

Nutrition, health and recovery guidelines and benchmarks

Development stages	Program components	Development benchmarks and tools
Active Start M-F: 6 and under	<ul style="list-style-type: none"> ✓ frequently exposed to a variety of different foods and tastes ✓ well balanced diet; eating often ✓ Hydration during and after activity (active kids should drink on a schedule; thirst is a poor indicator of hydration status for young athletes) ✓ Adequate calcium intake, require 800 mg a day 	<ul style="list-style-type: none"> ✓ Good appetite <ul style="list-style-type: none"> • Educate parents and coaches the signs and symptoms of hunger/dehydration as children are poor judges e.g. mood changes, early fatigue • Educating children to recognize fullness and hunger cues in themselves ✓ Introduce varieties of fruits, vegetables, fish and meat <ul style="list-style-type: none"> • Educate parents - Healthy Plate Model • Food guide education • Reintroducing foods to children they may not 'like' in different ways • Try a game e.g. blindfolded taste testing to introduce new flavours and foods ✓ Healthy eating attitudes and environment <ul style="list-style-type: none"> • Encouraging parents of mindful eating (sitting at dinner table, TV off, eating with the family) • Parents responsibilities as role models for healthy attitudes towards food • Get children involved with helping to prepare snacks & possibly meals ✓ Energy level maintained throughout activity <ul style="list-style-type: none"> • Coaches ensuring adequate hydration breaks throughout and after activity - water only (no sports drink promotion at this age since training sessions are short). ✓ Quick recovery from physical activity <ul style="list-style-type: none"> • Educating parents to always have readily available healthy snacks for quick recovery after activity ✓ Calcium: at least 2 cups of milk/soy beverage daily
Fundamentals (1) M-F: 6-7	<ul style="list-style-type: none"> ✓ frequently exposed to a variety of different foods and tastes ✓ well balanced diet (high in nutrient-dense complex carbohydrates, moderate amounts of protein, sugar and sodium, low in fat and cholesterol; high in good fat/omega-3) ✓ Hydration during and after activity (active kids should drink on a schedule; thirst is a poor indicator of hydration status) 	<ul style="list-style-type: none"> ✓ Good appetite <ul style="list-style-type: none"> • Continue supporting recognition of hunger/fullness/thirst for parents and children ✓ Eat several different fruits, vegetables, fish and meat <ul style="list-style-type: none"> • Parent label-reading education, comparison of products - fats, fibre, sodium, sugar • Parent education on processed foods, restaurant foods, fast-foods; benefits of fresh, home-cooked meals and ideas for making this easy for busy parents. • Parents can share recipes through a team website

	<ul style="list-style-type: none"> ✓ Consume at least 800 mg of calcium daily 	<ul style="list-style-type: none"> • Continue focusing on variety and introduction new foods • Try another game - show and tell - kids can bring their favourite fruit or vegetable or unique food (quinoa, barley, bison, jicama, etc. and tell teammates why they like it (may encourage other kids to try if their friends like it) ✓ familiar with importance of hydration <ul style="list-style-type: none"> • coach can remind kids that getting enough water can help them learn better, can help them do better, that your body needs water to do what it's supposed to do. • Develop a simple hydration tracking system for these athletes to ensure they are well hydrated before they train and during training ✓ energy level maintained throughout activity <ul style="list-style-type: none"> • ensure coach still allowing adequate, scheduled hydration & energizing snack breaks (as part of lesson plan) ✓ quick recovery from physical activity <ul style="list-style-type: none"> • parents: ready available snacks. • Educate parents about quick recovery meal solutions
<p>Fundamentals (2)</p> <p>F: 7-8 M: 8-9</p>	<ul style="list-style-type: none"> ✓ frequently exposed to a variety of different foods and tastes ✓ well balanced diet (high in nutrient-dense complex carbohydrates, moderate amounts of protein, sugar and sodium, low in fat and cholesterol; high in good fat/HDL) ✓ Hydration during and after activity (active kids should drink on a schedule; thirst is a poor indicator of hydration status) ✓ Require 800 mg Calcium daily 	<ul style="list-style-type: none"> ✓ Good appetite <ul style="list-style-type: none"> • Continue supporting recognition of hunger/fullness/thirst for parents and children ✓ Eat several different fruits, vegetables, fish and meat <ul style="list-style-type: none"> • Parent label-reading education, comparison of products - fats, fibre, sodium, sugar • Parent education on processed foods, restaurant foods, fast-foods; benefits of fresh, home-cooked meals and ideas for making this easy for busy parents. • Parents can share recipes through a team website • Continue focusing on variety and introduction new foods • Try another game - show and tell - kids can bring their favourite fruit or vegetable or unique food (quinoa, barley, bison, jicama, etc. and tell teammates why they like it (may encourage other kids to try if their friends like it) ✓ familiar with importance of hydration <ul style="list-style-type: none"> • coach can remind kids that getting enough water can help them learn better, can help them do better, that your body needs water to do what it's supposed to do. • Develop a simple hydration tracking system for these athletes to ensure they are well hydrated before they train and during training ✓ energy level maintained throughout activity

