supplying 30 g of carbohydrates

- | | |
|--|--|
| <ul style="list-style-type: none">• 250 ml of fruit juice• 250 ml of chocolate milk• 500 ml of Gatorade• 250 ml of Boost Sport• 60 ml of raisins• 3 Newton fig cookies• 1 banana | <ul style="list-style-type: none">• 2 average size fruits• 4 rice flat cakes• 1 slice of bread• 1 bagel• 1 small muffin• 250 ml pastas or cooked rice |
|--|--|

* Chart taken from the document prepared by Joëlle Gauthier P. Dt. and Marielle Ledoux Ph.D., P. Dt., March 2003

* Visit the site www.coach.ca and under the sport nutrition/resources tab to see the list of available sugar sources.



ANNEX 6

HOME-MADE RECOVERY AND ENERGY DRINK RECIPE

Home energy drink with fruit juice :

Example of an home-made drink

Pick within these choices :

- 750 ml of grape juice
 - 875 ml of pineapple juice
 - 1 litre of apple juice
 - 1125 ml of orange juice
- In each case, add water to obtain a total of 2 litres
 - Add a pinch of sugar and lemon juice as you wish
 - Mix the ingredients. Drink fresh.

Home-made recovery drink :

1 cup of skimmed milk
1 table spoon of powder milk
2 table spoon of frozen orange juice not diluted in water
1/2 banana
1 egg white
Put in a mixer and mix

To be taken after a training period or a game



ANNEX 7

Food to eat and to avoid in a restaurant

INSTEAD OF EATING :	PICK :
• Meat, chicken and grilled fish with butter, oil or fried	• Meat, chicken and low fat grilled fish
• Vegetables with butter or cream	• Natural vegetables
• Chicken with skin	• Chicken without skin
• Fries	• Baked potatoes or rice
• Pizza extra pepperoni with cheese	• Thick crust pizza with vegetables
• Hamburger with sauce or mayonnaise	• Hamburger with ketchup, relish and mustard
• Chickens wings	• Grilled chicken breast
• Double hamburger	• 2 single hamburgers
• Big Coke	• Fruit juice without sugar, a glass of milk or water
• Breaded chicken sandwich	• Simple hamburger or grilled chicken sandwich

* Chart taken from the document prepared by Joëlle Gauthier P. Dt. and Marielle Ledoux Ph.D., P. Dt., March 2003



