

Sports Nutrition Kit

for High School Classes



Table of Contents **Page**

Introduction **1**

Tips and Ideas for Coaches **2**

Activities **4**

Activities can be done individually, as a class, or in pairs/small groups
Copies or overheads of each activity and answer key can be made to facilitate review.

- 1. Introductory Quiz **4**
- 2. The 3 major league nutrients **8**
- 3. Choosing carbs **11**
- 4. Evaluating dietary supplements **14**
- 5. Goal setting **15**
- 6. Making a team nutrition kit **16**
- 7. Case Studies **20**
- 8. Jeopardy **23**

** Copies of all of the handouts can be downloaded from www.fraserhealth.ca, search 'nutrition lessons'.*

Appendix

A. Additional Sports Nutrition Information **27**

B. Prescribed Learning Outcomes **28**
 Physical Education
 Health and Career Education
 Home Economics

C. Evaluation Form **32**

Introduction

Whether someone is playing soccer after school or preparing for the 2010 Olympic Games, the way they eat impacts their athletic performance.

Teenagers today are greatly influenced by their environment, including their parents, peers, teachers, as well as advertisements and the eating outlets in their neighborhoods. All these influences have the potential to negatively or positively impact the nutritional health of teenagers.

Teens that are physically active can be more inclined to listen to messages about healthy eating when they understand their athletic performance is affected by what they eat. At an age when they have the means and ability to make their own decisions, their knowledge and attitudes towards food can help them make healthier choices.

Purpose of Kit:

This kit is intended for high school teachers or coaches who wish to teach their students about the important role nutrition plays in physical activity.

This kit offers teachers in-class lesson plans, hand-outs, a jeopardy game, and suggestions for reputable on-line resources about sports nutrition.

Tips for Coaches

- ✓ Talk about how eating well and being active makes you feel good.
- ✓ Give athletes suggestions for healthy meals and snacks based on *Eating Well with Canada's Food Guide*.
- ✓ Emphasize that eating should be enjoyable.
- ✓ Avoid giving athletes negative messages about food. Some examples are:
 - "You should not eat that food because it will make you fat."
 - Classifying foods as "good" or "bad" – e.g. praising athletes for eating "good" food and scolding others for eating "bad" food.
 - Making athletes feel guilty about eating certain foods.
- ✓ Remember that all foods can be part of a healthy diet.
- ✓ Be a good role model. Bring healthy snacks to the game yourself.
- ✓ Encourage canteens and concession stands to provide healthier foods *
 - Write a letter to the catering company describing any concerns you have about the foods that are sold and provide examples of healthier alternatives.
 - Get parents involved in writing letters and leading a campaign for healthy snacks.
 - Encourage parents and athletes to buy healthier alternatives (e.g. fruit, bagels and yogurt).

* Many resources are available to help students, teachers, coaches, parents, etc. provide healthier options for athletes, including ideas for fundraisers using healthy foods, ideas of healthy options that can be sold at sports days or in vending machines, etc. Go to www.fraserhealth.ca and search 'school nutrition'.

You are a role model for your players and teams. Make healthy eating part of your life!

Adapted from: Sports Nutrition for Young Athletes (1993) Developed by Kris Millan for the Model Program Initiative, Kingston, Frontenac, Lennox, and Addington Health Units.

Ideas for Coaches

- ✓ Take the opportunity during warm-up to discuss healthy eating and how nutrition is related to athletic performance.
- ✓ If young athletes tire quickly, cannot keep up or are having a bad practice because they have not eaten well, use it as an opportunity to discuss how eating well can improve their performance.
- ✓ Be a good role model. Bring healthy snacks to the game or practice and discuss why you eat these foods.
- ✓ Suggest that athletes complete a one-day food record at home and compare it to *Eating Well with Canada's Food Guide*. This is an activity that could involve parents too. Free copies of *Canada's Food Guide* are available at your local health unit.
- ✓ Suggest that athletes keep a logbook of what they have eaten, how the game went, and how they were feeling—both physically and emotionally.
- ✓ Use newsletter inserts and nutrition tips on schedules, calendars or bulletin boards, and for parent information. See the true / false quiz produced by Dietitians of Canada for short facts to use (listed in appendix A).
- ✓ Encourage parents to organize a healthy canteen for players at the game, practice or tournament. Parents can rotate the responsibility for providing healthy food choices.
- ✓ Organize a pot-luck meal featuring high-carbohydrate foods—post-game or pre-game.
- ✓ Have players create posters describing what feeling good about yourself, eating well, and being active means to them. Post on bulleting boards in arenas, dressing rooms, etc.
- ✓ Talk to athletes about what they ate before the game. If an athlete is having some discomfort before a game due to eating a large meal, use the opportunity to offer suggestions for more appropriate foods.
- ✓ Distribute healthy snack recipes to athletes and their parents and use them yourself.
- ✓ Encourage athletes to bring their own water bottle to games and practices. Have a contest to see who brings their water bottle most often.
- ✓ Schedule fluid breaks during games or practices.

