

Young Athlete's Nutrition Guide

Educational Material

Prof. Dr. Alma Dizdarevic

Melika Ahmetovic, MPhil

Amila Mujezinovic, PhD



Co-funded by the
Erasmus+ Programme
of the European Union

Prof. Dr. Alma Dizdarevic
Melika Ahmetovic, MPhil
Amila Mujezinovic, PhD

Young Athlete's Nutrition Guide

Tuzla, 2022.

ISBN: 978-9926-8689-0-1

Authors:

Prof. Dr. Alma Dizdarevic
Melika Ahmetovic, MPhil
Amila Mujezinovic, PhD

Reviewers:

Prof.dr. Kada Delić, Special Olympics of Bosnia and Herzegovina
Prof.dr. Edina Kuduzovic, Faculty of Education and Rehabilitation, University of Tuzla

Proofreader:

Amila Mujezinovic, PhD

DTP:

Dino Alic

Publisher:

ASSOCIATION FOR HUMAN RIGHTS AND SOCIAL INCLUSION (SOI)

Printing:

800 copies

The book was created within
Erasmus+ No 613106-EPP-1-2019-1-RS-SPO-SCP
"ENCOURAGING THE SOCIAL INCLUSION OF YOUTH WITH INTELLECTUAL DISABILITIES
THROUGH SPORTS"

ISBN: 978-9926-8689-0-1

Erasmus+ Disclaimer

The European Commission support for the production of this publication does not constitute an endorsement of the contents, which reflects the views only of the authors, and the Commission cannot be held responsible for any use, which may be made of the information contained therein.

All rights reserved. No part of this book may be reprinted or reproduced in any form or by any electronic, mechanical, or other means, including photocopying, recording, web distribution, or in any information storage or retrieval system, without permission in writing from the publisher.

Content

Introduction.....	7
Developing Healthy Eating Environment – Role of the Coaches	9
Role of the Coach	10
Nutrition for the young athletes	11
The four food groups.....	11
Vegetables and Fruit	12
Grains	13
Milk and Alternatives	13
Meat and Alternatives	13
Fluids	14
The Food Rating System	15
Promoting Healthy Eating at Home, in School and in Sport Clubs.....	16
Meal planning.....	18
Nutrition and Hydration Guidelines Before Activity	18
Nutrition and Hydration Guidelines During Activity	20
Nutrition and Hydration Guidelines After Activity	21
Additional dietary Needs	22
Vegetarian Eating	24
Nutrition Supplements for Young Athletes	25
Healthy Eating Activities	26
Planning for Tournaments, Competitions, and Travel	27
Healthy Nutrition Kit	28
Positive Body Image: Helping Young Athletes Accept Their Body Weight, Size, and Shape	29
Summary for Athletes with Intellectual disabilities	31
Healthy recipes for young athletes	34
References.....	37



Photo by Sponchia on Unsplash

Introduction

“Good nutrition accounts for 50% of my performance, with 40% being mental and 10% being physical.”

Five-Time Canadian Olympian Hayley Wickenheiser

Proper nutrition and hydration have a major impact on young athletes’ health and sports performance across all levels of training and competition. In order to improve their strength, speed, endurance, or power athletes do not just need to train well – but to eat well too. Athletes having a healthy and balanced diet get more out of their training, perform better during competition, and have less illness and injury (Rodriguez et al. 2009).

For young athletes, proper nutrition is even more important because they must eat well to support both healthy growth and optimal sports performance. The teaching of young athletes to follow a well-balanced approach to eating which includes healthy amounts of fluid, protein, fat, carbohydrate, and other key nutrients – is therefore a very important aim in the sport.

Purpose of this Educational Material is:

- To raise awareness about nutrition for athletes among Coaches & Players.
- To help coaches support young athletes and their parents in making informed choices around good nutrition and hydration for sports performance.
- To provide ideas on how coaches can help build healthier eating environments for athletes in different contexts
- To increase safety of players

Learning Outcomes:

- By using the information in this handbook, coaches will be able to:
- Understand and advocate the value of eating healthy every day to support an athlete's training plan and well-being.
- Understand and value their role to promote healthy eating in different contexts
- Provide ideas for good eating habits
- Help athletes in learning to make healthy food and fluid choices
- Address special concerns that may affect some athletes

Developing Healthy Eating Environment – Role of the Coaches



Coaches have a great impact to athlete's nutrition. Even though they have many responsibilities to promote the optimal development of their athletes and providing recommendations on sports nutrition certainly represent one important issue.

Family, friends, physicians, the media also represent important sources of information for athletes still most of them obtain their information regarding sports nutrition and dietary supplements mainly from their coaches.



If the healthy choice is the easy choice, meaning that athletes are exposed to healthy eating at home, at school, on the road, in recreation centres, and in other spaces where they train or compete, athletes are more likely to eat healthy and perform better.

One important related issue is that most coaches do not have specific or formal training in sports nutrition, and their knowledge is often inadequate to appropriately guide their athletes on nutrition topics (Jacob et al. 2019).

Role of the Coach

The role of the coach is not to be an expert in sports nutrition, but as not all athletes have an (regular) access to a sport dietitian, there is a need to develop nutrition interventions for coaches based on a current evaluation of the recommendations on sports nutrition.

The coaches should:

- Use the information in this Educational Material to teach or remind athletes and parents about healthy eating habits
- Offer workshops on sports nutrition for parents and/or athletes outlining the role of nutrition and healthy eating goals for development and sports performance.
- Set nutrition targets for teams and athletes.
- Talk about healthy food and drink ideas while travelling on a bus or when athletes are changing or stretching.
- Add healthy eating tips to the team talks or at the start or end of practice.

