# Sports Nutrition for the Yukon Athlete

"Stay Active. Eat Like a Champion."1



### A RESOURCE FOR YOUNG ATHLETES, COACHES AND PARENTS

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# Background

Healthy eating and good nutrition play key roles in health and well-being. This is very true for young athletes. This group needs proper nutrients for growth as well as enough energy for sports. Eating well and drinking enough fluids are just as important for top performance as a team practice or training plan. This booklet will address how important eating healthy is how to eat enough for a busy lifestyle. These busy people are involved in school, sports and many other activities.

This booklet was developed for male & female athletes (ages 9-18) who are already doing 30-90 minutes of physical activity at least three times per week. They are ready to make informed choices to support good nutrition for their active lifestyle. This book is also a tool for the coaches and parents of these athletes. It can be used as a tool to provide up-to-date information about the nutrition needs of this age group. Each individual athlete is unique, so the nutrition and hydration needs for each person may differ. Knowing what each athlete's nutrition needs are and learning what works for them will help them reach optimal nutrition.

This booklet will highlight the main nutrition concerns for this age group. It will also provide healthy and tasty meal and snack ideas. These nutrition tips will enhance training, performance and health.

# Nutrition

Proper nutrition during the teenage years is very important. Youth need to have enough calories in the diet to allow for proper growth and development. For *youth athletes*, these needs are even higher, as they are also burning extra calories during physical activity<sup>1</sup>.

Nutrients that give you energy are carbohydrate, protein and fat. Energy is required for peak performance. It is important to eat enough calories to meet the energy needs for activity. Carbohydrates are very important in providing this energy.

Nutrient	% of Calories <sup>2</sup>	Recommendation per kg of body weight <sup>1</sup>
Carbohydrate	45-55%	6-10g
Protein	10-35%	1.2-1.7g
Fat	20-35%	n/a

The amount of carbohydrate and protein recommended is based on body weight. Percentages provide guidelines for the ratio of calories, which can be misleading<sup>1</sup>. See examples in Appendix A.

Carbohydrates are stored in the muscles as *glycogen*. This is the energy that is burned during exercise and needs to be replaced after exercise.

Based on the chart above, a 60kg (132lb) athlete would need an average of 450 grams of carbohydrates each day. Below is a sample lunch meal and where carbohydrates can be found.

Sample Lunch Meal	Quantity	Total Carbohydrate Content (grams)
Milk	1 cup	15g
Turkey Sandwich		
<ul> <li>Whole wheat bread</li> </ul>	2 slices	30g
<ul> <li>Turkey</li> </ul>	50 grams	-
Lettuce	2 leaves	<1g
Tomato	2 slices	5g
Cheese	1 slice	<1g
Mayonnaise	1 tsp.	-
Pasta Salad		
Pasta	1 cup	30g
<ul> <li>Mixed vegetables</li> </ul>	½ cup	10g
Salad Dressing	1 tbsp.	-
Banana	1 small	20g
Total		110g

# Carbohydrate

Carbohydrates are the primary fuel source for physical activity. It is important to make sure that there are enough carbohydrates in your diet. Snacks are especially important if your competition or practice is a few hours before or after the next meal. Snacks provide energy for the activity and help you perform longer than if you had not eaten.

When to eat <sup>1</sup> ?	What to eat <sup>1</sup> ?	Why <sup>1</sup> ?
Before practice/ competition		
About 1-2 hours	Fluids, carbohydrates, protein, a little fat <u>Examples:</u> Peanut butter sandwich on whole grain bread, a banana, and water, milk or juice A bowl of whole grain cereal with milk topped with fruit	Eating food that will easily digest and break down quickly will provide energy for the workout
After practice/competition		
Within an hour	Fluids, carbohydrates, protein <u>Example:</u> Handful of almonds, glass of chocolate milk Whole grain pita with hummus and water	Drinking fluids and eating carbohydrates will replace glycogen stores and fluid that was used during the activity. The protein is helping to build and repair muscle tissue in the body.

# Protein

Protein helps to build muscle in the body. Eating quality proteins within an hour after performing strenuous exercise can help increase muscle building<sup>1</sup>. Examples of protein sources can be found below.

