

The background features abstract, flowing geometric shapes in two shades of blue (a darker navy blue and a lighter sky blue) against a white background. The shapes create a sense of movement and depth, with some areas appearing to overlap or curve around each other.

MODULE 02

Healthy Eating

MODULE 02 Healthy Eating

This module is comprised of the following sections:

- SECTION 1:** Key Messages
 - SECTION 2:** Discussing Healthy Eating with Children and Youth
 - SECTION 3:** Addressing Challenges to Healthy Eating
 - SECTION 4:** Medications and their Effects on Nutrition
 - SECTION 5:** Resources and Handouts
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Good nutrition is important for growth and development. Research demonstrates the importance of nutrition in learning, activity, sleep, mood and energy level. Ensuring children develop a healthy relationship with food can lead to long term healthy lifestyles and weights. For children with mental health challenges, it is very important to create a healthy relationship with food to decrease the stress and anxiety that food issues often produce.

Many children and youth with mental health concerns are at heightened nutrition risk.¹ For example, alternative nutrition therapies, such as gluten free diets or vitamin supplementation, can put children at risk for nutrient deficiencies or excesses. Also, certain medications can cause significant weight gain or loss. Helping children attain optimal nutritional status can improve both their physical and mental health, and their overall well being.

It can be difficult for families to know where to go for appropriate nutrition advice. The media are consumers' leading source of nutrition information and often provide misleading or incorrect information.² Research has shown that parents often look to their health care practitioners for nutrition advice³, showing a need for primary health care professionals to enquire and feel comfortable providing nutrition recommendations to families. This module will provide you with helpful information to offer nutrition advice to children and youth with mental health challenges, and their families.

Key Messages



Skipping breakfast causes metabolism to slow down, often resulting in weight gain

Here are some key messages to keep in mind when discussing healthy eating with children, youth and their families:

1. FAMILIES THAT EAT TOGETHER, EAT BETTER

Eating meals together as a family has been shown to benefit dietary intake and psychosocial health, as well as reduce disordered eating behaviours, substance use, and depression.^{4,5,6}

2. ARE YOU A SUMO WRESTLER? IF NOT, EAT BREAKFAST

Sumo wrestlers only eat 2 meals a day. They will skip breakfast to slow down their metabolism and gain weight.^{7,8} There are many benefits of breakfast for everyone, especially children and adolescents, including:

- Decreased incidence of obesity, lower BMI, and lower waist circumference⁹
- Increased cognitive function (memory, test grades & school attendance)¹⁰
- Higher intake of many nutrients including vitamins A, E, C, B6, B12, folate, iron, calcium, phosphorus, magnesium, potassium and dietary fibre⁹

A *Great Breakfast Ideas* handout can be found at the back of this module.

3. DIETING DOESN'T WORK - MAKE SMALL, ACHIEVABLE CHANGES

A significant number of adolescents and children are engaging in dieting behaviour, and many of these children are within a healthy weight range.^{11,12} A study tracking preadolescents and adolescents and their dieting behaviour showed adolescents that engaged in dieting behaviour gained more weight than non-dieters.¹³ Dieting has also been shown to increase the likelihood of developing an eating disorder.¹⁴

4. DRINK WATER, MILK, AND ONLY A SMALL AMOUNT OF 100% FRUIT JUICE AND STAY AWAY FROM SUGAR-SWEETENED BEVERAGES

Sugar-sweetened beverages contribute to obesity¹⁵ and the development of metabolic syndrome and type 2 diabetes.¹⁶ 100% fruit juice is not considered a sugar-sweetened beverage, but has been associated with increased energy intake and weight status in some studies, but not others.¹⁷ However, milk consumption (plain or flavoured) is not associated with weight gain over non-milk drinkers.



**TIPS FROM FAMILIES:**

“Always have healthy snacks readily available—try having vegetables and fruit pre-cut and ready in the fridge”

The Guide to Healthy Living for Families, developed by The F.O.R.C.E. Society for Kids' Mental Health

5. DIVISION OF RESPONSIBILITY: SHOULD DESSERT BE WITHHELD UNTIL A CHILD EATS THEIR VEGETABLES?

Parents who try to control children's intake by making them finish their plate, or restricting palatable foods (e.g. cookies) unless they finish their vegetables are teaching children to ignore their internal cues for hunger and fullness. Children know how much they need to eat.¹⁸

- Parents are responsible for what, when and where; children are responsible for how much and whether
- Parents' Feeding Jobs:
 - Choose and prepare the food
 - Provide regular meals and snacks
 - Make eating times pleasant
 - Show children what they have to learn about food and mealtime behaviour
 - Not let children graze for food or beverages between meal and snack times
 - Let children grow up to get bodies that are right for them
- Fundamental to parents' jobs is trusting children to decide how much and whether to eat. If parents do their jobs with feeding, children will do their jobs with eating:
 - Children will eat
 - They will eat the amount they need
 - They will learn to eat the food their parents eat
 - They will grow predictably
 - They will learn to behave well at the table

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Note: Some children do not respond to hunger and fullness cues (for example, those on specific medications or those who have chronically ignored these cues). For these children, more parameters may need to be in place regarding quantity of food, timing, etc. Individual nutrition counselling by a dietitian may be required.

**6. TREAT WITH LOVE, NOT SWEETS**

When children do something well and are rewarded with food, or hurt themselves and get a cookie to make them feel better, they associate these occurrences with food, and this association can continue with them through life. So later, when they are sad or anxious or even happy, they'll want to eat.¹⁹ Try to encourage parents to find other ways to reward their children. A link to a handout with ideas can be found in the resource section at the back of this module (look under 'National Heart Foundation of Australia').

Discussing Healthy Eating with Children and Youth

Nutrition problems are pervasive in our society and as such are common in children and youth with mental health challenges. Parents often look to their health care practitioners for advice.³ It's important to assess whether nutritional concerns are actually present, and to determine whether the family is ready or has space in their lives to deal with these concerns now. Some families may be overburdened with so many issues that they do not have the capacity to address the concerns that you feel are important. See Module 1 (Getting Started) to determine what stage of change the family is at, and take this into consideration when delivering basic nutrition information. Also, if the problems are beyond your scope of knowledge or cannot be adequately addressed in the time available, find dietetic resources in your community. Many hospitals have general outpatient nutrition counselling that is free when referred by a physician. There are also many private dietitians across the province (see the resource section at the back of this module for a link to a list of dietitians, under 'Dietitians of Canada').

Assessing Nutrition Problems in Children/Youth

BMI Calculation

Body Mass Index (BMI) =
 $\text{weight (kg)} \div \text{height (m)}^2$

For health professionals, doing a brief nutrition assessment can be hard when time is limited. If a brief nutrition assessment is done, assess for major nutrient deficiencies or excesses, or major disruptions in the child or youth's eating such as skipping breakfast. Different ways to assess nutrition are described below.

GROWTH CHARTS

General health care practitioners play an important role in well visits. At these visits it's important to check a patient's weight and height, calculate BMI, and track these on growth charts (see the link to WHO growth charts in the resource section, under 'Dietitians of Canada'). It is also important to monitor that children and youth do not cross percentiles rapidly, especially in the area of mental health where medications can cause weight loss or rapid weight gain. Their BMI growth curve would indicate whether this is important to address.

TAKING A NUTRITION HISTORY

A quick 24-hour diet history (asking the child and/or their parent to recall what they ate for the entire previous day) can be taken and compared to *Canada's Food Guide* to assess for major nutrient or vitamin/mineral deficiencies.



Incorporate one or two nutrition history questions at each visit

SAMPLE NUTRITION HISTORY QUESTIONS



For example, in a diet history you may notice little or no milk, yogurt or cheese consumption and can counsel on the lack of calcium and vitamin D in the diet. (*Canada's Food Guide* is provided as a handout at the back of this module, and a link can be found in the resource section).

Alternatively, taking a nutrition history can be incorporated quickly by asking a series of pointed questions. A list of useful questions can be seen below. Given that there often is not enough time to ask all questions, ask and address one or two questions at each visit.

1. How many days a week do you eat breakfast?
2. Do you eat whole grain products or high fibre grains?
(*Serving:* 1 slice 100% whole grain bread; ½ cup [125 mL] brown rice; 1 cup [250 mL] whole grain cereal; ½ whole grain bagel; ½ cup [125 mL] whole wheat pasta; ½ cup [125 mL] baked or boiled potatoes or yams)
3. How many servings of fruit do you eat a day?
(*Serving:* ½ cup [125 mL] fruit or 1 medium fruit)
4. How many servings of vegetables do you eat a day?
(*Serving:* ½ cup [125 mL] vegetables or 1 cup [250 mL] leafy raw vegetables)
5. How many servings of milk or milk alternatives do you eat in a day?
(*Serving:* 1 cup [250 mL] milk or fortified soy milk; ¾ cup [175 g] yogurt; 1 ½ ounces [50 g] cheese)
6. How many cups of sugar sweetened beverages like soda (not diet soda), juice, lemonade, ice tea, energy drinks or sport drinks (e.g. Gatorade) do you drink in a day?
7. How many times a week do you eat out in a sit down or fast food restaurant, or cafeteria?
8. Do you stop eating when you are full?
9. Do you eat slowly?