Nutrition for the young athletes

Proper nutrition is important for children and teens involved in sports and other physical activities, as it helps athletes: feel more energetic and less tired; prevent injury and disease; improve strength and endurance, and maintain a healthy weight.

It is important for young athletes and their parents to know: which foods are good sources of energy; when to eat certain foods; how to eat during a sports activity, and when and what to “recharge” with after a sporting event.

Healthy foods provide the energy needed for growth and physical activity, whether the child or teen is a more serious athlete or participates in more leisure daily physical activity (Alberta Health Services, 2018).

The four food groups

Each of the four food groups offer different types and amounts of key nutrients.

Vegetables and Fruit



Grains



Milk and Milk products



Meat and Meat products



Photo by [Randy Fath](#) on [Unsplash](#)

Vegetables and Fruit

Athletes may need to consume more servings from this food group in order to meet their energy needs and to help their bodies recover well.

- Vegetables and fruit provide many vitamins and minerals.
- Most vegetables and fruit contain carbohydrates that provide the body with energy.
- Many vegetables and fruits provide vitamin C which helps protect and repair body cells

Athletes will benefit if they choose vegetables and fruit that are high in vitamin C such as oranges, grapefruit, strawberries, bell peppers, tomatoes, and broccoli.



Photo by [Disiana Caballero](#) on [Unsplash](#)

Grains

Athletes need to eat more servings of Grain Products to help meet their energy needs and supplement their bodies with nutrients, such as B vitamins and fibre.

Grains are high in carbohydrate which is the best source of energy for athletes who need to supply more blood sugar to the brain and muscles during activity (Purcell, 2013)

Without enough carbohydrate as glycogen in the muscles and the liver, athletes are at much greater risk of tiring quickly, having too little energy to train, or performing poorly during competition (Australian Institut of Sports, 2011).



Photo by [Miriam](#) on [Pixabay](#)

Milk and Alternatives

Athletes (especially teens - ages 11–17) need to consume enough Milk and Alternatives as the best sources of calcium and vitamin D to promote bone growth, build muscles and nerves and prevent bone damage.

Milk and Alternatives are also a source of carbohydrate and protein.



Photo by [Eiliv-Sonas Aceron](#) on [Unsplash](#)

Meat and Alternatives

Meat and Alternatives are the best sources of protein needed for building and maintaining muscles and other body tissues, and also good sources of other nutrients such as iron, which helps the body to use and carry oxygen to active muscle (Dietitians of Canada, 2010)

! Athletes have slightly higher protein needs than those who are less active, but if athletes eat too much protein they may not consume enough nutrients from the other food groups.

There are alternatives to meat such as legumes (kidney beans, brown beans, chickpeas, lentils, and split peas) - they are high in fibre, low in fat, and a source of carbohydrate, protein, and vitamin and minerals.

! When eating meat alternatives such as legumes, athletes should also include a source of vitamin C (refer to Vegetables and Fruit above) to increase the amount of iron they absorb from these foods.

High protein, low carbohydrate diets are not a good choice for sports performance since carbohydrates are the body's preferred source of energy

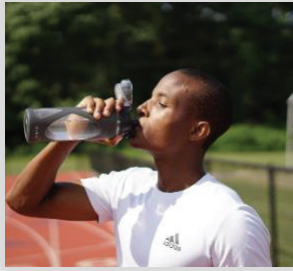


Photo by [Nigel Msipa](#) on [Unsplash](#)

Fluids

Fluids, especially water, are very important for athletes because they:

- prevent dehydration, and
- help maintain a healthy body temperature.



To stay healthy, athletes need to drink plenty of fluids **before, during** and **after exercise**.

The amount of fluid an athlete needs depends on many factors, including:

- age,
- body size,
- degree of physical activity, and
- the environment.

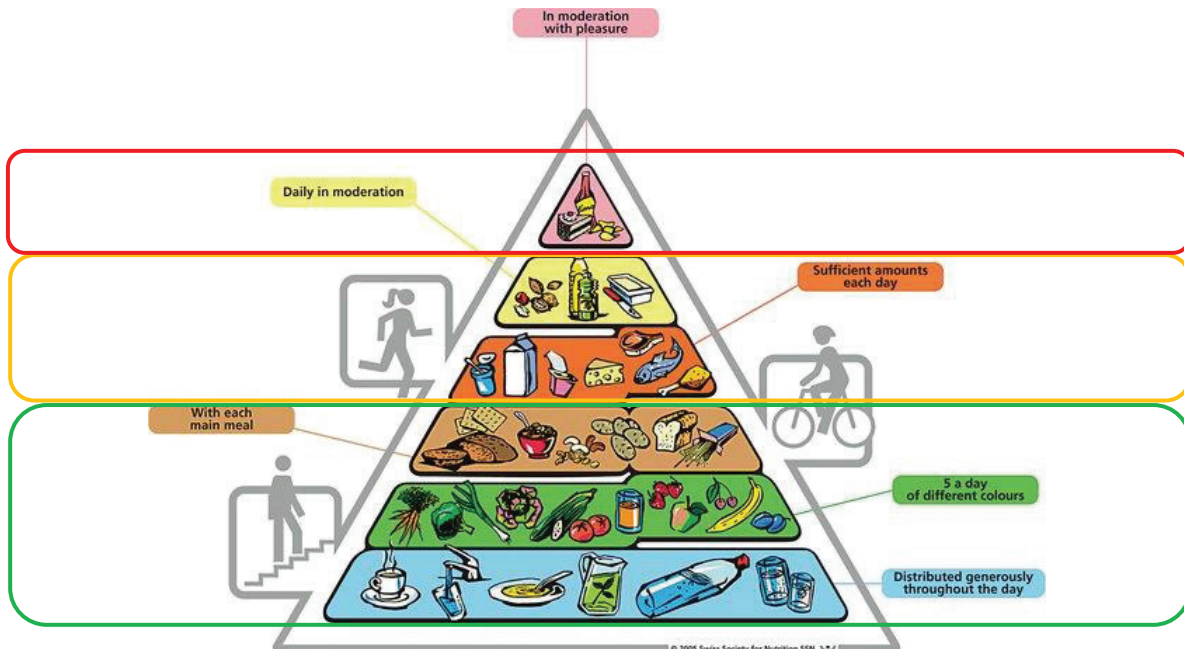
Before exercise, athletes should drink 400 to 600 mL of water (2 to 3 hours before the event).