Adapted from: Sports Nutrition for Young Athletes (1993) Developed by Kris Millan for the Model Program Initiative, Kingston, Frontenac, Lennox, and Addington Health Units.

Activity 1 - Introductory Quiz

Goal

To introduce the topic of sports nutrition and determine baseline knowledge of the students.

Preparation Needed

- Make an overhead copy of the quiz (p. 10) and the answer key (p.11-12)
- Make copies of the quiz (p. 10) for each student if the students will be completing the quiz individually

Student Handouts

- "Sport Nutrition" is a 7 page handout produced by the Manitoba Milk Producers. It provides an overview of carbohydrates, protein, fluids, vitamins, and eating at competition time. * Note: Page 6 of this handout will be used in Activity 6.

www.bcdairyfoundation.ca/nutrition_education/docs/sportnutrition.pdf

Background Information for Teachers

- www.coach.ca - for general information about nutrition and sport, including detailed information about nutrients, nutrition on the road, weight gain and loss, etc.

- "Nutrition and Athletic Performance" Position of Dietitians of Canada, the American Dietetic Association, and the American College of Sports Medicine, 2000 (26 pages)

www.coach.ca/eng/nutrition/resources.cfm

Sports Nutrition Quiz

Workout your Nutrition Knowledge...

1. T F Carbohydrates found in grains, fruits and vegetables are an important source of energy for your body.
2. T F Very high amounts of protein in the diet help increase the amount of muscle you have.
3. T F A fat free diet is good for your health.
4. T F Lack of fluids can impair athletic performance.
5. T F Your pre-workout meal will have the biggest impact on your performance.
6. T F During a long event (> 90 min), having small amounts of a sports drink often (or another carbohydrate source and water) will help performance.
7. T F After exercise, re-hydration is a top priority.
8. T F Iron is important for athletic performance since it helps in the delivery of oxygen to muscles.
9. T F Vegetarian athletes cannot meet their protein needs through their diet.
10. T F Snacking is not a good idea because it slows you down in practice and makes you gain weight.

Adapted from: Sport Nutrition for the Athletes of Canada (1991). Sport Medicine Council of Canada.



Sports Nutrition Quiz Answer Key

- 1. True** The best fuel for muscles during exercise is carbohydrate. The body stores carbohydrate mostly in the muscles and liver in a form known as glycogen. If athletes do not eat a diet high in carbohydrate (45-65% of total calories), they may run out of fuel during a long workout or game.
- 2. False** The only way to build muscle and increase your strength is to exercise and eat enough food from all of the food groups to meet your energy needs. If you are eating excessive amounts of protein, it is more likely that you are not getting enough carbohydrate to fuel your muscles and if this happens, your body will breakdown your muscle for energy.
- 3. False** Fat is an indispensable part of our brain, spinal cord, nerves and cell membranes. Fat from our diet helps to transport fat-soluble vitamins and it provides essential fatty acids that our body cannot make. Fat also makes food taste good. Approximately 20-35% of our daily caloric intake should be from fat. Healthy fats include vegetable oils, fish, nuts, seeds, and avocados.
- 4. True** Dehydration of even as little as a 2% weight loss related to water loss can impair athletic performance because the body needs fluid to perform properly. For every pound of weight lost during a work-out, replace it with 2-3 cups of water. Most people can use water to re-hydrate during or after a workout; however, if you are exercising strenuously for more than 60-90 minutes, you should eat or drink a source of carbohydrates (ex. commercial or home-made sports drink).
- 5. False** Energy for your race, game or training will depend on the food choices you make on a regular basis, not just on your pre-competition meal. Your performance also largely depends on how well you have trained and prepared yourself.
- 6. True** Longer events use up your glycogen (carbohydrate) stores and dehydrate you. Replenishing both (having small amounts frequently) will aid performance.
- 7. True** Re-hydration is a top priority. Drink at least 2 glasses of water after you exercise. It is a good idea to replenish your glycogen (carbohydrate stores) for your next training. The body's ability to store carbohydrate and to rebuild muscle is highest in the first 30 minutes to 1 hour after exercise. A snack that

includes some carbohydrate and protein, along with water is a smart way to help your body prepare for the next workout.