Suggestions for Discussing Healthy Eating with Children and Youth



Ask the child/youth what *they think* they should work on. Then create a SMART goal with them

Talking about what a person eats can be a very sensitive topic. It can often be embarrassing for a child, youth or parent to divulge the extent of their diet. Try to reserve judgment and express gratitude if people are open and honest about their diets. Also keep in mind that beliefs and attitudes about nutrition and a healthy body size can vary across cultures. Be sensitive to people's cultural beliefs.

To ensure follow-through with dietary advice, children, youth and/or their families must 'buy in' to what you are recommending. If you feel that a child or youth has a diet that is low in calcium, try to explain the potential consequences of the deficiency and ask if altering these consequences is important to the child or youth. If this isn't a priority, the chances of a change occurring are small. Also, broad statements regarding a change in diet are often not helpful, such as "ensure you eat 5-10 servings of fruits and vegetables a day." This doesn't explain 'why' and can be difficult to achieve as it may be too far off from where the child or youth is starting from (e.g. 1 serving fruit/day and no vegetables).

After conducting a brief nutrition history, you can ask the child/youth or their family what they think they should work on. They may realize the child/youth doesn't eat enough fruit, or drinks too many sugar-sweetened beverages. You can then create a small, achievable goal (SMART goal) with the child or youth (see the *Pinwheel Goal Setting Tool* in Module 1). For example, if a young person normally drinks 3 sugar-sweetened beverages per day, and he/she is willing to work on decreasing this amount, an achievable goal for this youth may be decreasing to 1 or 2 sugar sweetened beverages a day. Stick to one or two small goals like this to ensure they are achievable, and you will help the child/youth and their family get on their way to making permanent healthy lifestyle changes.

Addressing Challenges to Healthy Eating

There are many factors that can impact nutritional health. Most people have great intentions to follow healthy diets, but many things can come in the way. Families of children and youth with mental health concerns can be impacted by reduced income due to a parent not being able to work, children with picky eating, children with sensory issues, medications that impact nutrition, etc.

Common Challenges to Healthy Eating

The following chart lists common challenges that families encounter and tips on how to discuss overcoming these challenges. Additional tips suggested by families in B.C. who have children with mental health challenges can also be found in the *Guide to Healthy Living for Families*, available from: keltymentalhealth.ca/toolkits

SHOPPING AND MEAL PLANNING

Challenge

Tips on how to discuss challenges

Grocery shopping



- Don't go to the grocery store hungry; you'll be less likely to make impulse buys
- Plan your meals for the week and make a grocery list; this will help to ensure you buy only what you need
- Encourage families to take a grocery store tour; two BC supermarkets (Save-On-Foods and Choices) provide tours (Choices is free)
- A meal planning handout, as well as links to websites with tips for healthy meal planning, can be found in the 'Resources and Handouts' section of this module

Lack of time




- Cooking healthy meals doesn't have to take much time if you've planned ahead and done your grocery shopping (see above). Use frozen veggies, grill a frozen veggie burger, dress a bun, add a glass of milk and canned peaches for dessert
- Great meal ideas can be found here: www.dietitians.ca/Your-Health/Plan-Shop-Cook/Cook-Healthy.aspx


Family meals

- Encourage families to find a few nights a week, at a minimum, to sit down and eat together. See Section 1 for reasons why this is beneficial
- For the nights when dinner is late in the evening, make sure children and youth have healthy snacks (see the *Great Snacks* handout at the back of this module) to bring with them to their activities
- Alternatively, families can have a light dinner in the late afternoon (e.g. 4 pm) and a heavier snack in the evening. Sometimes all it takes is a readjustment of the meaning "family dinner"

SHOPPING AND MEAL PLANNING (continued)

| Challenge | Tips on how to discuss challenges |
|----------------------------|--|
| Family meals (continued) | <ul style="list-style-type: none"> Many communities have community kitchens that can help families learn how to cook meals, do meal planning, etc. A database of community kitchens in BC can be found here: www.communitykitchens.ca/main/?CSBDatabase See Ellyn Satter's website for <i>Mastering Family Meals</i>: www.ellynsatter.com/mastering-family-meals-step-by-step-i-72.html |
| Eating out |  <ul style="list-style-type: none"> Occasionally eating out (e.g. one time per week) is normal and healthy. If you eat out occasionally, enjoy the experience If you are frequently eating out, it is advised to try to cut back Families can also try to choose healthier items when they are eating out. Most fast food restaurants allow substitutes such as milk for a drink, and a baked potato or salad for fries. Try to encourage families to make changes if eating out is regular See more tips on dietitians.ca: <i>Having a Healthy Meal When Eating Out</i> www.dietitians.ca/Nutrition-Resources-A-Z/Fact-Sheet-Pages(HTML)/Lunches/Healthy-Meal-when-Eating-Out.aspx |
| Skipping meals (teenagers) | <ul style="list-style-type: none"> New studies show that teenagers who snack more throughout the day actually achieve a healthier body weight. This is likely due to their bodies getting regular nutrition throughout the day, so they aren't overly hungry at mealtimes. People who sit down for a meal when they are 'starving' tend to over eat It's best to recommend three meals and 1-3 snacks per day to promote a healthy metabolism and to prevent over-hunger, which can lead to over-eating |


PICKY EATING AND SENSORY ISSUES

| Challenge | Tips on how to discuss challenges |
|--------------|---|
| Picky eating |  <ul style="list-style-type: none"> Encourage parents to follow the Division of Responsibility (see Section 1); power struggles with food lead to no one being the winner Get children and youth involved in the cooking process; they are more likely to eat something they've made (an activity for making a recipe together can be found in the <i>Guide to Healthy Living for Families</i>, available from keltymentalhealth.ca/toolkits) Avoid grazing all day; a child won't eat at meal times if they aren't hungry Drinking juice throughout the day may fill a child up so they won't be hungry for meals See hints from Ellyn Satter: www.ellynsatter.com/the-picky-eater-i-43.html |

PICKY EATING AND SENSORY ISSUES (continued)

| Challenge | Tips on how to discuss challenges |
|----------------|--|
| Sensory issues | <ul style="list-style-type: none"> Some children with mental health concerns can have a difficult time with the texture or consistency of foods. Children with concerns like these should be referred to occupational therapy or speech language pathology if it's impacting their ability to follow a healthy diet <p><i>NOTE: There is a big difference between a child or youth being a picky eater, and a child or youth with severe food aversions. There are many children with sensory-based eating challenges and/or Autism Spectrum Disorder who have very severe food limitations. These children require referrals to appropriate help such as occupational therapy, speech language pathology, or behavioural therapy that specialize in addressing sensory-based eating challenges</i></p> |

SOCIAL FACTORS

| Challenge | Tips on how to discuss challenges |
|---------------|--|
| Low income | <ul style="list-style-type: none"> It is very important to be empathetic to families with low socioeconomic status, as they may be unable to meet the nutritional recommendations you make Recommendations can include trying to make homemade meals more often instead of buying pre-prepared meals, pre-grated cheese, etc. Also, having vegetarian menus made with lentils or tofu, for example, is much cheaper than using meat. Many families may need to use food banks. To help a family find a food bank, see: www.foodbanksbc.ca Handouts: <i>Eating Well on a Limited Income</i> (www.healthlinkbc.ca/healthyeating/limited-income.html) and <i>Healthy Eating Cheap and Easy</i> (www.health.gov.bc.ca/library/publications/year/2002/HealthyEatingdoc.pdf) |
| Role modeling | <ul style="list-style-type: none"> Children are looking to their parents for good information on healthy eating. It is essential that information provided to a child regarding their diet applies to everyone in the family. For example, when a child has to stop drinking pop because of insulin resistance, this should be a positive and healthy experience for the whole family |
| Peer pressure | <ul style="list-style-type: none"> Arm children and youth with information about healthy eating, such as why eating lunch is healthy. Teenage girls will often stop eating some meals in an attempt to lose weight. They may not know that missing meals will slow down their metabolism and increase the chances of overeating later in the day, causing inadvertent weight gain |
| Fad diets |  <ul style="list-style-type: none"> Fad Diets don't work (see Section 1) There is convincing research showing that when a person drops weight quickly, he or she will have a rapid drop in metabolism that does not return to its original level. This makes it harder each successive time a person tries to lose weight. Slow, sustainable weight loss is key to ensuring this drop in metabolism doesn't happen A handout on fad dieting is available from: http://vch.eduhealth.ca/PDFs/BB/BB.200.W54.pdf |

GENERAL NUTRITION

| Challenge | Tips on how to discuss challenges |
|-------------------------|--|
| Nutrition label reading | <ul style="list-style-type: none"> Encourage families to spend time reading labels. It can be helpful in guiding them to make healthier food choices For handouts and more information on label reading: http://www.dietitians.ca/Your-Health/Nutrition-A-Z/Food-Labels |
| Energy drinks | <ul style="list-style-type: none"> Energy drinks are not for children and this is specified on energy drink labels. The amount of caffeine in energy drinks is too high for children under 12 years of age Too much caffeine can cause irritability, nervousness and sleeping problems. It is not recommended that children and young teenagers use energy drinks. See the link under 'Dietitian Services at HealthLinkBC' in the resource section for more information on energy drinks |