During exercise, athletes should drink 150 to 300 mL every 15 to 20 minutes. If the total time spent exercising or participating in a sport is less than an hour, water is usually enough. If the activity lasts longer than an hour and/or takes place in hot, humid weather, sports drinks (which contain sodium and glucose) are recommended.

After exercise, athletes need to drink enough to replace the fluid they lost from sweating. Sodium-containing fluids (sport drinks) and snacks will help extinguish thirst and keep fluids in the body.

The Food Rating System

The food rating system puts all foods into categories based on certain nutrition criteria.



The three rating system categories are: Choose Most Often, Choose Sometimes, and Choose Least Often.

Choose Most Often - High nutrient foods

These foods and drinks should be consumed daily, in appropriate amounts and portion sizes based on age category.

Example: an apple.

Choose Sometimes - Moderate nutrient foods

While these foods and drinks may still provide beneficial nutrients, they tend to be higher in added sugar, unhealthy fats or sodium (salt).

Example: sweetened applesauce.

Choose Least Often - Low nutrient foods

These are foods and drinks that are low in nutrients and higher in sugar, fat and salt and may contain sugar substitutes.

Example: cake; bonbons; apple flavoured drink.

Promoting Healthy Eating at Home, in School and in Sport Clubs



Healthy eating starts where you live, work, learn and play. Therefore it is important to develop a network involving all the contexts young athletes are living, working, learning and playing in and:

1. Set goals for healthier eating	<ul style="list-style-type: none">• Plan to eat healthier.• Choose realistic aims that will work for you (for example: drink enough water; eat your breakfast; choose a healthy snack)
2. Choose and prepare healthy food	<ul style="list-style-type: none">• Choose foods higher in fibre and lower in fat, sodium, and sugar.• Use healthy cooking and baking methods.• Flavour foods with spices, herbs, vinegars or ground seeds.
3. Eat more vegetables and fruit	<ul style="list-style-type: none">• Eat enough servings of vegetables and fruits every day
4. Eat whole grains	<ul style="list-style-type: none">• Increase your fibre intake by eating whole grain foods• Try grains like whole wheat, quinoa, barley, rye, oats, millet, or brown rice.
5. Control your portions	<ul style="list-style-type: none">• A healthy plate is half of the plate filled with vegetables and fruit.
6. Drink water	<ul style="list-style-type: none">• Drink water throughout the day.• Drink milk at meals.• Limit juice to 125 mL (½ cup) per day.• Avoid drinks with added sugar.



In order to promote healthy eating in different contexts Coaches can:

1. **Support positive behaviour through „healthy” rewards** (do not include unhealthy food options such as candy or chocolate) like: free music download, movie pass, ticket to a sports event, water bottle, frisbee, soccer ball, baseball, football...
2. **Promote healthy eating** by being a “healthy eating role model”
3. **Raise awareness of athlete families** about healthy eating
4. **Organise Healthy Fundraiser Event** - selling healthy food such as fruit or non-food items
5. **Raise awareness about Healthy Foods** at School Canteens and Cafeterias (suggest taste tests or student surveys to determine which healthy options athletes and their friends are willing to eat).
6. **Organise Healthy Foods at Sporting Events**
7. **Promote Healthy Nutrition School Policy** - work with school leaders and student/parent councils to lobby the school or school district to develop a nutrition policy that supports healthy food options.

Suggested Activity for different contexts: “Create Your Own Healthy Food Guide”

Learning Objective: Athletes will learn how to set up their own healthy food guide.

Materials Needed (depend of the individual needs and abilities): Picture material; Access to the online tool “My Food Guide”.

Description:

- Have the athletes create a personal food guide using picture material or My Food Guide Tool
- Introduce the food rating system - Choose Most Often, Choose Sometimes, and Choose Least Often.

Meal planning

Meal planning helps ensure the young athlete gets what he or she needs, not just on the regular basis but especially when getting ready for an athletic event.

With the meal planning an athlete can limit or avoid foods that may have a negative impact on the health and sport performance (Alberta Health Services, 2018).

Nutrition and Hydration Guidelines Before Activity



Why is this important?

1. Proper nutrition and hydration before activity can improve mental and physical performance.
2. Dehydration and over-hydration can have a negative effect on sport performance and health.
3. Athletes need to drink 400–600 mL (1 ½–2 ½ cups) of fluid, 2–3 hours before activity.
4. The best foods to eat before activity are high in carbohydrates, moderate in protein, and low in fat and fibre to fuel the muscles and reduce any chance of stomach upset.
5. Athletes need to test new foods and drinks before training sessions not before a competition, in case these items cause stomach upset or other physical effects.

Background Information



Nutrition Before Activity:

The best foods to eat before activity are high in carbohydrate and moderate in protein. These foods should also be lower in fat and fibre to reduce the chance of stomach upset. High carbohydrate foods digest quickly and should be the main source of fuel for activity.

It is important to consider, that the athletes always should eat familiar foods that they already know before a competition – sometimes the new foods can cause stomach upset and cramping during activity.