		<ul style="list-style-type: none"> • ensure coach still allowing adequate, scheduled hydration & energizing snack breaks (as part of lesson plan) <p>✓ quick recovery from physical activity</p> <ul style="list-style-type: none"> • parents: ready available snacks. • Educate parents about quick recovery meal solutions • Continue to educate parents about athletes' nutrition
<p>Learning to Train (1)</p> <p>F: 8-9 M: 9-10</p>	<ul style="list-style-type: none"> ✓ develop rehydration strategies ✓ develop basic pre race nutritional strategies ✓ optimal nutrition: quality food, varied menu ✓ increased intake of calcium and protein to support growth spurt; require 1300 mg Calcium daily 	<p>✓ Appropriate growth rate</p> <ul style="list-style-type: none"> • Potential use of growth curves to track weight and height changes (must consider accrued muscle and bone density changes) – often see increase mid-section circumference prior to vertical growth spurt <p>✓ Energy levels maintained throughout activity</p> <ul style="list-style-type: none"> • Introductory education directly to athletes on quality foods for performance • Education surrounding the use of sport bars and drinks <p>✓ Quick recovery from physical activity</p> <ul style="list-style-type: none"> • Ensuring availability of recovery snacks <p>✓ Increase practical nutrition knowledge</p> <ul style="list-style-type: none"> • Team planning of snacks/meals for training and competition, especially when travel to compete • Grocery store tours • Involvement in grocery shopping and appropriate selections when shopping • Possibly simple label-reading activities for kids • Emphasis on food variety; must respect individualistic preferences • Continue to educate parents about athletes' nutrition <p>✓ Body image</p> <ul style="list-style-type: none"> • Shift focus away from body fat/image and focus on intake to enhance performance, recovery, growth & health
<p>Learning to Train (2)</p> <p>F: 10-11 M: 11-12</p>	<ul style="list-style-type: none"> ✓ continuation of rehydration strategies ✓ develop basic pre and post race nutritional strategies ✓ optimal nutrition: quality food, varied menu ✓ increased intake of calcium and protein to support growth spurt; require 1300 mg calcium daily 	<p>✓ Appropriate growth rate</p> <ul style="list-style-type: none"> • Potential use of growth curves to track weight and height changes (must consider accrued muscle and bone density changes) – often see increase mid-section circumference prior to vertical growth spurt <p>✓ Energy levels maintained throughout activity</p> <ul style="list-style-type: none"> • Introductory education directly to athletes on quality foods for performance • Education surrounding the use of sport bars and drinks <p>✓ Quick recovery from physical activity</p> <ul style="list-style-type: none"> • Ensuring availability of recovery snacks <p>✓ Increase practical nutrition knowledge</p> <ul style="list-style-type: none"> • Team planning of snacks/meals for training and competition, especially when