MEDICATION

| Challenge | Tips on how to discuss challenges |
|-------------------------------|---|
| Medications increasing hunger | <ul style="list-style-type: none"> Some medications, like second generation antipsychotics, can dramatically increase hunger in children and youth. See the medication section for more information and tips |
| Medications decreasing hunger | <ul style="list-style-type: none"> Some medications, like stimulants, act like appetite suppressants. See the medication section for more information and tips |

Mental Health Challenges and Healthy Eating

When there are mental health concerns, there are a number of factors that can impact the nutritional status of the child or youth. See below a table that outlines common nutrition findings in children and youth with their specific mental health concern.

| AUTISM SPECTRUM DISORDERS (ASD) | |
|--|---|
| Common Findings | Summary of evidence and recommendations |
| Sometimes on gluten-free/casein free diets ²⁰ | <ul style="list-style-type: none"> Current evidence for the efficacy of this diet is poor²¹ Assess for major food deficiencies (commonly Ca/Vit D) (see the resource section for a link to an online calcium calculator) A recent double-blind, placebo controlled trial showed no positive results of the diet²² A randomized, single-blind study showed potentially positive results.²³ However, without a placebo, these results are questionable A clinical study is underway to assess the role of a GFCF diet to manage autism-associated gastrointestinal disorders (see increased GI problems below)²⁴ |
| Potential increased gastrointestinal (GI) problems ^{25,26} | <ul style="list-style-type: none"> If impairing intake, refer to RD for specific diet assessment and recommendations There is also a question of whether there are actually increased GI problems compared to children without ASD²⁷ |
| Poor food selectivity, dysfunctional feeding behaviour ²⁸ and sensory sensitivity affecting food intake ²⁹ | <ul style="list-style-type: none"> Division of responsibility (see Section 1: Key Messages) may help in less severe cases Refer to a feeding expert: Occupational Therapist (OT) or Speech Language Pathologist (SLP) for swallowing issues, oral motor development and desensitization; Psychologist or Behavioural Consultant for phobias or entrenched behaviours (see the resource section for a link to OT/SLP services) |
| 30-50% of children with ASD receive some form of dietary or dietary supplement therapy | <ul style="list-style-type: none"> Check supplements and potential interactions with medications Check for major dietary deficiencies. In general, children with ASD have significantly lower dairy consumption, and often do not meet recommendations for daily intake of fibre, calcium, iron, vitamin D and vitamin E³⁰ |
| Iron deficiency with low serum ferritin related to restricted food intake ^{31,32,33} | <ul style="list-style-type: none"> Monitor iron status. Supplement when low serum ferritin |
| Omega-3 supplementation* | <ul style="list-style-type: none"> Currently insufficient evidence to recommend supplementation³⁴ |

ATTENTION DEFICIT HYPERACTIVITY DISORDERS (ADHD)

| Common Findings | Summary of evidence and recommendations |
|---|--|
| Impaired growth related to medication | <ul style="list-style-type: none"> Monitor weight and height regularly (biannually) Adjust timing, dose or formulation of medication to allow for hunger at more meals (e.g. give medication after breakfast, use lowest effective dose, evaluate impact of long-acting medication formulations on appetite). Refer to dietitian for high energy food recommendations Impaired growth appears to be dose-dependent^{35,36} Children who take medication intermittently do not show the same growth loss; a summer drug holiday may be helpful^{35,37} |
| Changes in appetite due to medication | <ul style="list-style-type: none"> Children with ADHD who are treated with stimulant medication will tend to eat most late at night when medication has worn off. They should be encouraged to either eat something or have a meal replacement such as Boost or Ensure at breakfast or lunch to minimize side effects later caused by hunger (see Section 4 – ‘Stimulants’ for age and weight ranges for meal replacements) |
| Omega-3/Omega-6 supplementation* | <ul style="list-style-type: none"> Trials of omega-3 supplements on ADHD have often shown no effect possibly because of small participant numbers. However, a meta-analysis including some of these studies found a very small positive effect of omega-3 supplementation in comparison to that of psychostimulants.⁷¹ This was likely due to great statistical power in this large pooled sample. Omega-6 does not appear to show effects on ADHD symptoms in comparison to placebo.³⁸ |
| Iron deficiency and low serum ferritin ⁴⁰ Serum ferritin levels were inversely correlated with severity of ADHD ⁴⁰ | <ul style="list-style-type: none"> Check serum ferritin Supplementation with iron may improve ADHD symptoms when serum ferritin is low³⁹ |
| Serum zinc levels lower in children with ADHD ^{41,42} Lower serum zinc levels correlated to inattention ⁴³ | <ul style="list-style-type: none"> There is no conclusive evidence as yet of the benefit of zinc supplementation. Two studies done to date have been in middle-eastern countries with suspected endemic zinc deficiency⁴³ Check serum Zn levels. It is unclear if zinc supplementation is helpful |
| Additive-free (food colours and/or preservatives) diet may improve ADHD symptoms ^{44,45,46} | <ul style="list-style-type: none"> An additive-free diet may be beneficial in children with a history of food sensitivity but only under the supervision of the primary healthcare provider or dietitian to ensure nutritional balance⁴⁴ |

ATTENTION DEFICIT HYPERACTIVITY DISORDERS (ADHD) (continued)

| Common Findings | Summary of evidence and recommendations |
|---|--|
| There is no link between sugar and hyperactivity ^{47,48} | <ul style="list-style-type: none"> Removal of sugar from the diet is not recommended and will not benefit ADHD symptoms |
| Celiac disease has ADHD-like symptomatology ⁴⁹ | <ul style="list-style-type: none"> Check for celiac disease. Behaviour may improve on a gluten-free diet if a diagnosis of celiac disease is made |

MOOD DISORDERS

| Common Findings | Summary of evidence and recommendations |
|--|--|
| Omega-3 supplementation* | <ul style="list-style-type: none"> Evidence does not yet support the use of omega-3 supplementation for anxiety disorders³⁸ Supplementation with eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) may benefit patients with depression^{38,50,51} and help patients with the depressive episodes but not manic episodes of bipolar disorder^{38,52} |
| Folate supplementation may help in depression (based on adult studies) ^{53,54} | <ul style="list-style-type: none"> Folate may have a potential role as a supplement to other treatments for depression^{53,54} If folate supplementation is warranted, it may mask a deficiency of vitamin B12. Therefore, evaluation of vitamin B12 levels and possible supplementation should occur |
| Celiac disease is associated with an increased prevalence of depressive and disruptive behaviour disorders ⁵⁵ | <ul style="list-style-type: none"> Test for celiac disease. A gluten-free diet can improve symptoms if a diagnosis of celiac disease is made⁵⁵ |

SCHIZOPHRENIA SPECTRUM DISORDERS

| Common Findings | Summary of evidence and recommendations |
|---|---|
| Omega-3 supplementation* | <ul style="list-style-type: none"> Supplementation with omega-3 in treatment for schizophrenia (either EPA or DHA) is unconvincing to date^{38,56} Supplementation has been shown to cause a significant increase in BMI and bleeding time compared to placebo in adults with schizophrenia taking first-generation antipsychotics⁵⁷ |
| ~2% of patients with schizophrenia have celiac disease which is as much as double the general population ^{58,59} | <ul style="list-style-type: none"> Test for celiac disease. Recommend a gluten-free diet if diagnosed with celiac disease There is extremely limited data on gluten-free diets and schizophrenia for patients without celiac disease |

SCHIZOPHRENIA SPECTRUM DISORDERS (continued)

| Common Findings | Summary of evidence and recommendations |
|--|--|
| Significantly higher rates of impaired fasting glucose in drug naïve patients and their first-degree relatives in adult studies ^{60,61,62} as well as significantly higher rates of insulin resistance ^{60,63} | <ul style="list-style-type: none"> Screening tests for Impaired Glucose Tolerance (IGT) and Type 2 Diabetes could be beneficial for both patients and their first-degree relatives for early detection and intervention |