8. **True** Low iron intake can lead to iron deficiency which impairs athletic performance because iron is needed to deliver oxygen to working muscles. There are 2 types of iron in food:

- "Heme" iron - found in meat, fish poultry and eggs
- "Non-heme" iron - found in iron-fortified cereals and breads, beans/lentils, dried fruits, and some green vegetables (asparagus, spinach).
- Heme iron is absorbed by the body more easily than non-heme iron. To increase iron absorption from non-heme sources, eat those foods with heme iron foods or with vitamin C. Also, avoid coffee and tea near mealtimes.

Eat 2-3 servings of meat or alternates every day (for example, 1 serving = 1/3 cup tofu, ½ chicken breast (3 oz.), 1 egg, 1 medium hamburger patty)

9. **False** Athletes who do not eat meat can get protein from foods such as eggs, nuts and seeds, legumes (beans, lentils) and soy products (tofu, soy burgers). However, it is important to ensure that athletes eat enough of these foods every day (i.e. 2-3 servings/day). Also, most meaty protein foods contain plenty of well-absorbed iron, whereas the vegetarian forms do not. Vegetarians must take the time to learn how to eat a healthy vegetarian diet that meets all of their nutrient needs.

10. **False** Athletes need to remain well nourished and this usually means eating 3 meals and 2-3 snacks each day. When people get too hungry, they typically binge (overeat) sweet or high fat non-nutritious foods which can lead to weight gain. Eat at least every 4 hours especially if exercise is planned. Otherwise, athletes may run out of fuel during their practice/competition. Some symptoms include feeling sick, tired and dizzy. Choose healthy snacks such as fruit, cereal, peanut butter and a bagel or yogurt.

Activity 2 - The 3 major league nutrients

Goal

To be able to identify foods rich in carbohydrate, protein, and fat.

Preparation Needed

- Make an overhead copy of the activity (p. 14) and the answer key (p. 15) to be used during this class activity

Student Handout

- "Sport Nutrition" is a 7 page handout produced by the Manitoba Milk Producers. It provides an overview of carbohydrates, protein, fluids, vitamins, and eating at competition time. * Note: Page 6 of this handout will be used in Activity 6.

www.bcdairyfoundation.ca/nutrition_education/docs/sportnutrition.pdf

Background Information for Teachers

www.coach.ca See sections on carbohydrates, protein, and fat:

- www.coach.ca/eng/nutrition/everyday_eating/carbo_info.cfm
- www.coach.ca/eng/nutrition/everyday_eating/protein.cfm
- www.coach.ca/eng/nutrition/everyday_eating/fat_info.cfm

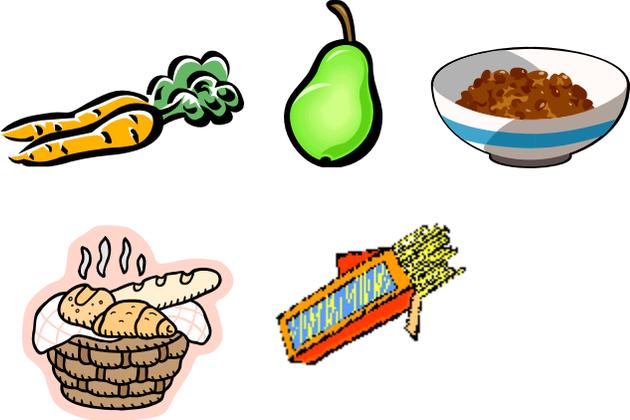
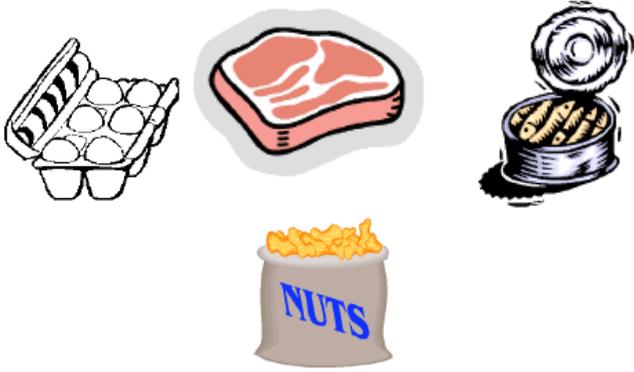
The 3 Major League Nutrients

List foods that are considered high in each of the following:

Carbohydrate	
Protein	
Fat	

Adapted from: Sport Nutrition for the Athletes of Canada (1991). Sport Medicine Council of Canada.