Weight training, resistance exercises, and proper nutrition will help to build muscle<sup>1</sup>. Extra protein beyond what the body needs will be stored in the body and will not build more muscle<sup>1</sup>.

#### More Protein ≠ More Muscle

The requirement for protein intake is based on body weight (1.2-1.7g protein/kg body weight) and excess protein is of no benefit. A 60kg (132lbs) athlete needs an average of 80 grams of protein each day.

What does 80 grams of protein look like?					
Food Item	Quantity	Total Protein Content (grams)			
Milk	3 cups	27			
Chicken breast	75 grams	12			
Eggs	2	12			
Cheese	50 grams	9			
Pasta (cooked)	1 cup	8			
Peanut Butter	2 Tbsp	6			
Whole wheat bread	2 slices	6			

### What about Supplements?

Protein supplements are often very expensive and are <u>no more effective in muscle building</u> <u>than eating real food</u><sup>1</sup>.

### Vitamins and Minerals

Vitamins and minerals are essential for health. Calcium, vitamin D and phosphorus all play important roles in bone development. Bone growth is rapid during teen years. These nutrients are vital for healthy, strong bones later in life<sup>3</sup>. This is why Eating Well with Canada's Food Guide recommends 3-4 servings of milk products for this age group<sup>4</sup>.

Iron carries oxygen to different parts of the body. This is essential for optimal athletic performance. Males also require iron to help develop lean mass and females require additional iron for menstruation<sup>5</sup>.

Nutrient & Recommendation <sup>2</sup>	Why it is important <sup>3,6</sup>	Where to find it <sup>3,6</sup>
Calcium – 1300mg	Builds strong bones and teeth	Milk, yogurt, cheese, dark leafy greens, broccoli, fortified soy and rice milk
Vitamin D – 200IU	Strengthens bones because it helps calcium to be absorbed	Milk, egg yolk, fatty fish
Iron 8mg (9-13 yrs old) 11mg (boys 14-18) 15mg (girls 14-18)	Helps red blood cells carry oxygen to different parts of the body	Red meat, fish, poultry, dark green vegetables, nuts, fortified breads and cereals
Phosphorus – 1250mg	Helps build strong bones and teeth; helps the body make energy and function properly	Milk products, red meat, fish, poultry, whole grain bread, dried fruit, legumes and nuts

Eating Well with Canada's Food Guide should provide the necessary vitamins and minerals needed to support regular exercise and growth.

Extra servings from food groups may be needed to meet energy needs. Choose whole grains, leafy greens and orange vegetables and lower fat milk products for extra energy. Look up your age and gender in the chart to figure out how many servings needed from each food group. Photocopy the food guide check list in the back to keep on track (Appendix B).

Age Sex	Children 9-13 Girls &	Teens 14-18 Females Males		
	Boys			
Vegetables & Fruit	6	7	8	
Grain Products	6	6	7	
Milk & Alternatives	3-4	3-4	3-4	
Meat & Alternatives	1-2	2	3	

Adapted from Eating Well with Canada's Food Guide<sup>4</sup>

### Healthy Snack Ideas:

- Granola bar & banana
- Cheese & fruit cup
- Chocolate milk
- Dry cereal
- Crackers & peanut butter
- Yogurt & apple
- Trail mix
- Dried fruit

#### <u> Tournament Tip #1</u>

Eat meals with a healthy balance of carbohydrates, protein and fats 2-4 hours before a game or match to allow for digestion<sup>7</sup>

### Fat

Fat should make up about 20-35% of total energy in the diet. It is important to choose healthy fats such as vegetables oils, salad dressing and margarine instead of unhealthy fats like butter or lard.

For most athletes, carbohydrates are used as the primary energy source during competition. Fat is essential for the highly trained endurance athlete. They are able to rely on fat stores for energy during very intense exercise<sup>1, 8</sup>.

### Did You Know...

Olympic swimmers can eat up to 12,000kcal per day during training and competition? These athletes are able to eat this much throughout the day because so many calories are burned through activity<sup>9</sup>.