EATING DISORDERS**General Recommendations**

- Early diagnosis and intervention lead to better prognosis⁶⁴
- It is recommended that ALL eating disorder patients be assessed and treated by a multidisciplinary team⁶⁵, or that treatment is in conjunction with a *minimum* of a physician/paediatrician, dietitian and therapist
- In general, family involvement in treatment is highly recommended
- Eating disorders include: Anorexia Nervosa (AN), Bulimia Nervosa (BN), Eating Disorder Not Otherwise Specified (EDNOS), and Binge Eating Disorder (BED)

| Common Findings | Summary of evidence and recommendations |
|------------------------------------|--|
| Vegetarianism and eating disorders | <ul style="list-style-type: none"> Adolescents who adopt a vegetarian diet may do so because it is a socially acceptable way to avoid eating certain food groups and may be at risk for disordered eating behaviours⁶⁶ |
| Decreased bone density | <ul style="list-style-type: none"> Attaining a body weight which normalizes gonadal steroid levels is critical for normal bone accrual to optimize peak bone mass.⁷² As with all children and youth, recommended intakes for calcium (1300mg/day) and vitamin D (600 international units/day) should be strived for. An eating disorders treatment team can screen for vitamin D insufficiency and recommend a therapeutic vitamin D intake if indicated. |
| Refeeding syndrome in AN | <ul style="list-style-type: none"> Refeeding of a patient with AN should be undertaken with an eating disorder treatment team. Refeeding requires gradual advancement of nutrient intake and close monitoring to prevent problems such as: hypophosphatemia, edema, cardiac failure, seizures and death⁶⁴ Monitor electrolytes, phosphorus, and magnesium regularly (daily for the first 1-2 weeks during early refeeding and supplement with phosphate as required)⁶⁸ |

| EATING DISORDERS (<i>continued</i>) | |
|--|---|
| Common Findings | Summary of evidence and recommendations |
| Omega-3 supplementation* | <ul style="list-style-type: none"> No research specifically on omega-3 and eating disorders, however, they may be useful in treating some symptoms (e.g. elevated serum triglyceride levels, insulin sensitivity, mood disorders)⁶⁷ |
| Limited intake in AN leading to micronutrient deficiency | <ul style="list-style-type: none"> Evaluation of folic acid, thiamine, vitamin B12, zinc, vitamin D (see above) and calcium may be warranted⁶⁷ |
| Iron-deficiency Anemia | <ul style="list-style-type: none"> Check plasma ferritin. Supplement as needed⁶⁸ |
| Electrolyte disturbances and purging (e.g. forced vomiting and abuse of laxatives) | <ul style="list-style-type: none"> Electrolyte disturbances should be monitored carefully by a physician in the treatment team as there are increased risks for cardiac arrhythmias Monitor for hypokalemia and/or hypochloremic alkalosis with vomiting⁶⁸ Monitor for hyponatremia, hypomagnesemia and hypophosphatemia with chronic laxative use⁶⁸ Hyponatremia may also be present. Note that serum levels may appear within normal limits in a dehydrated patient, but may be dangerously low when patient is rehydrated⁶⁸ |

*Omega-3 supplementation may increase risk for bleeding, increase exposure to environmental toxins, or cause hypervitaminosis (Vitamin A and D).

Medications and their Effects on Nutrition



Many medications used to address mental health concerns have effects on the nutritional status of children and youth. It is important to be aware and advise patients of the major nutritional side effects of these medications. Two classes of medications have more severe nutritional implications and are noted below. For a list of common psychiatric medications and general nutritional side effects, see the *Commonly Used Psychiatric Medications Monitoring Guide for Children and Adolescents*, available as a link from Module 6.

SECOND GENERATION ANTIPSYCHOTICS (e.g. Aripiprazole, clozapine, olanzapine, paliperidone, quetiapine, risperidone, ziprasidone):

Second generation antipsychotics (SGAs) in children and youth may cause a severe increase in their hunger and potential cravings for carbohydrates. Many children and youth can show significant weight gain in a very short period of time.⁶⁹ Some also develop metabolic side effects, such as impaired fasting glucose.⁷⁰ The hunger cravings can be so severe that they affect a family's ability to live normally. This may warrant a discussion with the psychiatrist to determine if there is medication with less significant nutrition-related side effects that won't compromise mental health. *NOTE: SGAs may also be known as or referred to as atypical antipsychotics (AAPs) by some health professionals and families.*

When families are informed of the potential side effects to these medications, they can make adjustments such as:

- Removing sugar-sweetened beverages from the home
- Limiting the amount of treats in the house. However, ensure families are still allowing some treats. Deprivation can amplify cravings (for example, 1-2 small cookies / day is normal and healthy)
- Providing regularly scheduled healthy meals and snacks (3 meals and 1-3 snacks / day)
- Outside of meal / snack times, families can redirect a child or youth when they exhibit hunger cravings by engaging them in activities unrelated to food (see the link to the handout on treating without food in the resource section, under 'National Heart Foundation of Australia')



Provide regular meals and snacks: 3 small meals and 3 snacks per day



- Increasing the fibre of grains or choosing lower glycemic index grains can also help a child or youth feel more full and satisfied. For example, a bowl of Mini Wheats® with 5 grams of fibre per serving will help fill a child up more than a bowl of Cheerios® with only 2 grams of fibre per serving. See the resource section for a handout on glycemic index (under 'Canadian Diabetes Association')
- Having a glass of water prior to eating will fill up the stomach and can sometimes reduce intake

STIMULANTS (e.g. Methylphenidate, Dextroamphetamine):

Stimulant medications act as appetite suppressants in many children. If a child has little or no appetite and the medication is affecting their growth, tips for parents include:

- Increasing the caloric content of the foods by boosting fat in the diet by adding butter or margarine, gravies, sauces, or salad dressings to foods. Use higher fat foods such as peanut butter, full fat cheese, and nuts and seeds
- Trying not to drink before or during meals, to ensure the child/youth fills up on food, not liquids
- Having milkshakes made with whole milk, ice cream and fresh fruit, or having meal replacements such as Pediasure (for children 2-9 years old) or Boost/Ensure (for children >9 years of age and >22 kg [48 lbs])
- Ensuring children/youth take snacks with them (see the *Great Snacks* handout at the back of this module for ideas)
- Providing regular small meals and snacks: 3 small meals and 3 snacks in a day
- See Section 3 – ADHD for more information and recommendations
- A resource sheet for families (Managing Stimulant Medications in Children and Adolescents) can be found at: <http://keltymentalhealth.ca/treatment/medications> (under 'ADHD')



In this section, you will find resources that may be helpful to both yourself as well as to the families you see in your daily practice. At the end of this section, you will find some tools and handouts. Some of these tools will be useful for you to use with the children and youth you see (e.g. assessment tools), while others can be given to children, youth or parents / caregivers as a handout.

Online Resources

| Organization | Details | Web Address |
|----------------------|---|---|
| Dietitians of Canada | <ul style="list-style-type: none"> • Healthy eating resources, including: EATracker, tip sheets, a virtual grocery store tour, healthy meal planning and shopping • Find a Dietitian search page | http://www.dietitians.ca/your-health.aspx |
| | <ul style="list-style-type: none"> • WHO Growth Charts adapted for Canada and a guide on how to use them | http://www.dietitians.ca/secondary-pages/public/who-growth-charts.aspx |
| Health Canada | Access to: <ul style="list-style-type: none"> • Eating Well with Canada's Food Guide (free copies can be ordered in many languages as well as a Food Guide for First Nations, Inuit, and Métis) • My Food Guide (build your own food guide) • My Food Guide Serving Tracker • Eat Well and Be Active Toolkit • Nutrition labelling resources | www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php |
| | <ul style="list-style-type: none"> • Caffeine recommendations | http://healthycanadians.gc.ca/kids-enfants/food-ailment/drink-boissons-eng.php |
| Caring for Kids | <ul style="list-style-type: none"> • Good general resources for parents around promoting healthy eating habits and managing picky eating | http://www.caringforkids.cps.ca/handouts/healthybodies-index |
| Ellyn Satter | <ul style="list-style-type: none"> • Many resources for parents on the Division of Responsibility in Feeding, how and what to feed children, family meals and meal planning | www.ellynsatter.com |

| Organization | Details | Web Address |
|--|---|--|
| Healthy Families BC | <ul style="list-style-type: none"> Contains many tips, tools and resources related to healthy eating | http://www.healthyfamiliesbc.ca/ |
| Dietitian Services at HealthLink BC | <ul style="list-style-type: none"> Nutrition handouts on healthy eating for specific age groups as well as for different medical conditions Free access to dietitians by calling HealthLink BC at 811 and asking to speak with a registered dietitian | www.healthlinkbc.ca/dietitian |
| | <ul style="list-style-type: none"> Handout on energy drinks | www.healthlinkbc.ca/healthfiles/hfile109.stm |
| Heart and Stroke Foundation | <ul style="list-style-type: none"> Healthy eating resources including: planning healthy meals, eating out, and eating for different life stages | http://www.healthcheck.org/page/healthy-eating |
| BC Dairy Association | <ul style="list-style-type: none"> Online calcium calculator | http://www.bcdairy.ca/nutritioneducation/calciumcalculator |
| National Heart Foundation of Australia | <ul style="list-style-type: none"> Handout on using food as a reward | www.heartfoundation.org.au/SiteCollectionDocuments/InfoFlyers-FoodAsReward.pdf |
| ACT (Autism Community Training) | <ul style="list-style-type: none"> Link to service providers for children with ASD in BC, including OT and SLP RASP (The Registry of Autism Service Providers) list for children under 6 years old | www.actcommunity.net/search/raspprofiles.aspx |
| | <ul style="list-style-type: none"> Service providers for children over 6 years old (can use both RASP list, or other list of service providers) | http://www.actcommunity.net/component/actsearch/?controller=compsearch |
| Canadian Diabetes Association | <ul style="list-style-type: none"> Free nutrition resources related to diabetes, including the glycemic index | http://www.diabetes.ca/files/glycemicindex_08.pdf |
| Kelty Mental Health Resource Centre | A Healthy Eating Quiz for parents/caregivers to test their knowledge of healthy eating, and learn about how healthy eating can impact mental health | http://keltymentalhealth.ca/healthy-eating-quiz |

Books

Satter, E. (2005). *Your Child's Weight: Helping without Harming (Birth through Adolescence)*. Wisconsin: Kelcy Press.

Satter, E. (2008). *Secrets of Feeding a Healthy Family: How to Eat, How to Raise Good Eaters, How to Cook*. Wisconsin: Kelcy Press.