The 3 Major League Nutrients - Answer Key

<p>Carbohydrate</p>	<p>cereal, bread, bagel, pasta, rice, fruit, vegetables, legumes (beans/lentils)</p> 
<p>Protein</p>	<p>meat, chicken, turkey, eggs, nuts & seeds, tofu, legumes (beans/lentils), fish, seafood</p> 
<p>Fat</p>	<p>butter, margarine, mayonnaise, oil</p> 

Activity 3 – Choosing Carbs

Goal

To identify nutritious foods to eat before, during, and after competitions / practices.

Preparation Needed

- Make copies of the activity (p. 17) for all students to do this activity individually
- Make an overhead copy of the answer key (p. 18)

Student Handouts:

- "Sport Nutrition" is a 7 page handout produced by the Manitoba Milk Producers. It provides an overview of carbohydrates, protein, fluids, vitamins, and eating at competition time. * Note: Page 6 of this handout will be used in Activity 6.

www.bcdairyfoundation.ca/nutrition_education/docs/sportnutrition.pdf

Background Information for Teachers

- Information on carbohydrates:

www.coach.ca/eng/nutrition/everyday_eating/carbo_info.cfm

Choosing Carbs

1. Place the following foods in the appropriate category in the chart below.

Orange juice

Pie

Candy

Whole wheat bread

Bagel

Ice cream

Jam

Fruit drinks

Croissant

Soft Drinks

Commercial muffins

Pasta

Banana

Granola Bar

Chocolate bar

Fruit roll-ups

Low-fat fruit yogurt

Apple

High carbohydrate and nutrient-rich ("Everyday food")	High carbohydrate but nutrient-poor ("Sometimes food")	High carbohydrate but high fat ("Sometimes food")

2. List 3 of your favourite snack foods:

_____ / _____ / _____

Place them in the correct category in the chart above.

Adapted from: Sport Nutrition for the Athletes of Canada (1991). Sport Medicine Council of Canada.

Choosing Carbs - Answer Key

High carbohydrate and nutrient-rich ("Everyday food")	High carbohydrate but nutrient-poor ("Sometimes food")	High carbohydrate but high fat ("Sometimes food")
Orange juice	Candy	Ice cream
Whole wheat bread	Fruit drink	Croissant
Bagel	Soft drink	Granola bar
Pasta	Fruit roll-up	Pie
Banana	Chocolate bar	Commercial muffin
Apple	Jam	
Low-fat fruit yogurt		

Activity 4 – Evaluating Dietary Supplements: Pills, Powders, Beverages and Bars

Goal

To learn to evaluate commercial supplements and compare them to foods in terms of cost and nutrient content.

Preparation Needed

- Ask students to collect nutrient information and costs of 5 different sports supplements, pills, bars, or powders on-line or at a store
- Make copies of the handout “Evaluating Dietary Supplements” to be completed by all students

Student Handout

- Evaluating Dietary Supplements: Pills, Powders, Beverages and Bars - developed by the Coaching Association of Canada. A copy can be downloaded from www.coach.ca/eng/nutrition/search.cfm or from the Fraser Health website.

Background Information for Teachers

- Position Statement on Nutritional Supplements from the Sport Nutrition Advisory Committee of the Coaching Association of Canada
www.coach.ca/eng/nutrition/resources.cfm

Activity 5 - Goal setting

Goal

To set goals about food choices, carbohydrates, and drinking adequate fluids.

Preparation Needed

- Make copies of page 6 of the handout "Sports Nutrition" for all students to complete.

Student Handout

- "Sport Nutrition" is a 7 page handout produced by the Manitoba Milk Producers. It provides an overview of carbohydrates, protein, fluids, vitamins, and eating at competition time.

www.bcdairyfoundation.ca/nutrition_education/docs/sportnutrition.pdf

Background Information for Teachers

- www.coach.ca - for general information about nutrition and sport

Activity 6 – Make a team nutrition kit

Goal

To apply knowledge of choosing healthy foods.