# Hydration

# Consume fluids throughout the day every day to stay hydrated.

The amount of fluid you need depends a lot on how much fluid you lose (through sweat and urine). Fluid needs are specific to each athlete. Along with drinking fluids throughout the day, below are guidelines to help keep hydrated before an activity. Ex: 65kg athlete



Time <sup>1</sup>	Recommendation mL of water/kg body weight <sup>1</sup>	Average amount			
4 hours before activity	5-7 mL/kg	~400mL			
2 hours before activity	3-5 mL/kg	~250mL			
If no urine has passed, or it					
is dark an concentrated					
During activity	Continue sipping on water (or a	Depends on sweat			
	sports drink depnding on the length	losses			
	of activity) throughout the activity				
Within 30 minutes to an hour	Replace fluids lost along with a	Depends on sweat			
after activity	post exercise snack (see page	losses and individual			
		needs			

#### Color of urine as hydration increases

An easy way to tell if you have enough fluids is to check the color of your urine. The more clear, the more hydrated you are. Remember if you are thirsty, you may already be dehydrated! Symptoms of dehydration include: thirst, dark colored urine, fatigue, weakness and dizziness.

#### Did you know...

Drinking extreme amounts of much water can actually be bad for you? This causes an electrolyte imbalance called **hyponatremia**. This means that there is too much water in the body and blood sodium levels become too low<sup>1</sup>. This is <u>very rare</u> and excessive amounts of water would need to be consumed. For example: a marathon runner experienced hyponatremia by drinking 10 litres of fluid the night before the race.

<u>Symptoms include</u>: bloated stomach, dizziness, swollen hands and feet, lack of coordination, confusion & disorientation and seizure<sup>10</sup>.

### **Cold Weather**

Hydration is very important for athletes in many different environments. It is obvious that athletes competing in hot weather will need to replace fluids, but fluids are just as important for athletes competing in cold weather.

Hydration needs in cold weather may go unnoticed. It is harder to tell if an athlete is sweating or in need of hydration when the weather is cold.

Certain clothing or uniforms for cold weather can mask external signs of hydration need, such as sweating. Moreover, energy needs can also increase as the outside temperature drops<sup>11</sup>. This is because our bodies are working harder to stay warm and in doing so burn more calories.

Since the environment is colder some moisture from our bodies is being lost in the air while breathing. Be sure to stay hydrated in whatever environment you may be practicing or competing in.

#### Tournament Tip #2

Keep snacks handy in a backpack or in the car (keep in air tight containers if needed) Ex: juice boxes, dried fruit, cereal with nuts & raisins and fruit cups<sup>7</sup>.

### Sports Drinks

Sports drinks can be an excellent way to keep hydrated during intense and lengthy activities. These beverages are often flavoured and contain carbohydrate (sugar) and electrolytes (sodium and potassium). Easy Homemade Sports Drink Recipe (Makes 2 Litres)

1<sup>1</sup>/<sub>2</sub> cup orange juice 9 Tbsp. sugar 3/8 tsp. salt 2 Litres water

**Sports drinks do not contain vitamins.** Drinking water throughout the day will help keep

you hydrated before and during your event. Some people do not like the taste of plain water<sup>1</sup>. Studies have shown that children and youth may drink more fluid if offered a sports drink than if offered plain water<sup>1, 12</sup>.

Some **examples** of sports drinks are: Gatorade®, PowerAde® and All Sport®



When do I need a sports drink?

### **Energy Drinks**

Energy drinks are not the same as sports drinks. Energy drinks are often marketed towards athletes but they are not designed to hydrate the body & provide an energy source for muscles like sports drinks do. Energy drinks often have caffeine in amounts that exceed the recommendation for youth. The long-term effects of other ingredients that are often added to these beverages are not fully understood<sup>1</sup>.

<u>Some **examples** of energy drinks are</u>: Red Bull Energy Drink®, SoBe Adrenaline Rush®, SoBe No Fear®, Hype Energy Drink®, Red Dragon Energy Drink® and YJ Stinger®

These beverages are not recommended for this age group at all. They should not be used for hydration or energy<sup>1</sup>.