References

1. Dietitians of Canada. *The role of dietitians in collaborative primary health care mental health programs*. Retrieved from: www.ccmhi.ca/en/products/toolkits.html
2. American Dietetic Association (2002). Position of the American Dietetic Association: Food and nutrition misinformation. *Journal of the American Dietetic Association*, 102(2), 260-266
3. Gans, KM, Ross, E, Barner, CW, Wylie-Rosett, J, McMurray, J & Eaton, C (2003). REAP and WAVE: New Tools to Rapidly Assess/Discuss Nutrition with Patients. *The Journal of Nutrition*, 133, 556S-562S
4. Neumark-Sztainer, D, Larson, NI, Fulkerson, JA, Eisenberg, ME & Story, M (2010). Family meals and adolescents: what have we learned from Project EAT (Eating Among Teens)? *Public Health Nutrition*, 13(7), 1113-1121
5. Fulkerson, JA, Kubik, MY, Story, M, Lytle, L & Arcan, C (2009). Are there nutritional and other benefits associated with family meals among youth? *Journal of Adolescent Health*, 45(4), 389-395
6. Eisenberg, ME, Olson, RE, Neumark-Sztainer, D, Story, M & Bearinger, LH (2004). Correlations Between Family Meals and Psychosocial Well-Being Among Adolescents. *Archives of Pediatrics & Adolescent Medicine*, 158, 792-796
7. Nishizawa, T, Akaoka, I, Nishida, Y, Kawaguchi, Y, Hayashi, E & Yoshimura, T (1976). Some factors related to obesity in the Japanese sumo wrestler. *The American Journal of Clinical Nutrition*, 29, 1167-1174
8. Yui, M (2010). Secrets of the sumo wrestler's diet. Retrieved from <http://www.cnn.com/tokyo/none/secrets-sumo-wrestlers-diet-067161>
9. Deshmukh-Taskar, PR, Nicklas, TA, O'Neil, CE, Keast, DR, Radcliffe, JD & Cho, S (2010). The Relationship of Breakfast Skipping and Type of Breakfast Consumption with Nutrient Intake and Weight Status in Children and Adolescents: The National Health and Nutrition Examination Survey 1999-2006. *Journal of the American Dietetic Association*, 110, 869-878. doi: 10.1016/j.jada.2010.03.023
10. Rampersaud, GC, Pereira, MA, Girard, BL, Adams, J & Metzl, JD (2005). Breakfast Habits, Nutritional Status, Body Weight, and Academic Performance in Children and Adolescents. *Journal of the American Dietetic Association*, 105, 743-760
11. McVey, G, Tweed, S & Blackmore, E (2004). Dieting among preadolescent and young adolescent females. *Canadian Medical Association Journal*, 170(10), 1559-1561
12. Gusella, J, Goodwin, J & van Roosmalen, E (2008). 'I want to lose weight': Early risk for disordered eating? *Paediatrics & Child Health*, 13(2), 105-110
13. Field, AE, Austin, SB, Taylor, CB, Malspeis, S, Rosner, B., Rockett, HR, Gillman, MW & Colditz, GA (2003). Relation Between Dieting and Weight Change Among Preadolescents and Adolescents. *Pediatrics*, 112(4), 900-906
14. Patton, GC, Selzer, R, Coffey, C, Carlin, JB & Wolfe, R (1999). Onset of adolescent eating disorders: population based cohort study over 3 years. *British Medical Journal*, 318(7186), 765-768
15. Ludwig, DS, Peterson, KE & Gortmaker, SL (2001). Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis. *The Lancet*, 357, 505-508
16. Malik, VS, Popkin, BM, Bray, GA, Despres, J, Willett, WC & Hu, FB (2010). Sugar-Sweetened Beverages and Risk of Metabolic Syndrome and Type 2 Diabetes. *Diabetes Care*, 33(11), 2477-2483. doi: 10.2337/dc10-1079

References *(continued)*

17. Fiorito, LM, Marini, M, Francis, LA, Smiciklas-Wright, H & Birch, LL (2009). Beverage intake of girls at age 5 y predicts adiposity and weight status in childhood and adolescence. *American Journal of Clinical Nutrition*, 90, 935-942. doi: 10.3945/ajcn.2009.27623
18. Satter, E (2005). *Your Child's Weight: Helping without Harming (Birth through Adolescence)*. Wisconsin: Kelcy Press
19. Puhl, RM & Schwartz, MB (2003). If you are good you can have a cookie: How memories of childhood food rules link to adult eating behaviors. *Eating Behaviors*, 4, 283-293
20. A Study to Assess the Role of a Gluten Free-dairy Free (GFCF) Diet in the Dietary Management of Autism Associated Gastrointestinal Disorders <http://clinicaltrials.gov/ct2/show/NCT01116388?term=diet&rank=10>
21. Millward, C, Ferriter, M, Calver, SJ, & Connell-Jones, GG (2008). *Gluten- and casein-free diets for autistic spectrum disorder*. Cochrane Database of Systematic Reviews, Issue 2, Art. No.: CD003498. DOI: 10.1002/14651858.CD003498.pub3
22. Hyman, S, Stewart, PA, Smith, T, Foley, J, Cain, U, Peck, R, Morris, DD, & Wang, H (2010). *The Gluten Free and Casein Free (GFCF) Diet: A Double Blind, Placebo Controlled Challenge Study*. International Meeting for Autism Research. May 22, 2010. Funded by STAART NIMH PO1HD35466
23. Whiteley, P, Haracopos, D, Knivsberg, AM, Reichelt, KL, Parlar, S, Jacobsen, J, Seim, A, Pedersen, L & Shattock, P (2010). The ScanBrit randomised, controlled, single-blind study of a gluten- and casein-free dietary intervention for children with autism spectrum disorders. *Nutritional Neuroscience*, 13(2), 87-100
24. Winter, HS (2010). *A Study to Assess the Role of a Gluten Free-dairy Free (GFCF) Diet in the Dietary Management of Autism Associated Gastrointestinal Disorders* (ClinicalTrials.gov identifier: NCT01116388) Retrieved from <http://clinicaltrials.gov/ct2/show/NCT01116388?term=gluten+and+autism&rank=1>
25. Peregrin, T (2007). Registered Dietitians' Insights in Treating Autistic Children. *Journal of the American Dietetic Association*, 107 (5), 727-730. doi: 10.1016/j.jada.2007.03.021
26. Jyonouchi, H (2009). Food Allergy and Autism Spectrum Disorders: Is There a Link? *Current Allergy and Asthma Reports*, 9, 194-201
27. Erickson, CA, Stigler, KA, Corkins, MR, Posey, DJ, Fitzgerald, JF & McDougale, CJ (2005). Gastrointestinal Factors in Autistic Disorder: A Critical Review. *Journal of Autism and Developmental Disorders*, 35(6), 713-727. doi: 10.1007/s10803-005-0019-4
28. Cornish, E (1998). A balanced approach towards healthy eating in autism. *Journal of Human Nutrition and Dietetics*, 11, 501-509
29. Cermak, SA, Curtin, C & Bandini, LG (2010). Food Selectivity and Sensory Sensitivity in Children with Autism Spectrum Disorders. *Journal of the American Dietetic Association*, 110, 238-246. doi: 10.1016/j.jada.2009.10.032
30. Herndon, AC, DiGuseppi, C, Johnson, SL, Leiferman, J & Reynolds, A (2009). Does Nutritional Intake Differ Between Children with Autism Spectrum Disorders and Children with Typical Development? *Journal of Autism and Developmental Disorders*, 39, 212-222
31. Latif, A, Heinz, P, & Cook, R (2002) Iron Deficiency in Autism and Asperger Syndrome. *Autism*, 6 (1), 103-114. doi: 10.1177/1362361302006001008
32. Dosman, C, Drmic, I, Brian, J, Senthilselvan, A, Harford, M, Smith, R & Roberts, SW (2006). Ferritin as an indicator of suspected iron deficiency in children with autism spectrum disorder: prevalence of low serum ferritin concentration. *Developmental Medicine & Child Neurology*, 48, 1006-1011. doi: 10.1017/S0012162206232225
33. Dosman, CF, Brian, JA, Drmic, IE, Senthilselvan, A, Harford, MM, Smith, RW, Sharieff, W, Zlotkin, SH, Moldofsky, H, & Roberts, SW (2007). Children with Autism: Effect of Iron Supplementation on Sleep and Ferritin. *Pediatric Neurology*, 36(3), 152-158
34. Bent, S, Bertoglio, K & Hendren, RL (2009) Omega-3 fatty acids for autistic spectrum disorder: a systematic review. *Journal of Autism and Developmental Disorders*, 39(8), 1145-1154
35. Faraone, S, Biederman, J, Morley, CP, & Spencer, TJ (2008). Effect of Stimulants on Height and Weight: A Review of the Literature. *Journal of the American Academy of Child & Adolescent Psychiatry*, 47:9, 994-1009