<div style="background-color: #4CAF50; color: white; padding: 10px; border-radius: 10px; margin-bottom: 5px;"> <h3>Choose</h3> <p>Higher in carbohydrates and moderate in protein</p> </div> <div style="border: 1px solid #4CAF50; border-radius: 15px; padding: 10px; margin-top: 10px;"> <ul style="list-style-type: none"> ○ Fruit ○ Fruit smoothies ○ Pasta in tomato sauce ○ Cereal ○ Bread ○ 1% or skim milk ○ 1% milk fat (M.F.) or less yogurt with fruit ○ 1% M.F. or less cottage cheese and fruit ○ Poached eggs on dry toast ○ Lean meat (chicken breast, ham) in a wrap </div>	<div style="background-color: #F44336; color: white; padding: 10px; border-radius: 10px; margin-bottom: 5px;"> <h3>Avoid</h3> <p>Higher in carbohydrates and moderate in protein</p> </div> <div style="border: 1px solid #F44336; border-radius: 15px; padding: 10px; margin-top: 10px;"> <ul style="list-style-type: none"> ○ Cheeseburgers ○ French fries/Potato chips ○ Bran muffins ○ Cream-based soups or sauces ○ Ice cream ○ Chocolate or candies ○ Peas, beans and lentils ○ Cabbage, broccoli or cauliflower ○ High fat meats and cheese ○ Deep-fried foods </div>
--	--



Hydration Before Activity:

Water has many key functions in the body including the transport of nutrients to the muscles and tissues, and the control of body heat through sweat (Burke, Deakin, 2010)

When an athlete has lost as little as two percent of body weight during activity, mental and physical performance are greatly impaired (Barr, 1999).

Athletes must consume enough fluids before they begin an activity and then continue to drink during and after activity.

Dehydration occurs when an athlete loses more water through their sweat, breath, and urine, than they take in.



A thirst as a sign of dehydration is not a reliable sign because activity weakens the thirst signal, and one may already be quite dehydrated by the time one feels thirsty.

According to Barr (1999) the most common signs and symptoms of dehydration include: feeling dizzy or lightheaded; having less urine and/or dark urine; feeling tired and weak; raised body temperature; nausea; muscle cramps; having chills; headaches; high heart rate; thirst.

Over-hydration occurs when there is too much fluid and not enough sodium in the blood and it happens when the athletes drink large amounts (8–10 L or 36–40 cups) of low sodium fluids (like plain water) before or during long and intense activity (Prado de Oliveira, Burini, 2011).



The signs and symptoms of over-hydration are similar to the signs and symptoms of dehydration and can pose safety risks to an athlete's health.

Athletes can prevent over-hydration by staying within hydration guidelines at all times (Purcell, 2013).

Hydration Guidelines Before Activity:

400–600 mL (about 1 ½–2 ½ cups) of fluid 2–3 hours before activity

Nutrition and Hydration Guidelines During Activity



Nutrition during activity

In most cases, an athlete will not need to eat during activity if they have eaten enough before they train or compete.

Athletes may need to eat during an activity when:

- it is a nonstop endurance activity that lasts longer than one hour
- it is a morning activity and the athlete has only eaten a small breakfast

Example of good carbohydrate food choices include:

- 1 large banana (30 g carbohydrate)
- medium orange (12 g carbohydrate)
- 250 mL (1 cup) watermelon (11 g carbohydrate)
- 4 dried apricots (13 g carbohydrate)
- 1 small box (28 g) raisins (22 g carbohydrate)



Hydration during activity

When athletes perform an intense activity for more than one hour, they need to drink enough water to maintain hydration and energy levels.

Athletes can consume carbohydrate through sports drinks or food or a combination of both.

In the Table below the most common drinks young athletes may choose during activity can be compared (Alberta Health Services, 2018).

Drink	Carbohydrate (CHO) g per 250 mL	Sodium mg per 250 mL	Potassium mg per 250 mL	Caffeine, Natural Health Products, Sugar Substitutes	Carbonated	Good Choice During Activity?
Goal Range	8 - 20	115 - 173	19 - 49	No	No	
Water	0	5	0	No	No	Best choice during activity that lasts less than one hour (Purcell, 2013)
Sport Drinks	8 - 20	100-210 <i>(always check the label)</i>	15-100 <i>(always check the label)</i>	No <i>(but always check the label)</i>	No	Drink during intense activity that causes excessive sweating or lasts for more than 1 hour (Purcell, 2013)
Energy Drinks	27-30 <i>Too high</i>	Varies Too low or too high	Varies Too low or too high	Yes Contains caffeine; may also have sugar substitutes or natural health products	Sometimes	Not a good choice (Heneman, Zidenberg-Cherr, 2007)
Vitamin Fortified Flavoured Waters	13-14	0-13 Too low	0-875 Too low or too high	Sometimes May contain caffeine, sugar substitutes or natural health products	Sometimes	Not a good choice (Glacéau, 2013)
Soft Drinks	22-32 <i>Too high</i>	10-53 Too low	3-15 Too low	Sometimes May contain caffeine or sugar substitutes	Yes	Not a good choice (Health Canada, 2008)
Fruit juice	24-36 <i>Too high</i>	2-14 Too low	2-68 Can be too low	No	No	Not a good choice (Health Canada, 2008)
Coconut water	9	2-266 Can be too low	634 <i>Too high</i>	No	No	Not a good choice

Table. Most common drinks young athletes may choose during activity (Alberta Health Services, 2018)

Nutrition and Hydration Guidelines After Activity



Nutrition after activity



Nutrition after activity

The timing of the snack or meal following an activity will depend on the amount of time between training sessions or competitions.



Less than 24 hours until next activity:

Athletes who have less than a full day to recover between sessions should eat food sources of both carbohydrate and protein within 30 minutes of finishing an activity, as it ensures the muscles will fill their glycogen stores before the next activity.