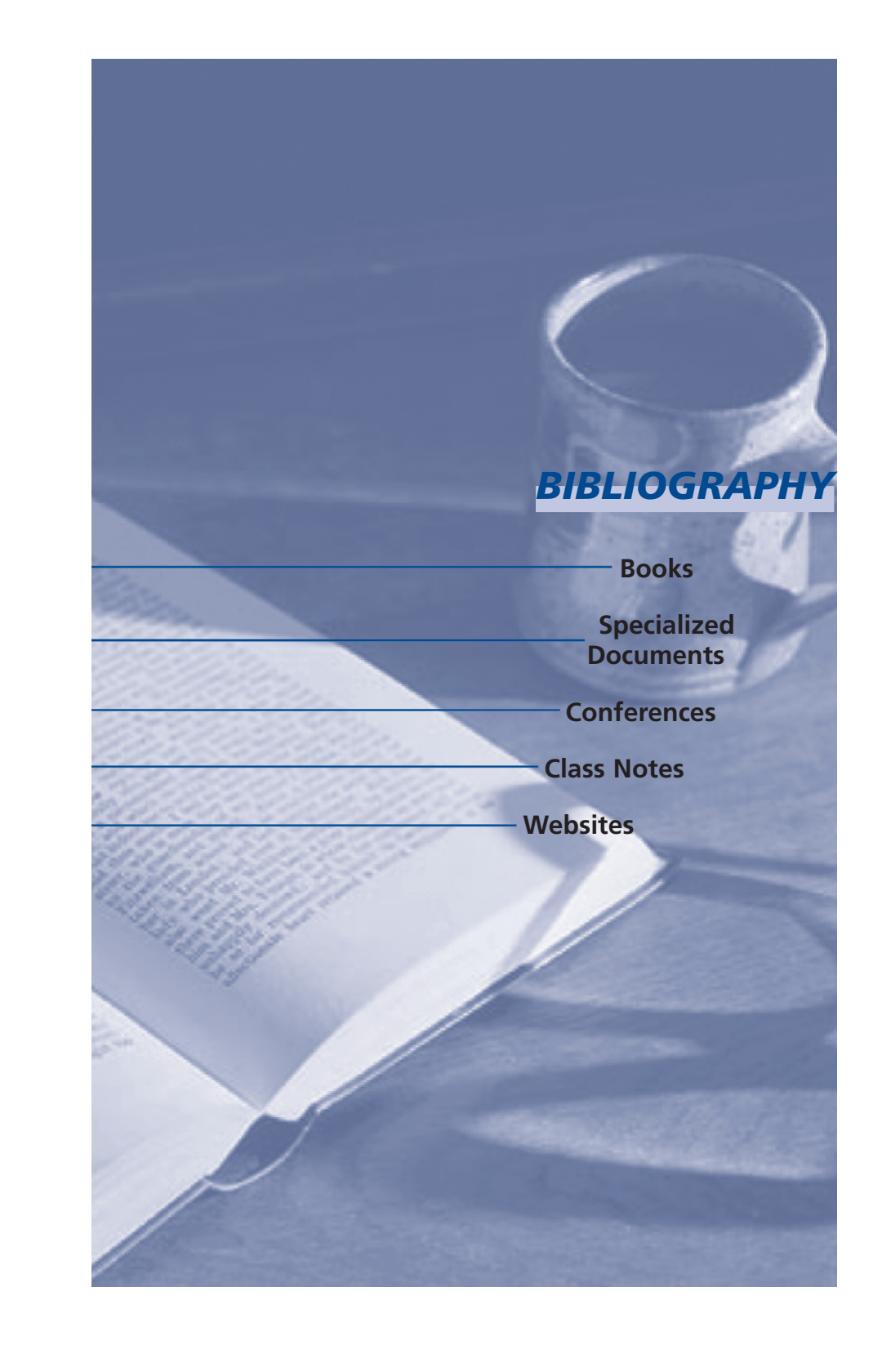
ANNEX 8

LIST OF DOPING PRODUCTS USED AND THEIR SECONDARY EFFECTS

List of doping products mostly used by hockey players but banned by Hockey Quebec's anti-doping policy.

CLASS	PRODUCTS	SIGNS OF USE/ UNHEALTHY RISKS
Stimulants	Amphetamine, ephedrine (Ripped Fuel, Ma Huang, Sudafed), caffeine (supplements), cocaine	Nervous agitation, euphoric state, aggressiveness, loss of coordination and judgment, loss of weight, insomnia, muscular pain, dehydration, cardiac rhythm disorder, arterial hypertension, cerebral haemorrhages, psychoses, pulmonary diseases, drug-addiction
Analgesic narcotics	Codeine, Demerol, morphine, 282	Nausea and vomiting, loss of balance and of coordination, depressive state, risk of aggravating an injury, respiratory depression, physical and psychological dependence
Anabolic agents	Steroids, nandrolone, stanozolol, testosterone, DHEA etc.	Important presence of acne on the body and the face, aggressiveness, greasy skin, hormonal dysfunction, liver disease, arterial hypertension, cardio-vascular problems, infectious diseases transmission, tendon severing, premature stop in the growth of long bones, loss of hair, breast enlargement, reduction of the size of the testicles, sperm production reduction, impotence, enlargement of the prostate
Growth hormones (hGH)	Growth hormones	Enlargement of the breasts on men, fingers, toes, ears and skin swelling and thickening, excessive growth of internal organs, bone deformation, diabetes, cardiac problems, thyroidal problems
Local anaesthetic		Allergic reactions, respiratory problems, cardio-vascular weakness, risk of aggravating an injury
Cannabis	Marijuana, hashish, etc.	Euphoric state, coordination problems, bronchial infections



The background of the slide is a blue-tinted photograph. It shows an open book in the lower-left foreground, with its pages slightly curved. To the right of the book is a ceramic mug, partially filled with a dark liquid. The lighting is soft, creating gentle shadows on the surface.

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Mounted Police

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