		<ul style="list-style-type: none"> travel to compete • Education about healthy selection during travels • Grocery store tours • Involvement in grocery shopping and appropriate selections when shopping • Possibly simple label-reading activities for kids • Emphasis on food variety; must respect individualistic preferences ✓ Team meetings to discuss foods for competitions, especially when out of town and cooking meals together – great opportunity to learn about food preparation ✓ Focus on food variety but allow kids to think for themselves ✓ Continue to educate parents about athletes' nutrition
<p>Training to Train (1)</p> <p>F: 11-13 M: 12-14</p>	<p><u>Nutrition:</u></p> <ul style="list-style-type: none"> ✓ Start education about sport specific nutrition ✓ optimal nutrition: quality food, varied menu ✓ increased intake of calcium and proteins to support growth spurt; require 1300 mg calcium daily <p><u>Recovery:</u></p> <ul style="list-style-type: none"> ✓ Hydration during and after activity ✓ Sufficient rest (naps) and sleep is very important as growth accelerates and training volume increases at the same time <p><u>Health monitoring:</u></p> <ul style="list-style-type: none"> ✓ Monitor musculo-skeletal system during PHV ✓ Monitoring of hormonal parameters that can affect training efficiency ✓ Standardized functional movement screen (physio assessment) 	<ul style="list-style-type: none"> ✓ Bring in sports Dietitian at this stage for the athletes ✓ Consider educating parents separately from the athletes ✓ Good athletes eating habits (the basic principles) <ul style="list-style-type: none"> • Basic education around adequate nutrition in the event of unexpected circumstances that may affect the ability to consume meals (e.g. schedule changes at school (recess/breaks), increased homework/stress load, multi-sport athletes) • Basic education about food safety • Journaling recovery intake or start to create a food log book (pre + post activity intake - focus on timing) • Simple checklist for athletes for daily fluid intake ✓ Further education about body composition that is ideal for performance (e.g. more muscle does not ideally mean better performance) <ul style="list-style-type: none"> • Split males and females for education sessions to prevent mixed messages (different levels of growth spurt) • Listening to their body • Understanding growth and development such that weight gain does not simply mean gaining body fat ✓ Further education for coaches, athletes and parents <ul style="list-style-type: none"> • Recognize signs of disordered eating • Education about safe practices regarding supplementation • Parents/coaches educated about the Female Athlete Triad (amenorrhea, disordered eating and low bone density) • Dispel diet fads that arise (quick fix diets or diets seen in magazines) • Emotional and social aspects (friendships, relationships, disordered eating, social life, behavioural, hormonal changes) which may alter nutritional intake ✓ Energy level maintained throughout activity

		<ul style="list-style-type: none"> • Educating athletes to recognize signs and symptoms of over-training/poor nutrition • Educate about “healthy” fast food options as athletes more independent with food intake
<p>Training to Train (2)</p> <p>F: 14-15 M: 15-16</p>	<p><u>Nutrition:</u></p> <ul style="list-style-type: none"> ✓ adjust nutritional intake to increasing training load and requirements ✓ Continue education about sport specific nutrition ✓ Maintain good calcium AND iron intake; require 1300 mg calcium daily; females need 15 mg iron & males need 11 mg iron daily <p><u>Recovery:</u></p> <ul style="list-style-type: none"> ✓ systematic post intensity recovery strategies ✓ Sufficient rest (naps) and sleep is very important as growth accelerates and training volume increases at the same time <p><u>Health monitoring:</u></p> <ul style="list-style-type: none"> ✓ consistent recovery, medical and training monitoring ✓ monitor musculo-skeletal system during growth spurt and PHV ✓ Pay attention to, start monitor blood iron levels 1-2 x par year (blood sample); post season and early fall (post pubescent females need closer monitoring) ✓ Monitoring of hormonal parameters that can affect training efficiency 	<ul style="list-style-type: none"> ✓ Athletes AND parents educated about more advanced sport specific nutrition <ul style="list-style-type: none"> • Recognize signs of disordered eating • Education about safe practices regarding supplementation • Parents/coaches educated about the Female Athlete Triad (amenorrhea, disordered eating and low bone density) • Dispel diet fads that arise (quick fix diets or diets seen in magazines) • Emotional and social aspects (friendships, relationships, disordered eating, social life, behavioural, hormonal changes) which may alter nutritional intake • Educate parents and coaches (who are on the frontline) with screening tools for nutritional concerns in athletes • Advancement of education for athletes, parents and coaches on supplement use (pros and cons, and science behind them; who to go to (and who not to go to) for advice) ✓ Adequate energy level to achieve training load <ul style="list-style-type: none"> • Journaling intake and activity throughout day (with <u>times of day</u>) for assessment of pre- and post-exercise intake and recovery ✓ Adequate rate of recovery from training <ul style="list-style-type: none"> • encourage athletes to bring immediate recovery foods to training venue • team meeting to brainstorm quick recovery meals – especially if athletes preparing their own meals post-exercise ✓ Create simple checklist for athletes to ensure athletes are getting adequate fluid intake
<p>Learning to Compete (1)</p> <p>F: 15-17 M: 16-18</p>	<p><u>Nutrition:</u></p> <ul style="list-style-type: none"> ✓ adjust nutritional intake to increasing training load and requirements ✓ Pursue education about sport specific nutrition ✓ Maintain good calcium intake; require 1300 mg daily ✓ Females need 15 mg iron; males require 11 mg <p><u>Recovery:</u></p> <ul style="list-style-type: none"> ✓ systematic post intensity recovery strategies ✓ Sufficient rest (naps) and sleep is very important to 	<ul style="list-style-type: none"> ✓ Athletes AND parents educated about more advanced sport specific nutrition <ul style="list-style-type: none"> • Introduction to education of race-day timing of nutrition; ideas for snacking on race-day, in a hotel, etc. • Education about adaptations of nutrition to various environments (e.g. summer heat/humidity, altitude training, etc.) • Introduction of nutrition tips for travelling - what to bring, managing jetlag, restaurant foods, etc. • Activity-bring in actual restaurant menus and have athletes choose healthy choices from these menus • For females - education on negative effects from restrictive eating and body