More than 24 hours until next activity:

Athletes who have more time to recover between sessions can refuel with food sources of carbohydrate and protein when they are hungry for their next regular meal or snack. There is no need to refuel within 30 minutes of activity to achieve enough glycogen storage in muscles when the athlete has more than 24 hours to recover.



Hydration after activity

It is important to replace all of the fluid lost through sweat after finishing activity, practice, or competition.

The best fluid to choose after activity is water. For variety, an orange, lemon, or cucumber slices can be added to water.

Staying hydrated ensures that young athlete can optimally perform in sport, school, and at home. Fluids play a critical role in our body, performing a variety of tasks, including:

- optimal body functioning on every level including cognition, digestion, muscular functions, and joint lubrication.
- removal of waste products and transporting nutrients.

Hydration Guidelines After Activity:
at least 250–500 mL (1–2 cups) of fluid

Additional dietary Needs

Some young athletes and especially athletes with an intellectual disability may have additional dietary needs.

Table below provides suggestions for optimizing nutrition in some common nutrition-related health issues.



It is always recommended to consult with doctor and/or a registered dietitian before making any changes in the diet. Working with these professionals will provide an individualized plan that will meet young athlete's unique nutrition needs.

Health Issue	Nutrition Suggestions
Constipation	<ul style="list-style-type: none"> • Increase intake of water and foods with high water content (vegetables and fruit are approximately 90% water). • Increase intake of foods that are high in fibre (whole grain breads, and cereals; raw, cooked or dried fruits such as prunes; vegetables, and legumes such as beans, lentils, and split peas). • Consider supplemental fibre products and/or consult the healthcare professional.
Diarrhea	<ul style="list-style-type: none"> • Acute diarrhea can cause dehydration and electrolyte loss - consider a rehydration drink and consult the healthcare professional. • Chronic diarrhea caused by medications or food intolerances can cause nutrient deficiencies - consult the doctor and dietitian.
Underweight	<ul style="list-style-type: none"> • Incorporate high-calorie snacks like milkshakes, trail mix, cheese, and granola. • Add sauces, fats, and spreads to foods. • Consider supplemental nutrition products and/or consult the healthcare professional.
Overweight	<ul style="list-style-type: none"> • Consult the doctor and dietitian about healthy weight management. Young athletes should not be placed on calorierestricted diets while they are still growing. • Limit screen time and incorporate more daily physical activity.
Feeding Problems	<ul style="list-style-type: none"> • Certain behaviours such as avoiding certain foods due to colour, texture, or taste can result in decreased variety and increased risk of nutrient deficiencies – consult the doctor and dietitian. • Consider creating an interactive relationship with food by: <ul style="list-style-type: none"> ○ letting the young athlete help with food preparation. ○ talking about different foods: where they come from and their colours and textures. ○ having a tasting “party” to try new foods. ○ letting the young athlete shop for foods at the grocery store. ○ helping the young athlete plant a vegetable garden. • Chewing and swallowing difficulties may limit the type and texture of foods that are safe for the young athlete to eat. This may compromise overall nutrition and hydration status. Consulting the doctor and dietitian is recommended.

Table: Strategies for Common Nutrition-Related Health Issues (Alberta Health Services, 2018)

Vegetarian Eating

Athletes can be vegetarians, but they need to be mindful of their diet's potential inadequacies. It's always a possibility that the young vegetarian athlete may require a vitamin/mineral supplement to ensure the diet is complete. Also seeing a registered dietitian is a good step to help the athlete maintain the nutrition necessary for their sport while choosing a vegetarian lifestyle.

Being a vegetarian is not 'one size fits all' or the same for every person.

The Table below outlines the different types of vegetarian diets.

Vegetarian Type	Animal Proteins Allowed	Animal Proteins Excluded
Semi-vegetarian	May allow animal proteins in limited amounts	Variable
Lacto-ovo vegetarian	Dairy and eggs	Meat, fish and fowl
Lacto-vegetarian	Dairy	Eggs, meat, fish, fowl
Vegan	None	All

Protein and certain vitamin and mineral intake can be low as vegetarian diet excludes certain foods.

The more restrictive the diet is, the more thoughtful one needs to be about incorporating the following nutrients:

Protein	Calcium and Vitamin D	Vitamin B12	Iron
Protein intake is important for young athletes because it helps build and repair muscles.	<p>Calcium and vitamin D build and maintain strong bones.</p> <p>Calcium is involved in many processes that send messages to the nerves and muscles so that the body can move.</p>	<p>Vitamin B12 helps maintain healthy blood cells and the nervous system.</p> <p>B12 deficiency can lead to a certain type of anemia that can cause such symptoms as fatigue, which can affect a young athlete's performance.</p>	<p>Iron helps carry oxygen throughout the body, including muscles where it can be stored.</p> <p>Low iron in the body can mean a tired athlete.</p>
<ul style="list-style-type: none"> Nuts and nut butters Seeds Beans and lentils Whole grains Tofu and soy milk Protein analogs (i.e. veggie burgers) Protein bars 	<ul style="list-style-type: none"> Dairy foods and eggs (depending on vegetarian type!) Fortified foods and beverages such as soy, rice and almond milks, orange juice, cereals and protein bars. Note: check the label for vitamin D and calcium! Vegetables, like broccoli, kale and Bok Choy. Sesame seeds, almonds and dried beans. 	<ul style="list-style-type: none"> Dairy and eggs (depending on vegetarian type). B12 fortified foods (check labels). Meat analogs (i.e. veggie burgers, soy burgers and soy chicken analogs). Rice, soy and almond milk. Cereals and protein bars. 	<ul style="list-style-type: none"> Legumes, enriched cereals and breads. Nuts, blackstrap molasses (thick syrup) and prunes. Dark green vegetables.