References *(continued)*

36. Meijer, WM, Faber, A, van den Ban, E & Tobi, H (2009). Current issues around the pharmacotherapy of ADHD in children and adults. *Pharmacy World & Science*, 31, 509-516. DOI: 10.1007/s11096-009-9302-3
37. Charach, A, Figueroa, M, Chen, S, Ickowicz, A & Schachar, R (2006). Stimulant Treatment Over 5 Years: Effects on Growth. *Journal of the American Academy of Child and Adolescent Psychiatry*, 45(4), 415-421
38. Ross, BM, Seguin, J & Sieswerda, LE (2007). Review: Omega-3 fatty acids as treatments for mental illness: which disorder and which fatty acid? *Lipids in Health and Disease*, (6)21
39. Konofal, E, Lecendreux, M, Deron, J, Marchand, M, Cortese, S, Zaim, M, Mouren, MC & Arnulf, I (2008). Effects of iron supplementation on attention deficit hyperactivity disorder in children. *Pediatric Neurology*, 38(1), 20-26
40. Konofal, E, Lecendreux, M, Arnulf, I & Mouren, MC (2005). Iron deficiency in children with attention-deficit/hyperactivity disorder. *Archives of Pediatrics and Adolescent Medicine*, 158(12), 1113-1115
41. Kiddie, JY, Weiss, MD, Kitts, DD, Levy-Milne, R & Wasdell, MB (2010). Nutritional Status of Children with Attention Deficit Hyperactivity Disorder: A Pilot Study. *International Journal of Pediatrics*. Article ID 767318, 7 pages. DOI: 10.1155/2010/767318
42. Arnold, LE, Bozzolo, H, Holloway, J, Cook, A, DiSilvestro, RA, Bozzolo, DR, Crowl, L, Ramadan, Y & Williams, C (2005). Serum Zinc Correlates with Parent- and Teacher-Rated Inattention in Children with Attention-Deficit/Hyperactivity Disorder. *Journal of Child and Adolescent Pharmacology*, 15(4), 628-636
43. Arnold, LE & DiSilvestro, R. (2005). Zinc in attention-deficit/hyperactivity disorder. *Journal of Child and Adolescent Psychopharmacology*, 15(4), 619-627
44. Ghuman, JK, Arnold, LE, & Anthony, BJ (2008). Psychopharmacological and Other Treatments in Preschool Children with Attention-Deficit/Hyperactivity Disorder: Current Evidence and Practice. *Journal of Child and Adolescent Psychopharmacology*, 18(5), 413-447 DOI: 10.1089/cap.2008.022
45. Bateman, B, Warner, JO, Hutchinson, E, Dean, T, Rowlandson, P, Gant, C, Grundy, J, Fitzgerald, C, & Stevenson, J (2004). The effects of a double blind, placebo controlled, artificial food colourings and benzoate preservative challenge on hyperactivity in a general population sample of preschool children. *Archives of Disease in Childhood*, 89, 506-511
46. Schab, DW & Trinh, NH (2004). Do artificial food colors promote hyperactivity in children with hyperactive syndromes? A meta-analysis of double-blind placebo-controlled trials. *Journal of Developmental and Behavioural Pediatrics*, 25(6), 423-434
47. Wolraich, ML, Wilson, DB, & White, JW (1995). The effect of sugar on behaviour or cognition in children. A meta-analysis. *Journal of the American Medical Association*, 274(20), 1617-1621
48. Krummel, DA, Seligson, FH, & Guthrie, HA (1996). Hyperactivity: is candy causal? *Critical Reviews in Food Science and Nutrition*. 36(1-2), 31-47
49. Niederhofer, H & Pittschieler, K (2006). A preliminary investigation of ADHD symptoms in persons with celiac disease. *Journal of Attention Disorders*, 10(2), 200-204
50. Lin, PY & Su, KP (2007). A meta-analytic review of double-blind, placebo-controlled trials of antidepressant efficacy of omega-3 fatty acids. *Journal of Clinical Psychiatry*, 68(7), 1056-1061
51. Appleton, KM, Rogers, PJ & Ness, AR (2010). Updated systematic review and meta-analysis of the effects of n-3 long-chain polyunsaturated fatty acids on depressed mood. *American Journal of Clinical Nutrition*, 91(3), 757-770
52. Montgomery, P & Richardson, AJ (2008). Omega-3 fatty acids for bipolar disorder. *Cochrane Database of Systematic Reviews*, Issue 2. DOI: 10.1002/14651858.CD005169.pub2
53. Taylor, MJ, Carney, SM, Geddes, J, & Goodwin, G (2003). Folate for depressive disorders. *Cochrane Database of Systemic Reviews*, Issue 2. DOI: 10.1002/14651858.CD003390
54. Young, SN (2007). Folate and Depression – a neglected problem. *Journal of Psychiatry and Neuroscience*, 32(2), 80-82

References *(continued)*

55. Pynnonen, PA, Isometsa, ET, Aronen, ET, Verkasalo, MA, Savilahti, E, & Aalberg, V (2004). Mental Disorders in Adolescents with Celiac Disease. *Psychosomatics*, 45(4), 325-335
56. Irving, CB, Mumby-Croft, R & Joy, LA (2006). Polyunsaturated fatty acid supplementation for schizophrenia. Cochrane Database of Systematic Reviews, Issue 3.
57. Emsley, R, Niehaus, DJ, Oosthuizen, PP, Koen, L, Ascott-Evans, B, Chiliza, B, van Rensburg, SJ, & Smit, RM (2008). Safety of the omega-3 fatty acid, eicosapentaenoic acid (EPA) in psychiatric patients: results from a randomized, placebo-controlled trial. *Psychiatry Research*, 161(3), 284-291
58. Cascella, NG, Kryszak, D, Bhatti, B, Gregory, P, Kelly, DL, McEvoy, JP, Fasano, A & Eaton, WW (2009). Prevalence of Celiac Disease and Gluten Sensitivity in the United States Clinical Antipsychotic Trials of Intervention Effectiveness Study Population. *Schizophrenia Bulletin*.
59. Eaton, WW, Byrne, M, Ewald, H, Mors, O, Chen, CY, Agerbo, E & Mortensen, PB (2006). Association of Schizophrenia and Autoimmune Diseases: Linkage of Danish National Registers. *American Journal of Psychiatry*, 163(3), 521-528
60. Ryan, MCM, Collins, P & Thakore, JH (2003). Impaired Fasting Glucose Tolerance in First-Episode, Drug-Naïve Patients with Schizophrenia. *American Journal of Psychiatry*, 160(2), 284-289
61. Spelman, LM, Walsh, PI, Sharifi, N, Collins, PB & Thakore, JH (2007). Impaired glucose tolerance in first-episode drug-naïve patients with schizophrenia. *Diabetic Medicine*, 24(5), 481-485
62. Bushe, C & Holt, R (2004) Prevalence of diabetes and impaired glucose tolerance in patients with schizophrenia. *British Journal of Psychiatry*, 184, S67-S71
63. van Nimwegen, LJM, Storosum, JG, Blumer, RME, Allick, G, Venema, HW, de Haan, L, Becker, H., van Amelsvoort, T, Ackermans, MT, Fliers, E, Serlie, MJM. & Sauerwein, HP (2008). Hepatic Insulin Resistance in Antipsychotic Naïve Schizophrenic Patients: Stable Isotope Studies of Glucose Metabolism. *Journal of Clinical Endocrinology & Metabolism*, 93, 572-577
64. American Dietetic Association (2006). Position of the American Dietetic Association: Nutrition Intervention in the Treatment of Anorexia Nervosa, Bulimia Nervosa, and Other Eating Disorders. *Journal of the American Dietetic Association*, 106, 2073-2082
65. Yager, J, Devlin, MJ, Halmi, KA, Herzog, DB, Mitchell, JE, Powers, P & Zerbe, KJ (2006). Practice Guidelines for the Treatment of Patients with Eating Disorders (3rd ed.)
66. Robinson-O'Brien, R, Perry, CL, Wall, MM, Story, M & Neumark-Sztainer, D (2009). Adolescent and Young Adult Vegetarianism: Better Dietary Intake and Weight Outcomes but Increased Risk of Disordered Eating Behaviours. *Journal of the American Dietetic Association*, 109, 648-655. doi: 10.1016/j.jada.2008.12.014
67. Reiter, CS & Graves, L (2010). Nutrition Therapy for Eating Disorders. *Nutrition in Clinical Practice*, 25(2), 122-136. doi: 10.1177/0884533610361606
68. Setnick, J (2010). Micronutrient Deficiencies and Supplementation in Anorexia and Bulimia Nervosa: A Review of the Literature. *Nutrition in Clinical Practice*, 25(2), 137-142
69. Correll, CU, Manu, P, Olshansky, V, Napolitano, B, Kane, JM & Malhotra, AK (2009). Cardiometabolic Risk of Second-Generation Antipsychotic Medications During First-Time Use in Children and Adolescents. *Journal of the American Medical Association*, 302(16), 1765-1773
70. Panagiotopoulos, C, Ronsley, R & Davidson, J (2009). Increased Prevalence of Obesity and Glucose Intolerance in Youth Treated with Second-Generation Antipsychotic Medications. *The Canadian Journal of Psychiatry*, 54(11), 743-749
71. Bloch, MH & Qawasmi, A (2011). Omega-3 Fatty Acid Supplementation for the Treatment of Children with Attention-Deficit/Hyperactivity Disorder Symptomatology: Systematic Review and Meta-Analysis. *Journal of the American Academy of Child & Adolescent Psychiatry*, 50(10), 991-999
72. Madhusmita, M & Klibanski, A (2011). Bone Health in Anorexia Nervosa. *Current Opinion in Endocrinology, Diabetes and Obesity*, 18, 376-382

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Tools and Handouts

Great Breakfast Ideas



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Sumo wrestlers only eat 2 meals a day. They skip breakfast to slow down their metabolism and gain weight.¹ But if you don't eat breakfast, it's the same as trying to drive a car without gas in the tank. Or it's like superman trying to fly with kryptonite in his pocket. Your body needs a refill after its overnight 'fast'.