Preparation Needed

- Make copies of the handout “Checklist for the traveling athlete and coach” to be provided after completing the exercise

Student Handouts

- “Sport Nutrition” is a 7 page handout produced by the Manitoba Milk Producers. It provides an overview of carbohydrates, protein, fluids, vitamins, and eating at competition time. * Note: Page 6 of this handout will be used in Activity 6.
www.bcdairyfoundation.ca/nutrition_education/docs/sportnutrition.pdf
- Checklist for the traveling athlete and coach - produced by the Coaching Association of Canada. A one page handout.
www.coach.ca/eng/nutrition/search.cfm

Background and Additional Information for Teachers

- High Performance Fuel for Athletes - Guidelines for Sport Concession Stands. This one page handout can be downloaded from www.fraserhealth.ca, search 'nutrition lesson'.
- Energize Me! - a 2 page handout that summarizes the Guidelines for food and beverage sales in BC schools.* The handout identifies foods into 'serve most', 'serve sometimes', 'serve least', and 'not recommended'. This 2 page handout can be downloaded from www.fraserhealth.ca, search 'nutrition lesson'.
- www.coach.ca/eng/nutrition/search.cfm provides 2 page factsheets about:
 - Fluids for Athletes
 - Fluids and Foods Before Training/Competition
 - Fluids and Foods During Training/Competition
 - Fluids and Foods After Training/Competition OR Recovery
 Nutrition for High School Athletes
- Detailed Guidelines for food and beverage sales in BC schools can be found at: www.bced.gov.bc.ca/health/guidelines_sales.pdf

Coaching – do you have what it takes?

Imagine you are the junior coach of a grade 5 soccer team. There are 14 players. This year's final matches are about an hour's drive away. You will be leaving school just after breakfast and will arrive back after dinner-time.

You are confident your team will make it to the finals, which means the players will play 2 games in the morning and 2 in the afternoon. Players will be bringing their own lunches, but you know the team will need healthy snacks before, during, and after the games to energize them.

1. a) What types of snacks would be good to have before games? Why?
b) What types of snacks would be good to have during games? Why?
c) What types of snacks would be good to have after games? Why?
2. Plan a nutrition kit for the team that includes a variety of healthy snack foods. Include foods from each of the 4 food groups, and focus on including mostly high carbohydrate foods. Be sure to choose foods that are both healthy and tasty. Don't forget fluids!
3. The players sometimes bring their own foods from home or buy treats at the field. These foods aren't always the best choices for their game. List 2 things you could do to influence the players to make the healthier food choices to improve their playing ability.

Coaching – do you have what it takes?

Answer Key

1. a) What types of snacks would be good to have before games?

Focus on fluids and carbohydrates. (ex. choose high carbohydrate, easily digestible, low in fat snacks; choose smaller portions, and drink water for hydration)

Why? To provide energy (carbohydrates); to be optimally hydrated; to be physical comfortable (neither hungry, nor too full)

b) What types of snacks would be good to have during games?

Focus on fluids and carbohydrate. Since the games will span longer than 60-90 minutes, drinking a sports drink would be warranted to supply an on-going source of energy (carbohydrates).

Why? Dehydration inhibits performance.

After 60-90 minutes, muscle glycogen is used up. An outside source of carbohydrates is needed for energy.

c) What types of snacks would be good to have after games?

Focus on fluids, carbohydrate, and protein after exercise.

Why? To ensure muscles are provided with energy and nutrients needed for recovery and for the next bout of exercise. Muscles are very receptive to storing carbohydrates and taking up protein (amino acids) shortly after exercise.

2. Plan a nutrition kit for the team that includes a variety of healthy snack foods. Include foods from each of the 4 food groups, and focus on including mostly high carbohydrate foods. Be sure to choose foods that are both healthy and tasty. Don't forget fluids!

- | | |
|--|---------------------------------------|
| - water | - trail mix (seeds/nuts, dried fruit) |
| - sports drinks | - granola bars |
| - fresh or canned fruit (eg quartered oranges, melon chunks, fruit cups) | - yogurt, yogurt tubes |
| - veggie sticks eg (baby carrots, cucumber slices, cherry tomatoes) | - milk, chocolate milk |
| - bagels | - cheese sticks |
| - peanut butter, honey | - dry cereal |
| | - hard boiled eggs |
| | - lean meat sandwiches |

Other examples of foods/drinks can be found on the handout:
'Checklist for the Travelling Athlete and Coach"
www.coach.ca/eng/nutrition/search.cfm

3. The players sometimes bring their own foods from home or buy treats at the field. These foods aren't always the best choices for their game. List 2 things you could do to influence the players to make the healthier food choices to improve their playing ability.