Nutrition Supplements for Young Athletes

Parents and caregivers are cautioned against using dietary supplements, including vitamins, herbs, and various pills and powders without first consulting a health care professional (Washington State Health Department, 2002).



Some supplements can produce medication interactions and may pose a health risk.

Supplements should not be used as a “crutch” for unhealthy eating habits. The best and highest quality source of vitamins and minerals is directly from the original source – food!

Healthy Eating Activities

Incorporating healthy eating is easier than one thinks.

10 healthy eating changes for the young athlete and the entire family (Alberta Health Services, 2018).

Instead Of...	Try this...
Using food as: - a reward for good behaviour, - to calm your young athlete, or - to motivate him/her to do something.	Reward with verbal praise or a hug. Start a “gold star” behaviour chart and reward with a movie ticket...
Allowing young athlete to eat and access food whenever and wherever he/she wants throughout the day.	Control access by having structured meal and snack times. Establish eating habits every 3 to 4 hours.
Preparing and eating meat every day.	Have plant sources of protein (beans, lentils and tofu) often as these foods provide a boost of fibre, less saturated fats, and other nutrients.
Shopping for groceries when you run out, without a shopping list or meal plan.	Develop a daily meal schedule and create a grocery shopping list as it saves time and money.
Buying foods that seem the quickest to prepare.	Read the nutrition information on packaged food before buying.
Making the same meals over and over again, which may create boredom and discourage variety.	Try a new recipe every 2 weeks. There are thousands of free recipes online as well as cookbooks with nutrient-dense, easy-to-prepare meals.
Not including the young athlete in grocery shopping or meal preparation.	Involve the young athlete actively at buying groceries and preparing meals. It will help to focus behaviour, teach valuable skills and knowledge of healthy eating.
Stocking your fridge with an endless variety of beverage choices.	Switch to water and milk as primary fluid choices.
Serving adult size portions and reprimanding the young athlete if he/she does not finish the entire plate of food.	Allow the athlete to eat until he/she feels full. Remember that young athletes who are tired or who have just exercised hard may not feel like eating a lot.
Giving up on a food if your young athlete initially refuses to eat it or not letting him try a new food.	Don't give up on certain foods as tastes change with time. Try serving the food at a different temperature, with different sauces or spices, and at different meals.

Planning for Tournaments, Competitions, and Travel

Key teaching points

1. Making healthy food choices and drinking enough fluids during competitions for good mental and physical performance.
2. The amount and type of food athletes consume will vary based on the amount of time they have between competition or training sessions.
3. Never test new foods during the competition. Athletes need to eat familiar foods during competition to avoid stomach upset and cramps.
4. Athletes and their parents should focus on the type and amount of food and drinks to ensure good nutrition and hydration during competitions.
5. Coaches, athletes and parents should look into which food and drinks are available at restaurants and event venues when on the road. When healthy choices are not available, it is important to bring healthy food and drinks.
6. It is important to consider food safety when packing foods and drinks to prevent food borne illnesses. Cold foods must be kept cold and hot foods kept hot.

The organization and planning of a sports tournament or travel to the sport tournament is not a one person task, but does require a dedicated leader who takes responsibility of making important, final decisions.

There are many jobs to be done.

No matter what length of time the athletes need to travel for competition, the goal is to make sure they arrive ready to perform at their best.

Some athletes may see travel as a time to have fun so it is important to plan ahead to make sure they still think about healthy food choices.

Healthy Nutrition Kit



1. Whole grain products:	Sliced bread Buns Pita shells Tortillas Bagels Crackers
2. Protein-rich foods to eat with grain products:	Natural nut or seed butters* Flavoured canned tuna Salmon canned in water Tuna canned in water Hummus* Lower fat cheeses* Sliced ham* Sliced roast beef* Sliced chicken or turkey breast*
3. Snack items:	Fresh fruit Fresh vegetables (celery, carrots, snap peas, grape tomatoes) Fruit canned in its own juice Unsweetened fruit sauces Mixes of dried fruit, roasted nuts or seeds Granola bars** Instant plain oatmeal (requires a thermos of hot water or hot milk) Cold cereal Boiled eggs* Greek yogurt*
4. Beverages:	Water 1% or skim milk* Unsweetened fortified soy beverage* Herbal teas
5. Condiments:	Mustard* Light mayonnaise* Relish*
6. Supplies:	Personal water bottle Thermos Napkins Travel plates and bowls (often sold at camping supply stores) Travel cutlery and can opener (often sold at camping supply stores) Cooler (with ice) Small garbage bags Moistened wipes Snap-lock plastic bags or food containers Hand sanitizer

Positive Body Image: Helping Young Athletes Accept Their Body Weight, Size, and Shape



Body image is defined as a multidimensional model which attempts to explain the interpretation that people consciously make of their own body (Pleska-Skwerer, Sullivan, Joffre, & Tager-Flusberg, 2004).

It is hierarchically organized into two different dimensions: physical and affective-emotional (Miguez, de la Montana, Gonzalez, & Gonzalez, 2011).

It is composed of appearance, body shape, physical strength, health, and other dimensions, and the degree of self-awareness will affect emotion and health behavior, such as weight control, personal social adaptation, psychological stress, self-development, and interpersonal relationship (Wang et al., 2017).

In today's highly developed network media, people tend to focus on their own body shape and appearance but ignore health.

Overexposure of good body shape will lead to low body satisfaction, thus increasing the risk of suffering from chronic disease and mental disorders and inhibiting exercise participation (Andrew et al., 2016; Sun et al., 2017).

Relevant research found (Ricciardelli and McCabe, 2004) that the level of personal satisfaction with body image has a strong correlation with the degree of sports participation. The more positive the body image is, the higher the degree of sports participation is; on the contrary, those who are dissatisfied with their body images or hold negative body images have an inhibitory effect on exercise behavior.