Reasons To Eat Breakfast



- Easier to keep a healthy body weight (i.e. not trying to become a sumo wrestler)
- Be better at thinking, remembering and getting higher grades in school
- Be healthier with a diet higher in many important vitamins and minerals, such as fibre, iron, vitamin C and calcium
- Keep your metabolism* revving

Ways To Eat Breakfast



- Eat it hot or cold
- Have leftovers from last night's dinner
- Make sure your kitchen is stocked with food (cereals, bread, peanut butter, fruit)
- Breakfast should include at least 3 out of the 4 food groups from Canada's Food Guide:
 - Fruit and Vegetable
 - Grain Products
 - Milk and Milk Alternatives
 - Meat and Meat Alternatives
- Kids are more likely to eat breakfast if their parents and older siblings do

Making Time For Breakfast



- Set your alarm 15 minutes early
- Make lunches the night before
- Keep the TV and video games turned off
- Grab it as you run out the door - for example a yogurt, piece of fruit, and a high fibre granola bar (with 5g fibre/serving)

Cold Breakfast Ideas



- Whole grain cereal**, milk, and a banana
- Whole grain toasted bagel with peanut butter (2 tbsp) and a glass of milk
- Dry whole grain cereal or low fat granola mixed into yogurt with fruit



Cold Breakfast Ideas (continued)



- Whole wheat tortilla with peanut butter and a banana all rolled up, and a glass of milk
- Home-made muffin with yogurt and a piece of fruit
- Toast or English muffin with jam, a cheese string, and melon slices
- Toast with margarine (1 tsp) and a fruit smoothie: 1 cup milk, 1/2 cup frozen fruit and 1/2 banana
- Cold leftover pizza
- The European breakfast: 2 slices ham, a cheese string, and a roll with 1 tsp butter or margarine
- Homemade parfait: low fat granola with 3/4 cup yogurt and berries

Hot Breakfast Ideas



- Whole grain waffles with applesauce and milk
- Breakfast wrap: 2 scrambled eggs with 2 tbsp shredded cheese and salsa in a whole wheat tortilla wrap
- Leftovers from last night's dinner
- Oatmeal: mix 1/2 cup old-fashioned oats with 1 cup water. Microwave for 2 1/2 to 3 minutes (bowl should have high sides to prevent bubbling over) and top with frozen blueberries and milk
- Rice bowl with chicken and vegetables
- Red River cereal with raisins and milk
- Hard boiled egg with a crumpet and slice of ham
- 2 poached eggs with 1 cup hashbrowns and fruit

Foods That Are A Little More Sumo And A Little Less Superman

All foods are okay in moderation – there are no “good” and “bad” foods. But it is better to have some foods less often than others for breakfast, such as donuts, muffins and pastries. There's nothing wrong with having a donut every once in a while, but it shouldn't be every day. When you do eat your donut, sit down, turn off the TV, and enjoy it.

Have one special family breakfast on the weekend with waffles or crepes and whipped cream, omelets, or eggs and bacon. Items like bacon and sausage are also okay to have for breakfast once in a while, but not everyday.

* Metabolism is the energy required to maintain life. It can be affected by the amount of food a person eats. If a person skips meals, the metabolism will decrease to ensure the body can 'survive' on less food. Even if food is eaten later to make up for the missed meal, the metabolism will remain slower, which can lead to problems staying at a healthy weight.

** For whole grain cereal, breads and granola bars: >2g fibre/serving = good; >5g fibre/serving = great!

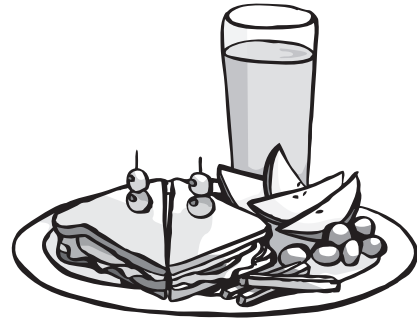
¹ Nishizawa, 1976; Yui, 2001

Great Lunch Ideas



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It can be a struggle to pack a healthy lunch for children and youth. It's not easy to find food children will actually eat, and to have it made in time to get the kids off to school. This handout may not reduce all the smashed sandwiches and brown bananas at the bottom of their lunch box, but it may give you some helpful ideas. We have included some tips on how to prepare healthy lunches, how to get your children to eat them, and how maybe just to liven things up.



How To Prepare A Tasty And Healthy Lunch



- Sit down with your child and see what type of food they like in their lunch. Some kids like hot lunches in a thermos and some love sandwiches
- Some kids like the exact same lunch every day. That's not too bad, unless the only lunch your child will eat is not very healthy (e.g. chicken nuggets every day). Some parents have found it helpful to let their child have that lunch 3 or 4 days a week, but then have a lunch that the parents choose on the other days. Or it can help to offer a new food along with a familiar food. This can help to slowly work in other food choices. Remember, sometimes it can take 12-15 attempts before children will like a new food
- A healthy lunch should include at least 3 out of the 4 food groups in Canada's Food Guide: Fruits and Vegetables, Grains, Milk and Milk Alternatives, and Meat and Meat Alternatives
- Try to stay away from prepackaged foods. Although they are convenient, they are often very high in salt, sugar and fat
- Add a sticker, a joke, or a nice note with a lunch that will make your child smile (even if they groan, they're probably smiling on the inside)

Too Busy Playing To Eat Lunch



For many active children, it can be too exciting to eat lunch at school. All they want to do is get out and play. Some schools now schedule time for play before lunchtime, so children can burn off their excitement and sit still to eat lunch. If your child's school doesn't have this new program yet, talk to them about it. A toolkit for schools to help implement the "Play First Lunch" can be found at the following link: www.healthyeatingatschool.ca/nutrition-policies

In the meantime, if your child can't seem to get their lunch in, then provide a healthy (and a bit heartier) afternoon snack. Sometimes, a child can have a snack for lunch, and lunch for the afternoon snack.



Peer Pressure & Skipping Lunch

More and more often teenagers and even pre-teens are skipping lunch. This is a hard time of life for pre-teens and teenagers and trying to fit in with their peer group is important. It's good to have frank conversations with your children about whether or not they are eating lunch, and if not, why. Some children and youth try to diet and others just don't want to stand out in their peer group. Try to arm your children with facts about the benefits of eating lunch, such as:

- A speedy metabolism*. This helps you maintain a healthy weight
- Hunger control. Skipping meals causes increased hunger later, and a high likelihood of overeating
- If your child is actively trying to diet, it may help to explain that teenagers who try to diet often end up gaining more weight than their non-dieting peers

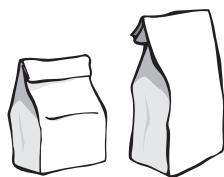
Keep a watchful eye on dieting preteens and teenagers. If their dieting seems to intensify, it is a good idea to discuss this with your family doctor.

Keep Lunch Safe

Many lunch foods can spoil and should not be out of a fridge for longer than 2 hours. To keep food cold, put a freezer pack in with the lunch and keep drinks like milk in a thermos. To keep foods hot, use an insulated thermos.

Lunch Ideas

(Remember, teenagers will generally need a larger lunch, and young children will need a smaller lunch)



PACK A GRAIN AND MEAT OR MEAT ALTERNATIVE

- Sandwiches:
 - Meat and cheese with a little margarine and mustard
 - Tuna or salmon salad
 - Peanut butter and jam
 - Cucumber and cream cheese
- Whole grain** crackers and cheese, crackers with tuna, crackers and soup
- Low fat granola with yogurt
- Burritos with beans and cheese or a tortilla with baked beans
- Homemade muffin with cheese or peanut butter or cottage cheese
- Leftovers: pasta and tomato sauce, rice with meat and vegetables, cold pizza

ADD A VEGETABLE AND/OR FRUIT

- Carrot sticks, celery sticks, broccoli (etc.) with a small amount of dip
- Apple pieces (dipped in lemon juice to prevent browning), oranges, berries, cantaloupe and melon (cut up), banana

ADD A MILK OR MILK ALTERNATIVE

- Yogurt, cheese strings (if not already provided in a sandwich or main course), milk, kefir (a fermented milk drink)

ADD A SMALL TREAT

- Animal crackers with yogurt to dip
- 2 small cookies

* Metabolism is the energy required to maintain life. It can be affected by the amount of food a person eats. If a person skips meals, the metabolism will decrease to ensure the body can 'survive' on less food. Even if food is eaten later to make up for the missed meal, the metabolism will remain slower, which can lead to problems staying at a healthy weight.