# Do you skip breakfast?

It has been said before and it still rings true:

#### Breakfast is the most important meal of the day.

Imagine trying to drive your car without any gas. It won't make it very far. The same principle applies to the body. Food is the body's fuel. It is important to make sure that there is enough fuel to start the day. This is especially important if attending early morning practices or games.

Breakfast Ideas (Recipes in appendix D):

Fruit Smoothie Oatmeal & Berries French Toast & Turkey Bacon Veggie & Cheese Omelet

#### Running Late? Try these breakfast on-the-go ideas

- **¤** Yogurt, fruit & granola
- **¤** Whole grain muffin, milk & fruit
- **¤** Even last night's leftovers can be a quick and balanced breakfast

# No Time for a Healthy Lunch?

The Lunch time meal is just as important as any other meal. Try to create balanced meals that include servings from each of the four food groups. Packing a lunch is a great way to be sure that healthy foods will be eaten. Sandwiches, wraps, & pitas can be great ways to make healthy meals on-the-go.

Mix and match different ingredients to create a balanced and easy sandwich-based meal right for you. These are just examples. Be creative!

Grain Product (Choose one)	2 slices of whole grain bread, whole wheat pita, whole wheat tortilla
Meat Product (Choose one)	<ul><li>2oz. of turkey, ham, chicken, roast beef, tuna, or salmon.</li><li>1-2Tbsp of peanut butter or hummus</li><li>1-2 hardboiled eggs (diced)</li></ul>
Vegetable & Fruit (Choose 1 or more)	Lettuce, tomato, green & red peppers, avocado, diced pears or apple, cucumber, shredded carrot, celery, and banana
Milk Products (Choose one)	Sliced cheese
Fat/Spread (Choose one)	1 tsp of mayonnaise, margarine or salad dressing

# <u>TIP</u>: Add milk or chocolate milk & a piece of fruit to your meal for added vitamins and minerals.

Soups, salads and leftovers are also great choices for lunch. Be sure to keep food at the proper temperature and use microwave-safe containers if reheating.

# What is carbohydrate-loading?

Increasing carbohydrate intake for a few days leading up to a competition can help to keep more energy stored in muscles as glycogen. This does not mean that eating a whole plate of pasta before a game or match is going help in performance.

Building up energy in the muscles is helpful if:

- the exercise is longer than 90 minutes and

- performed at a high intensity (ex: marathon runners, cyclists, triathletes)<sup>1</sup>.

By increasing carbohydrate intake to:

- 8-11g/kg of body weight per day and

- reducing exercise one to three days <u>before</u> the event can help in performance<sup>1</sup>.

Tournament Tip # 3

Stick to eating familiar foods before a competition. Trying new foods could lead to stomach upset<sup>7</sup>.

"A good diet does not make an average athlete great, but... a

poor diet can make a great athlete average."

#### -Dr. David Costill

Professor of Exercise Science at Ball State University, Indiana

# For more information regarding sports nutrition contact your local dietitian or visit these websites:

Dietitians of Canada Health Canada Coaching Association of Canada www.dietitians.ca www.hc-sc.gc.ca www.coach.ca

#### **APPENDIX A – Nutrient breakdown examples**

The recommended ratio of nutrients can be misleading. Below are examples of how an athlete can eat the correct percentages of nutrients but not necessarily be consuming enough calories.

Nutrient	% of Diet	g/kg body weight	Did they meet the recommendation?		
Carbohydrate	55%	3.9g/kg	NO		
Protein	10%	0.7g/kg	NO		
Fat	35%	n/a	YES		
This athlete ate the correct percentages of food, but it was <b>not enough</b> .					

Example 1: 70kg (154lbs) athlete eating a 2000kcal diet

Example 2: 70kg	(154lbs)	) athlete	eating	а	3500kcal	diet
<b>Example 2</b> . 7 ong		julinele	cuing	ч	000011001	aict

Nutrient	% of Diet	g/kg body weight	Did they meet the recommendation?
Carbohydrate	55%	6.9g/kg	YES
Protein	10%	1.25g/kg	YES
Fat	35%	n/a	YES

This athlete ate **more calories** and was able to meet the recommendations for each category.