- Set a good example. Eat and drink the healthy choices.
- Talk to students about the link between the foods they eat and drink and their performance.
- Provide healthy snacks. Free or easily available foods/drinks are likely to be consumed.

Activity 7 - Case studies

Purpose

To apply nutrition knowledge by making practical suggestions about how and what to eat to support physical activity.

Preparation Needed

- Make an overhead copy of the case studies as well as of the answer key or make copies of the case studies for small groups to use

Student Handouts

None

Background Information for Teachers

None

Adapted from: Sport Nutrition for the Athletes of Canada (1991). Sport Medicine Council of Canada.

Sports Nutrition Case Studies

“What Would You Do?”

1. Michelle is a competitive hockey player. She trains every day whenever there is ice time. Michelle sometimes skips meals because she is so busy with skating and school. If her practice is around dinner time, she finds she is not really concentrating on the plays because her stomach is growling and she feels tired. Provincials are approaching and Michelle needs to concentrate much more on hockey than she has been.

What can Michelle do to increase her ability to concentrate while on the ice with the schedule she has?

2. Jessica is a dancer. She trains hard almost every day and works constantly to keep a healthy body weight. Jessica's parents work early in the morning and are usually gone before Jessica gets up. Since Jessica is alone and has little time to get ready in the morning she often skips breakfast. At school, she sometimes has trouble concentrating in the mornings and has less will-power to fight the temptations of vending machine goodies such as pop, chips and chocolate.

What should Jessica do to help herself out? Is there anything her parents could do to help?

3. Brad is on the school swim team. He trains in the mornings most days, but twice a week they race at night too. Brad goes to school in the morning after eating breakfast and swimming for 2 hours. By lunch time he is starving. His mom typically packs him a sandwich, a drink and fruit. Brad gobbles these down and by 2:00 is hungry again. Now he begins to snack - a chocolate bar after school, a bag of chips at home and maybe a couple of cookies before dinner. After dinner, it is time to get ready to go to the pool, but Brad doesn't feel like swimming. He feels tired and heavy, not full of the energy that he needs to race.

What can Brad do to feel better before races? How can his mom help?

Sports Nutrition Case Study Answers

1. Michelle

Michelle should plan to have a large snack or an early dinner about 1-1½ hours before practice. If she goes right from school to practice, she will have to bring food from home or stop at a restaurant. Some suggestions:

- peanut butter sandwich, carrot sticks, juice and yogurt OR
- bagel, cheese, tomato, grapes OR
- single hamburger, green salad with low-calorie dressing, milk, apple

2. Jessica

Breakfast is important for everyone because it provides fuel for the body after its overnight fast. As a rule of thumb, a good breakfast includes food from 3 of the 4 food groups, which means there are many options for her to choose from. Jessica should ask her parents to stock the kitchen with foods she would like for breakfast. Some good choices include cereal, peanut butter, low-fat muffins, bagels, skim milk, yogurt and fruit. With all this good food, maybe Jessica's parents will start eating breakfast too.

Jessica could also plan to bring food to school with her. Some ideas of foods she could bring include homemade shakes (banana, peanut butter, and milk), muffin with peanut butter and an apple, leftover pizza...

3. Brad

Brad should have a snack after his morning practice because it will provide energy to get him through the morning and help him replace the energy (and his muscles' glycogen stores) that he used at morning practice. He should also plan a more nutritious snack for after school. Brad and his mom could pack healthy morning and afternoon snacks as part of his lunch .

Activity 8 – Nutrition Jeopardy

Purpose

To apply nutrition knowledge by making practical suggestions about how and what to eat to support physical activity.

Preparation Needed

- Make an overhead copy of the Nutrition Jeopardy chart. Consider downloading the Jeopardy jingle to generate excitement.

Student Handouts

None

Background Information for Teachers

None

Nutrition Jeopardy Questions and Answers

Food groups

100 - This group has bread, rice and pasta and provides you with energy. *What is the grain products group?*

200 - Eggs belong to this food group. *What is meat and alternatives?*

300 - It's good to choose dark green and orange coloured foods from this food group? *What is vegetables and fruit?*

400 - This is the only food group that is not a source of carbohydrates. *What is meat and alternatives?*

500 - These two food groups are good sources of fibre. *What are vegetables and fruit and grain products?*

Performance

100 - You need plenty of this before, during, and after exercise. *What is water?*

200 - If exercising hard for more than 60-90 minutes, it would be a good idea to have this to keep your energy up. *What is a sports drink (or a source of carbohydrates and fluid)?*