	<p>ensure proper recovery from increased training load and biological growth requirements during this stage</p> <p>Health monitoring:</p> <ul style="list-style-type: none"> ✓ consistent recovery, medical and training monitoring ✓ monitor musculo-skeletal system during growth spurt and PHV ✓ monitor blood iron levels 1-2 x per year (blood sample) post season and early fall (post pubescent females need closer monitoring) 	<p>image</p> <ul style="list-style-type: none"> • Ability to seek out/recognize sources of evidenced-based information • Education on doping control and potentially hidden sources of banned stimulants • Educate about off-season weight management (losing body fat in a healthy way; gaining muscle) • Grocery store tours; team meals & menu planning <ul style="list-style-type: none"> ✓ Appropriate growth rate; discuss with females nutrition that can be related to amenorrhea (missing consecutive menstrual cycles) ✓ Adequate energy level to achieve training load <ul style="list-style-type: none"> • Appropriate approaches to carbohydrate loading • Focus on quality food selection 90% of the time with 10% “extras” ✓ Adequate rate of recovery from training ✓ Familiar with pre and post intensity recovery strategies (including nutritional) ✓ Individual counselling with Sports Dietitian for individualized strategies <ul style="list-style-type: none"> • Check for calcium rich foods (for bone density) • Iron-rich foods; iron absorption • Adequate eating patterns • Pre- and post-training/competition timing of loading and recovery
<p>Learning to Compete (2)</p> <p>F: 17-19 M: 18-20</p>	<p>Nutrition:</p> <ul style="list-style-type: none"> ✓ adjust nutritional intake to increasing training load and requirements ✓ Pursue education about sport specific nutrition ✓ Maintain good calcium intake; up to 19 years require 1300 mg calcium, 19 years and older require 1000 mg calcium ✓ Females require 18 mg iron; males require 8 mg <p>Recovery:</p> <ul style="list-style-type: none"> ✓ systematic post intensity recovery strategies ✓ Sufficient rest (naps) and sleep is very important to ensure proper recovery from increased training load and biological growth requirements during this stage <p>Health monitoring:</p> <ul style="list-style-type: none"> ✓ consistent recovery, medical and training monitoring ✓ monitor musculo-skeletal system during growth spurt and PHV 	<ul style="list-style-type: none"> ✓ Athletes AND parents educated about more advanced sport specific nutrition <ul style="list-style-type: none"> • Introduction to education of race-day timing of nutrition; ideas for snacking on race-day, in a hotel, etc. • Education about adaptations of nutrition to various environments (e.g. summer heat/humidity, altitude training, etc.) • Introduction of nutrition tips for travelling - what to bring, managing jetlag, restaurant foods, etc. • Activity-bring in actual restaurant menus and have athletes choose healthy choices from these menus • For females - education on negative effects from restrictive eating and body image • Ability to seek out/recognize sources of evidenced-based information • Education on doping control and potentially hidden sources of banned stimulants • Educate about off-season weight management (losing body fat in a healthy way; gaining muscle) • Grocery store tours; team meals & menu planning • Have athletes complete computerized dietary analysis from Canadian software such as: www.Eatracker.ca; meet as a team or individually to understand their