#### APPENDIX B

Food Guide Daily Serving Checklist (Photocopy checklist for each athlete and/or day) Refer to Eating Well with Canada's Food Guide for more detailed information

	Food Groups				
	Vegetables & Fruit	Grain Products	Milk & Alternative	Meat & Alternatives	Oils & Fats
Examples = 1 Serving each	<sup>1</sup> ⁄ <sub>2</sub> c. fruit or vegetables 1 c. leafy greens <sup>1</sup> ∕ <sub>2</sub> c. pure juice	1 slice of bread ½ bagel ½ c. cooked pasta or rice	1 c. milk ¾ c. yogurt 1 ½ oz. cheese	2 <sup>1</sup> / <sub>2</sub> oz. cooked fish, poultry or meat 2 eggs 2 tbsp. peanut butter <sup>3</sup> / <sub>4</sub> c. legumes	Limit to 2-3 tbsp. per day Ex: oil, salad dressing, mayonnaise, margarine
Ex: Breakfast 2 egg omelet (½ c. vegetables, ¾oz. cheese), 1c. milk, 2 pieces of toast with margarine, ½c. juice	2	2	1 1⁄2	1	1
Breakfast					
Snack					
Lunch					
Snack					
Supper					
Snack					
Total Servings					

### APPENDIX C – Sample Meal Plans (1 Day)

Athlete #1 - Ideal for gymnasts, and figure skaters<sup>13</sup>

Food <sup>14</sup>	Amount <sup>14</sup>	Food Group Serving <sup>14</sup>
Breakfast		
10cm whole wheat pancake	2 pancakes	2 Grain Products (GP)
Orange juice	125mL	1 Vegetables & Fruit (VF)
Blueberries	125mL	1VF
Milk	125mL	1/2 Milk Product (M)
Scrambled egg	1 egg	1/2 Meat & Alternative (MA)
with milk	60mL	1⁄4 M
margarine/butter	15mL	10ils & Fats (OF)
Snack		
Apple/banana (small)	1 fruit	1VF
Lunch		
Pita bread	1 pita	2GP
Raw vegetables	125mL	1VF
Milk	125mL	1⁄2 M
Tuna	125mL	1MA
Mayonnaise in tuna	10mL	10F
Snack		
Multigrain date bread	1 slice	1GP
Milk	250mL	1M
Supper		
Cooked brown rice	125mL	1GP
Mushrooms and celery	125mL	1VF
Broccoli for stir-fry	125mL	1VF
Beef for stir-fry	75g	1MA
Peaches	125mL	1VF
Yogurt topping	100mL	1/2 M
Oil for stir-fry	10mL	10F
Snack		
Oatmeal cookie	15g	½ GP
Milk-based hot chocolate	125mL	1⁄2 M

Adapted from Coaching Association of Canada - From training diets to meal plans<sup>14</sup>

Vegetable & Fruit	7 servings
Grain Products	6 1/2 servings
Milk Products	3 1/4 servings
Meats & Alternatives	2 <sup>1</sup> / <sub>2</sub> servings
Oils & Fats	3 servings

### Athlete #2 - Ideal for most athletes<sup>13</sup>

Food <sup>14</sup>	Amount <sup>14</sup>	Food Group Serving <sup>14</sup>
Breakfast		
10cm whole wheat pancake	3 pancakes	3 Grain Products (GP)
Orange juice	125mL	1Vegetables & Fruit (VF)
Blueberries	125mL	1VF
Milk	250mL	1Milk Product (M)
Scrambled egg	2 eggs	1Meat & Alternative (MA)
with milk	100mL	1/3 M
margarine/butter	15mL	10ils & Fats (OF)
Snack		
Apple/banana (small)	2 fruit	2VF
Lunch		
Pita bread	1.5 pita	3GP
Raw vegetables	250mL	2VF
Milk	250mL	1M
Tuna	125mL	1MA
Mayonnaise in tuna	15mL	10F
Snack		
Multigrain date bread	2 slices	2GP
Milk	250mL	1M
Supper		
Bread roll		
Cooked brown rice	250mL	2GP
Mushrooms and celery	125mL	1VF
Broccoli for stir-fry	250mL	2VF
Beef for stir-fry	75g	1MA
Peaches	250mL	2VF
Yogurt topping	100mL	1/2 M
Oil for stir-fry	15mL	10F
Snack		
Oatmeal cookie	30g	1GP
Milk-based hot chocolate	125mL	1⁄2 M