300 - Athletes need a diet that is moderate in protein, low to moderate in fat and high in this. *What is carbohydrates?*

400 -When you lose weight during a training session, you have lost this. *What is water?*

500 - After exercising, it's important to do this to replenish muscle energy stores. *What is eat?*

Vitamins and Minerals

100 - This is known as the sunshine vitamin, which is why we need a dietary source in the winter-time. *What is Vitamin D?*

200 - This vitamin is especially important for every woman who could become pregnant. *What is folic acid or folate?*

300 - This mineral is much better absorbed from meats than from vegetables. *What is iron?*

400 - Iron from vegetarian sources is better absorbed when eaten with fruits and vegetables because of this vitamin. *What is vitamin C?*

500 - Vitamin A, Vitamin E, Vitamin C are examples of this. *What are antioxidants?*

Diet and Disease

100 - Adequate calcium and vitamin D during youth prevents this disease of weakened bones. *What is osteoporosis?*

200 - The blood sugar levels are controlled with diet, exercise and/or insulin in this disease. *What is diabetes?*

300 - Weight-bearing exercise is very important in building and maintaining strength of these. *What are bones?*

400 - This type of fat is produced by a process called hydrogenation and is associated with increased risk of heart disease. *What is trans fat?*

500 - Kidney stones can be caused by excessive protein intake and/or insufficient intake of this mineral. *What is calcium?*

Foods that start with 'B'

100 - This fruit which is high in potassium, vitamin C and fibre is one of the most popular in Canada. *What is banana?*

200 - This source of carbohydrates provides an excellent source of energy. *What is bread?*

300 - Vegetarians need to eat plenty of these to get the zinc, iron, and other important nutrients. *What are beans?*

400 - This cruciferous veggie is eaten well with cheese sauce. *What is broccoli?*

500 - This herb, when combined with pine nuts, olive oil, and parmesan, makes an delicious pesto for pasta. *What is basil?*

*Adapted from games developed by Holy Family Catholic Regional Division #37:-
www.hfcrd.ab.ca and Girls Incorporated: www.girlsinc.org.*

Nutrition Jeopardy

Food Groups	Performance	Vitamins and Minerals	Diet and Disease	Foods that start with 'B'
100	100	100	100	100
200	200	200	200	200
300	300	300	300	300
400	400	400	400	400
500	500	500	500	500

Appendix A - Additional Sports Nutrition Information

- Guidelines for Food and Beverage Sales in BC Schools – a tool to help choose healthier foods to sell at sport concessions, fundraisers, etc. Released Nov. 2005.

www.bced.gov.bc.ca/health/guidelines_sales.pdf

Other Student Handouts:

- www.coach.ca/eng/nutrition/search.cfm - Many handouts found on this website are targeted to the adult population. Others have been produced by the Gatorade Sports Science Institute. The following handouts are those that may be appropriate for use with high school aged students.
 - Iron
 - Calcium Calculator
 - Checklist for the traveling athlete and coach - Plan ahead with this checklist for meals and snacks on the road.
 - Long Distance Travel (tips for airplane travel) - Score points on the travel challenge based on decisions made on the flight.
- Are you winning at sports nutrition? – Produced by Dietitians of Canada. A two page true/false quiz.
www.dietitians.ca/english/pdf/2000_sports_nutrition_factsheet.pdf
- Thirst for nutrition – Produced by the BC Dairy Foundation
www.bcdairyfoundation.ca/nutrition_education/resources/nutritionteachingmaterials.htm
A small poster that compares nutrients of popular beverages. It also includes a self-assessment / planning section to determine if you are getting enough fluid. Cost: 10 cents each.

Appendix B – BC Ministry of Education Integrated Resource Packages

The materials in this kit could be used to meet the Prescribed Learning Outcomes of the following subjects:

A) Physical Education

- Grade 8:
 - Active Living:
 - It is expected that students will:
 - design and analyse a personal nutrition plan
- Grade 9:
 - Active Living:
 - It is expected that students will:
 - analyse and explain the effects that nutrition, fitness, and physical activity have on body systems before, during, and after exercise
 - design, analyse, and modify nutrition programs for self and others
- Grade 10:
 - Active Living:
 - It is expected that students will:
 - analyse and explain the effects that nutrition, fitness, and physical activity have on body systems before, during, and after exercise
 - design, analyse, and modify nutrition programs for self and others
- Grade 11:
 - Active Living:
 - It is expected that students will:
 - design and implement plans for balanced, healthy living, including:
 - nutrition
 - exercise
 - rest
 - work
 - evaluate the influence of consumerism and professional athletics on personal perception of body image