For young athletes, maintaining a positive body image is difficult at the best of times, but when a competitive team atmosphere is added into the mix, that positivity can become even harder.

No matter how much the coaches talk about the importance of pulling together as a team, the athletes are going to naturally compete with each other, as well as with rival teams. This is a healthy behaviour, but it can go too far, as teammates can start mimicking each other's behaviour.

The coaches have to notice the subtle ways the team is creating an unhealthy environment when it comes to body image, eating patterns, and other habits.

Warning signs

1. Changes in performance: big shift in performance, where physically (a change in weight or body shape, or a major change in fitness) or psychologically (a difference in their mood, more conflicts with teammates and coaches, and more isolative tendencies) seems off.

2. Behaviour around meals: avoiding meals or changing their behaviours around mealtime.

3. Overtraining: training beyond the prescribed amount or trying to push through injury.

4. Need for validation

5. Need for control: Often, disordered eating and overtraining are linked to an athlete's need for control. Between parents, school, and sports, their sphere of control is limited, and their body is one of the few things that they can 'control.'

6. Bullying others: Food shaming, or critiquing what other people are doing, is common. Bullying obviously cannot be tolerated on a team, but coaches should remember that the food-shaming athlete is likely suffering and needs help.

7. Fixation on food trends: if athletes are often comparing what they are eating, talking about new diets, or gossiping about body image it could be a sign of a body image problem. Research has shown that information provided by peers is more important to young athletes than what they see in the media or read about.








































How to help foster positive body image

1. Our words matter: how we speak about eating habits, body type or weight, or any kind of physique-based advice have consequences as the athletes form an idea around even small comment.
2. Focus on strength: Rather than focusing on a specific type of physique, focus on strength (example: ask athletes what makes them feel strong, how can they maintain that level of strength, and what gives them energy).
3. Create a team ethos that focuses on body positivity
4. Seek out good role models in the community.
5. Bring in an expert: If you notice that some of your team members are struggling with body image issues or implementing unhealthy eating habits, you can bring in a sport psychologist or another specialist to address the team.

Body image is often influenced by surrounding people and cultures, which means that a competitive team environment can make it hard to maintain a positive body image. By watching out for these warning signs and fostering positive habits, coaches can help develop positive body image on their teams.

Summary for Athletes with Intellectual disabilities

What should I drink when I am active?

Drink			
Water 			
Milk 			
100% Fruit Juice 			
Sport Drinks 			
Coconut Water 			
Flavored Water 			
Energy Drink 			
Soft Drinks 			
Beverages 			

Additional information to the table:

Water – good to drink throughout the day. Best choice before and after activity. Best choice during activity unless sweating a lot for more than an hour.

Milk - unflavoured milk or soy milk. Can cause stomach upset during activity.

100% Fruit Juice - Limit to 125 mL (½ cup) per day. Can cause stomach upset during activity.

Sports Drink - only during intense activity when sweating for more than an hour. Replaces electrolytes and carbohydrates during long bouts of activity.

Coconut Water - Not recommended. Does not replace enough electrolytes during intense activity. Can cause stomach upset during activity.











Flavoured Water - Not a healthy choice. Can be higher in sugar or sugar substitutes. Can cause stomach upset during activity.

Energy Drink - Not a healthy choice. Can be higher in caffeine and sugar. May have added herbs. Can cause stomach upset during activity.

Soft Drinks - Not a healthy choice. May contain caffeine or sugar substitutes. Carbonation causes upset stomach during activity. Regular soft drinks are higher in sugar

Beverages - Not a healthy choice. All are higher in sugar. Can cause stomach upset during activity.

What should I eat when I am active?

Eat			
			
			

Additional Information to the Table:

Before Activity - High carbohydrate foods digest quickly and should be the main source of fuel within 2–3 hours before activity. Meals and snacks should have a lot of carbohydrate, but only a medium amount of protein to make sure that stomach empties before activity. Food should be low in fat and lower in fibre, to prevent gas or stomach upset.

During Activity - Eat during activity to provide energy to the brain and muscles if:

- You are involved in an intense, nonstop endurance activity that lasts longer than one hour (running, cycling or cross-country skiing).
- You have only eaten a small meal or snack before activity and you run out of energy.

Do not try a new food during a competition! Food products such as sports gels, beans, chews and bars can help replace blood sugar and electrolytes (sodium and potassium) during intense activity that lasts more than an hour. However, these products do not keep the body hydrated while sweating a lot so that water intake increases at the same time. Sports food products are only helpful during activity. They are not healthy food choices before or after activity because they are low in fibre and high in sugar and calories. It is better to choose real foods at these times.

After Activity

Proper nutrition and hydration are important after activity, training, or competition to refuel the muscles and repair tissue. Carbohydrate and protein are the best choice.

Healthy recipes for young athletes

Homemade Citrus Sports Drink



Ingredients:

2 Tbsp sugar 30 mL
1/8 tsp salt 0.5 mL
2 Tbsp boiling water 30 mL
2 Tbsp orange juice 30 mL
1 Tbsp lemon juice 15 mL
1 3/4 cup cold water 425 mL

Directions: Combine the sugar and salt in a bowl. Add boiling water and stir until sugar and salt dissolve. Stir in remaining ingredients and chill. Makes 500 mL (2 cups).

Tip: Other unsweetened, 100% fruit juices can be used instead of orange juice.

Waffle Sundae



Ingredients:

2 protein waffles
1/4c greek yogurt
1 cupped handful of blueberries or strawberries

Directions: Toast both waffles, then top with greek yogurt and berries.