Adapted from Coaching Association of Canada - From training diets to meal plans<sup>14</sup>

11 servings
11 servings
4 1/3 servings
3 servings
3 servings

Athlete #3 - Ideal for competitive **endurance athletes** (ie: cyclists training for competition, cross-country runner or skier, triathletes<sup>13</sup>)

Food <sup>14</sup>	Amount <sup>14</sup>	Food Group Serving <sup>14</sup>
Breakfast		
10cm whole wheat pancake	6 pancakes	6 Grain Products (GP)
Orange juice	250mL	2 Vegetables & Fruit (VF)
Blueberries	250mL	2VF
Milk	250mL	1 Milk Product (M)
Scrambled egg	3 eggs	1 <sup>1</sup> / <sub>2</sub> Meat & Alternative (MA)
with milk	125mL	1⁄2 M
margarine/butter	45mL	3 Oils & Fats (OF)
Snack		
Low-fat muffin (small)	1 muffin	2GP
Apple/banana (small)	2 fruit	2VF
Lunch		
Pita bread	2 pita	4GP
Raw vegetables	500mL	4VF
Milk	250mL	1M
Tuna	125mL	1MA
Mayonnaise in tuna	15mL	10F
Salad dressing veggie dip	30mL	2OF
Snack		
Multigrain date bread	3 slices	3GP
Milk	250mL	1M
Fruit for smoothie	250mL	2VF
Supper		
Bread roll	1 roll	2GP
Cooked brown rice	375mL	3GP
Mushrooms and celery	125mL	1VF
Broccoli for stir-fry	250mL	2VF
Vegetable juice	250mL	2VF
Beef for stir-fry	115g	1 ½ MA
Peaches	250mL	2VF
Yogurt topping	175mL	1 M
Oil for stir-fry	15mL	10F
Margarine	10mL	10F
Snack		
Oatmeal cookie	60g	2GP
Milk-based hot chocolate	250mL	1 M

Adapted from Coaching Association of Canada - From training diets to meal plans<sup>14</sup>

Vegetable & Fruit	19 servings
Grain Products	22 servings
Milk Products	5 1/2 servings
Meats & Alternatives	4 servings
Oils & Fats	8 servings

#### APPENDIX D – RECIPES

#### OATMEAL & BERRIES

½ c. oatmeal
½ c. milk
½ c. berries or other fruit

Prepare oatmeal as directed on the package, using milk. Top with berries or fruit. Change it up by topping with nuts, such as sliced almonds. Makes one serving.

#### FRENCH TOAST & TURKEY BACON

2 slices of whole grain bread1 egg1 tbsp. milk2 slices of turkey baconDash of cinnamon

Beat milk and egg in a bowl. Moisten bread on both sides and cook over medium heat on a non stick skillet until golden brown, turning once. Cook turkey bacon evenly on both sides. Sprinkle French toast with cinnamon top with fruit if desired. Makes one serving

#### **OMELET & TOAST**

2 eggs 1/2 c. diced veggies (pepper, onions, mushroom, broccoli, spinach) 1/4 c. diced ham 2 slices of whole grain bread (toasted) cheese

Beat eggs lightly and pour into a non stick skillet over medium-low heat. As the eggs begin to set add veggies and ham. Once eggs are set, carefully fold omelet over itself. Top with cheese and serve with toast. Makes one serving.

#### FRUIT SMOOTHIE

<sup>1</sup>/<sub>2</sub> c. yogurt (any flavour)
<sup>1</sup>/<sub>2</sub> c. orange juice or milk
<sup>1</sup>/<sub>2</sub> banana
<sup>1</sup>/<sub>2</sub> c. frozen berries
Combine all ingredients in a blender. Blend until smooth. Try different combinations of yogurt & fruits to change up the recipe. Add sliced almonds for extra protein and healthy fats. Makes one large smoothie.

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