- Grade 12:
 - Active Living:
 - It is expected that students will:
 - design, evaluate, and monitor plans for a balanced, healthy lifestyle, taking into consideration factors that affect the choice of physical activity, including:
 - age
 - gender
 - culture
 - environment
 - body-image perceptions

B) Health and Career Planning

- Grade 8
 - Health
 - It is expected that students will:
 - Healthy Living
 - set personal goals for attaining and maintaining a healthy lifestyle
 - analyse influences on eating habits, including family, peers, and media
- Grade 9
 - Health
 - It is expected that students will:
 - Healthy Living
 - relate the characteristics of a healthy lifestyle to their ability to maximize personal potential
 - analyse how healthy eating habits can support a healthy lifestyle
- Grade 10:
 - Health:
 - It is expected that students will:
 - Healthy Living
 - analyse factors that influence health (e.g., physical activity, nutrition, stress management)
 - Health Information:
 - analyse health information for validity and personal relevance
 - Health Decisions:
 - evaluate the potential effects of an individual's health-related decisions on self, family, and community
- Grade 11 and 12:
 - Personal Development (Healthy Living)
 - It is expected that students will:
 - demonstrate an ability to make informed choices regarding health issues, products, and services
 - evaluate the effect of lifestyle choices on society and the workplace

C) Home Economics

- Grade 8:
 - Working with Food Resources:
 - It is expected that students will:
 - describe the essential components of a nutritionally adequate diet
 - create plans for preparing food items, making effective use of resources
- Grade 9
 - Working with Food Resources:
 - It is expected that students will:
 - relate the components of a nutritionally adequate diet to a variety of common eating patterns
 - create plans for preparing simple meals, making effective use of resources
 - propose and use criteria to evaluate commercial food products
- Grade 10
 - Working with Food Resources:
 - It is expected that students will:
 - explain the significance of nutrients with reference to special dietary needs
 - create plans for preparing multicourse meals, making effective use of resources
 - propose and use criteria to evaluate commercial food products
- Grade 11
 - Food Products:
 - It is expected that students will:
 - Prepare food products and meals based on Canada's Food Guide to Healthy Eating
 - Nutritional Issues:
 - It is expected that students will:
 - describe the functions of nutrients in the body
 - identify the food sources of nutrients
 - analyse daily food intake and compare it to the Recommended Nutrient Intake (RNI)
 - identify nutritional issues and describe their effects on well-being
 - Social and Economic Issues:
 - It is expected that students will:
 - identify environmental and health issues related to the production and consumption of food
 - demonstrate an appreciation of multicultural influences on eating habits
 - analyse the effect of food-marketing practices on consumer behaviour
 - identify factors that affect the food supply
 - identify career opportunities in the food industry

- Grade 12:
 - Principles of Food Preparation:
 - It is expected that students will:
 - Describe how principles of nutrition can be used in food preparation
 - Develop a range of menus based on social trends, dietary needs, and cultural influences
 - Food Products:
 - It is expected that students will:
 - Establish criteria for evaluating food products and meals
 - Nutritional Issues:
 - It is expected that students will:
 - describe how the body digests and metabolizes food
 - describe nutritional requirements throughout life
 - evaluate and modify diets for a variety of physiological needs
 - critique the production, composition, and consumption of commercial food products
 - Social and Economic Issues:
 - It is expected that students will:
 - demonstrate an ability to manage food resources in various situations
 - evaluate career opportunities in the food industry
 - critique global environmental and health issues related to the production and consumption of food

Appendix D – Sports Nutrition Teaching Kit – Evaluation

Please check if you used the following activities and include your comments.

Activity	Used? (Y/N)	Needs Changes (Y/N)	Comments
Ideas and Tips for coaches			
Introductory Quiz			
3 major league nutrients			
Choosing carbs			
Evaluating dietary supplements			
Goal setting			
Making a team nutrition kit			
Case studies			
Jeopardy			
IRPs			

Which parts were the students most interested in? _____

Is there anything missing from the kit that would help you teach about sports nutrition? _____

Are you a: teacher coach

What grade(s) do you teach (or what age(s) do you coach)? _____

About how many hours did you spend using this kit? _____

Would you use the kit again? yes no

Thank you for your feedback!

Please fax completed evaluations to Attn: Nutritionist at (604) 591-7382. If you have any questions, please call (604) 507-5441 or email phnutrition@fraserhealth.ca.