Fall Protein French Toast



Ingredients:

2 slices sprouted grain or gluten-free bread
3 egg whites
1/3 cup unsweetened almond milk
Cinnamon
1/2 tsp vanilla extract
1 thumb sized amount of maple syrup

Directions: Mix all ingredients (other than bread) together in a large bowl. Coat each piece of bread generously with mixture. Add to a pan over medium heat. Cook thoroughly. Drizzle on maple syrup when done.

Yogurt Parfait



Ingredients:

- 1 Greek Yogurt (1 small cupped-hand amount): Plain or vanilla
- 1 Fruit (1 small cupped-hand amount): blueberries, strawberries, pineapple, banana, raspberries
- 2 Topping (1-2 thumb sized amount of granola, dark chocolate, shredded coconut)

Directions: Mix yogurt and fruit and enjoy!

Protein wrap



Ingredients:

- 1 whole wheat or gluten free wrap
- 1-2 palm sized amount of protein (chicken, turkey, steak, tuna)
- 1 thumb sized amount of mayo or hummus
- Lettuce or favorite vegetable
- 1 yogurt, cup of fresh fruit, 1/2 cup trail mix.

Directions: Add ingredients to wrap and enjoy.

Chicken Quesadilla



Ingredients:

- 2 large tortillas
- 1-2 palm sized amount of cooked shredded chicken
- 1/4 cup shredded cheese
- Pick: .5-1 cup rice, sweet potato, salad, fruit.

Directions: Place 1 tortilla on stove over medium heat. Add chicken and cheese and top with other tortilla. Once the tortilla starts to brown, cheese melts, and chicken heats, flip quesadilla and cook the other side.

Turkey Roll-Ups



Ingredients:

4 slices of deli turkey
1 slice of Swiss cheese
1-2 fist sized portions of veggie slices
1 Tbsp roasted red pepper hummus

Directions: Add turkey to a plate and roll. Add cheese and sliced veggies. Dunk in hummus and enjoy.

Fruit and Nut Butter



Ingredients:

1 Fruit (1 small cupped-hand size): apple, strawberries, banana
1 Nut Butter (1 thumb sized amount): peanut butter, almond butter, sunflower butter, cashew butter

Directions: Spread butter on fruit and enjoy!

Apple Cinnamon Bites (eat 1-3 as a snack)



Ingredients:

3/4 cup oats
3/4 cup sliced apple
1/4 cup almond butter
1/2 cup maple syrup
1 tsp cinnamon

Directions: In a food processor, process the oats and apples. Add the almond butter, syrup and cinnamon and continue to process until it forms a dough. Roll into balls and enjoy!

Strawberry Banana Smoothie



Ingredients:

1 banana
1-2 small cupped hand amounts of frozen strawberries
1 fist size amount of spinach
.75-1 cup unsweetened vanilla almond milk

Directions: Blend

References

Alberta Health Services (2018). Sports Nutrition for Youth: A Handbook for Coaches

Andrew, R., Tiggemann, M., and Clark, L. (2016). Positive body image and young women's health: implications for sun protection, cancer screening, weight loss and alcohol consumption behaviours. *J. Health Psychol.* 21, 28–39.

Australian Institute of Sport [Online]. (2011) Available from: URL:
http://www.ausport.gov.au/ais/nutrition/factsheets/basics/carbohydrate_how_much

Barr, S.I. (1999). Effects of dehydration on exercise performance. *Can J Appl Physiol.*;24(2):164-72

Burke, L., Deakin, V. (2010). Clinical sports nutrition. 4th ed. Australia: McGraw-Hill Australia Pty Ltd.

Dietitians of Canada. (2010). Vitamins and minerals for athletes.[Online]. Available from:
URL:<http://www.dietitians.ca/Nutrition-Resources-A-Z/Factsheets/Sports-Nutrition/Vitamins-and-Minerals-for-Athletes.aspx>

Gillen, M. M. (2015). Associations between positive body Image and indicators of men's and women's mental and physical health. *Body Image* 13, 67–74.

Jacob, R., Couture, S., Lamarche, B., Provencher, V., Morissette, É., Valois, P., Goulet, C. & Drapeau, V. (2019). Determinants of coaches' intentions to provide different recommendations on sports nutrition to their athletes. *Journal of the International Society of Sports Nutrition.*

Miguez, B. M., de la Montana, M. J., Gonzalez, C. J., & Gonzalez, R. M. (2011). Agreement between the self-perception on the body image and the nutritional status in college students from Orense. *Nutricion Hospitalaria*, 26, 472-479.

Plesa-Skwerer, D., Sullivan, K., Joffre, K., & Tager-Flusberg, H. (2004). Self-concept in people with Williams syndrome and Prader-Willi syndrome. *Research in Developmental Disabilities*, 25, 119-138.

Prado de Oliveira, E., Burini, R.C. (2011). Food-dependent, exercise-induced gastrointestinal distress. *Int Soc Sports Nutr*; 8:12.

Purcell, L.K. (2013). Sports Nutrition for the young athletes. *Canadian Paediatric Society Paediatric Sports and Exercise Medicine. Pediatric Child Health*;18(4):200-2.

Ricciardelli, L. A., and McCabe, M. P. (2004). A biopsychosocial model of disordered eating and the pursuit of muscularity in adolescent boys. *Psychol. Bull.* 130, 179–205.

Rodriguez, N.R, DiMarco, N.M., Langley, S,. (2009). American Dietetic Association, Dietitians of Canada, American College of Sports Medicine. Position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine. Nutrition and athletic performance. [Online]. *Journal of the American Dietetic Association*;109(3):509-27. Available from: URL:
<http://www.dietitians.ca/downloadable-content/public/noap-position-paper.aspx>

Washington State Health Department (2002). Nutrition Interventions for Children with Special Health Care Needs

ISBN 978-9926-8689-0-1