	<ul style="list-style-type: none"> ✓ monitor blood iron levels 1-2 x per year (blood sample)post season and early fall (post pubescent females need closer monitoring) ✓ 	<ul style="list-style-type: none"> diet analysis <ul style="list-style-type: none"> • Individual nutrition consultations are helpful for this age group ✓ Appropriate growth rate ✓ Adequate energy level to achieve training load <ul style="list-style-type: none"> • describe nutrition for endurance when training sessions exceed 90 minutes • critique different sports drinks, gels and bars as suitable options for sustaining endurance; have athletes bring in samples to understand label reading ✓ Adequate rate of recovery from training ✓ Restaurant/Fast Food meals: from on-line information calculate % carbs, protein, fat, plus determine mg of sodium ✓ Familiar with pre and post intensity recovery strategies (including nutritional) <ul style="list-style-type: none"> • Precise calculations of recovery food and fluid intake relative to individual needs
<p>Training to Compete</p> <p>F: 19-23 M: 20-23</p>	<p><u>Nutrition:</u></p> <ul style="list-style-type: none"> ✓ adjust nutritional intake to increasing training load and requirements ✓ adapted sport and recovery drink recipes/mixes for type of effort ✓ optimize glycogen (carbs) intake for long distance events ✓ focus on iron rich foods since Females require 18 mg and Males require 8 mg daily <p><u>Recovery:</u></p> <ul style="list-style-type: none"> ✓ Stay updated about HP nutritional and recovery strategies ✓ optimize use of paramedical support <p><u>Health monitoring:</u></p> <ul style="list-style-type: none"> ✓ consistent recovery, medical and training monitoring ✓ monitor blood iron and other hematological parameters 4-6 x per year (e.g. Vitamin B12, omega 3, ferritin, Vitamin D) ✓ maintain awareness of iron-deficiency symptoms 	<ul style="list-style-type: none"> ✓ Adequate energy level to achieve training load ✓ Adequate rate of recovery from training ✓ Decreasing need to adapt training and racing load due to illness ✓ Consistent and adequate level of blood iron and other hematological parameter ✓ Timing of race-day nutrition/supplementation regime leading up to competition day, as well as recovery (under the guidance of Sports RD) ✓ Independent living skills – cooking skills, grocery store tours, etc. ✓ Training specificity (periodization) which is matched with the appropriate nutritional regime (involvement of sports RD) ✓ Regular individual monitoring of food and fluid intake; educate athletes how to individually assess their nutrition ✓ Discuss effective sport supplementation ✓ Assess hydration by having athletes check weight pre- and post-training; aim to drink 500 ml for every 0.5 kg lost + add 250-500 ml extra fluids to account for urinary losses
<p>Training to Win</p> <p>F-M: 23+</p>	<p><u>Nutrition:</u></p> <ul style="list-style-type: none"> ✓ adjust nutritional intake to increasing training load and requirements ✓ adapted sport and recovery drink recipes/mixes for 	<ul style="list-style-type: none"> ✓ Adequate energy level to achieve training load ✓ Adequate rate of recovery from training ✓ Consistent and adequate level of blood iron and other haematological parameters

	<p>type of effort</p> <ul style="list-style-type: none"> ✓ optimize glycogen (carbs) intake for long distance events ✓ Females require 18 mg and Males 8 mg of iron daily <p><u>Recovery:</u></p> <ul style="list-style-type: none"> ✓ Stay updated about HP nutritional and recovery strategies ✓ optimize use of paramedical support <p><u>Health monitoring:</u></p> <ul style="list-style-type: none"> ✓ consistent recovery, medical and training monitoring ✓ monitor blood iron and other hematological parameters 4-6 x per year (e.g. Vitamin B12, omega 3, ferritin, Vitamin D) ✓ maintain awareness of iron deficiency symptoms 	<ul style="list-style-type: none"> ✓ Individualized nutrition consultations to address training, recovery, competition intake ✓ Team sharing of recipes, especially when cooking for self during training camps & out of town competitions ✓ Develop Nutrition Tips to be presentd to the athletes via team website ✓ Sustained intensity levels in long distance races; nutrition for endurance training and racing; education about use of sports drinks, bars & gels ✓ Training specificity (periodization) which is matched with the appropriate nutritional regime (involvement of sports Dietitian to help with supplementation/nutrition programming relative to the Team's YTP) ✓ Athletes complete daily monitoring of nutrition (foods, fluids, timing, energy levels) for personal accountability ✓ Continue timing of race-day nutrition/recovery with guidance from Sports Dietitian ✓ Monitoring and education by multidisciplinary sports health professionals – Integrated Sports Teams (IST) ✓ Individualized prescription for supplementation ✓ Assess hydration by having athletes check weight pre- and post-training; aim to drink 500 ml for every 0.5 kg lost + add 250-500 ml extra fluids to account for urinary losses
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