**For whole grain cereal, breads and granola bars: >2g fibre/serving = good; >5g fibre/serving = great!

Great Snacks



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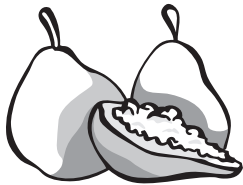
Snacks are great! Children and youth should have 1-3 snacks every day. The snacks below:

- Help to keep you full between meals so you won't overeat at regular meal times
- Give you energy to do the things you love to do
- Are great after activity
- Have 2 out of the 4 food groups from Canada's Food Guide

For very young children, the portion sizes should be smaller.
For older teenagers, especially boys, the portion sizes should be larger. Encourage children and youth to eat if they are hungry, and stop when they are full.



Cold Snacks



- Apple slices with 1 tbsp peanut butter
- Triscuits (~5) with 1 cheese string
- Pear slices with 1/4 cup cottage cheese
- Home-made trail mix: 1/4 cup cereal of choice (e.g. Cheerios) + 3 tbsp raisins + 1-2 tbsp peanuts
- 1 small bag of mini pretzels with 1/4 cup hummus
- Celery sticks with thinly spread peanut butter (1 tbsp)
- 1/2 cup whole grain cereal (>2g fibre/serving) and milk
- Baked tortilla chips (~20-25 chips) and 2 tbsp bean dip or salsa
- 1 tbsp peanut butter on 1 slice whole grain bread
- 2 turkey slices on 1 slice whole grain bread with 1 tsp margarine or 1 tbsp mayonnaise
- 3/4 cup yogurt with fruit
- 1/2 pita pocket filled with shredded carrots, sliced cucumbers, and 2-3 tbsp cheese with 1-2 tbsp tzaziki or hummus
- Fruit kabob: cut-up fruit on a kabob stick with yogurt for dipping
- Yogurt parfait: 1/2 cup yogurt, 1/4 cup whole grain cereal (>2g fibre/serving), 1/4 cup fresh fruit
- Canned tuna or salmon on whole grain crackers (~5)
- Fruit smoothie: 1 cup milk, 1/2 cup frozen strawberries and 1/2 banana

**Hot Snacks**

- Cup of soup: tomato, vegetable, lentil, pea, etc. with whole grain crackers (~5)
- 1 whole grain waffle topped with 2 tbsp vanilla yogurt and 1/2 cup fresh fruit
- 1/2 English muffin topped with pizza sauce and cheese (2-3 tbsp)
- Quesadilla: small tortilla with salsa and cheese (2-3 tbsp)
- 1/2 English muffin with a sliced hard boiled egg with 1 tbsp cheese melted on top
- A few cups of air-popped (with 1-2 tsp margarine, butter or olive oil and a sprinkle of salt, or 1-2 tbsp parmesan cheese) or low-fat popcorn (without added butter or margarine)

Tips

Kids are more likely to grab snacks to go if they're ready

- Keep vegetables washed and cut up in the fridge
- Keep fruit in a bowl on the kitchen table
- Keep treats away from eye level. If your kids don't see them, they won't choose them as often

Your Own Great Snacks

Come up with snack ideas on your own using Canada's Food Guide! Remember: a healthy snack has 2 out of the 4 food groups. The food groups are: fruit and vegetables, grain products, milk and alternatives, and meat and meat alternatives.

EXAMPLE #1: Yogurt + Toast
Food Group: A milk product Food Group: A grain

EXAMPLE #2: Apple + Peanut Butter
Food Group: A fruit Food Group: A meat alternative

Now try making your own great snacks!

SNACK IDEA #1: _____ + _____
Food Group: Food Group:

SNACK IDEA #2: _____ + _____
Food Group: Food Group:

SNACK IDEA #3: _____ + _____
Food Group: Food Group:

Meal Planning



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The best way to make sure your family eats a healthy, home cooked meal is by planning. If you know what is planned for dinner, and you have all of the ingredients, putting a meal together won't seem like such a chore.

Meals should include at least 3 out of the 4 food groups. Remember, the 4 food groups are: Vegetables and Fruit, Grain Products, Milk and Alternatives, and Meat and Alternatives. Here's an example of a meal and how to determine the food groups:

Meal: Bean and Cheese Burritos with Salad

Beans = Meat and Alternatives

Cheese = Milk and Alternatives

Tortilla = Grain Products

Salad = Fruit and Vegetable

Total Food Groups = 4 out of 4

Try to make sure your meal plans are simple, especially when starting out. Set aside time for meal planning. Involve your child in helping plan meals. Make a shopping list and do all your grocery shopping once a week. Below is a sample week of meal planning:

Sample Meal Plan (dinner):

| | | |
|------------------|--|-----------------|
| Sunday | <ul style="list-style-type: none">› Hamburger› Salad / mixed greens› Glass of milk | Food Groups = 4 |
| Monday | <ul style="list-style-type: none">› Baked beans on toast with grated cheese on top› Steamed broccoli | Food Groups = 4 |
| Tuesday | <ul style="list-style-type: none">› Avocado and shrimp with mozzarella quesadilla› Roasted asparagus | Food Groups = 4 |
| Wednesday | <ul style="list-style-type: none">› Shake n' bake chicken and rice› Mixed greens› Glass of milk | Food Groups = 4 |
| Thursday | <ul style="list-style-type: none">› Orzo and shredded chicken salad (with sweet peppers, and feta cheese)› Cut up cucumbers and carrots | Food Groups = 4 |
| Friday | <ul style="list-style-type: none">› Lentil Dahl with rice and plain yogurt› Peas and carrots | Food Groups = 4 |
| Saturday | <ul style="list-style-type: none">› Tuna pasta casserole (with cheese)› Roasted vegetables | Food Groups = 4 |

Make your own meal plan. See if you can figure out how many food groups each meal has.

Sunday Food Groups =

Monday Food Groups =

Tuesday Food Groups =

Wednesday Food Groups =

Thursday Food Groups =

Friday Food Groups =

Saturday Food Groups =

Here is a list of foods from each of the 4 food groups.
You can also use this as a grocery list.

Fruits and Vegetables

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> Corn | <input type="checkbox"/> Apple |
| <input type="checkbox"/> Peas | <input type="checkbox"/> Banana |
| <input type="checkbox"/> Broccoli | <input type="checkbox"/> Kiwi |
| <input type="checkbox"/> Asparagus | <input type="checkbox"/> Pear |
| <input type="checkbox"/> Edamame | <input type="checkbox"/> Peach |
| <input type="checkbox"/> Carrots | <input type="checkbox"/> Watermelon |
| <input type="checkbox"/> Cucumber | <input type="checkbox"/> Nectarine |
| <input type="checkbox"/> Beets | <input type="checkbox"/> Blueberries |
| <input type="checkbox"/> Bok Choy | <input type="checkbox"/> Lemon/Lime |
| <input type="checkbox"/> Gai Lan | <input type="checkbox"/> Cherries |
| <input type="checkbox"/> Squash | <input type="checkbox"/> Grapes |
| <input type="checkbox"/> Spinach | <input type="checkbox"/> Mango |
| <input type="checkbox"/> Tomatoes | <input type="checkbox"/> Strawberry |
| <input type="checkbox"/> Green Beans | <input type="checkbox"/> Raspberry |
| <input type="checkbox"/> Potatoes | <input type="checkbox"/> Apricot |
| <input type="checkbox"/> Lettuce | <input type="checkbox"/> Avocado |
| <input type="checkbox"/> Sweet peppers | <input type="checkbox"/> Berries |
| <input type="checkbox"/> Kale/Collards | <input type="checkbox"/> Grapefruit |
| <input type="checkbox"/> Yam | <input type="checkbox"/> Honeydew |
| <input type="checkbox"/> Pumpkin | <input type="checkbox"/> Guava |
| <input type="checkbox"/> Zucchini | <input type="checkbox"/> Lychee |
| <input type="checkbox"/> Cauliflower | <input type="checkbox"/> Orange |
| <input type="checkbox"/> Cabbage | <input type="checkbox"/> Papaya |
| <input type="checkbox"/> Kohlrabi | <input type="checkbox"/> Pineapple |
| <input type="checkbox"/> Mushrooms | <input type="checkbox"/> Rhubarb |

Grain Products

- | | |
|-----------------------------------|---|
| <input type="checkbox"/> Pasta | <input type="checkbox"/> Barley |
| <input type="checkbox"/> Crackers | <input type="checkbox"/> Bannock |
| <input type="checkbox"/> Bread | <input type="checkbox"/> Congee |
| <input type="checkbox"/> Pita | <input type="checkbox"/> Cornbread |
| <input type="checkbox"/> Tortilla | <input type="checkbox"/> English muffin |
| <input type="checkbox"/> Naan | <input type="checkbox"/> Waffle |
| <input type="checkbox"/> Cereal | <input type="checkbox"/> Pancake |
| <input type="checkbox"/> Couscous | <input type="checkbox"/> Roll |
| <input type="checkbox"/> Bulgur | <input type="checkbox"/> Rice |
| <input type="checkbox"/> Quinoa | |

Milk and Alternatives

- | |
|---|
| <input type="checkbox"/> Milk |
| <input type="checkbox"/> Buttermilk |
| <input type="checkbox"/> Chocolate Milk |
| <input type="checkbox"/> Cheese |
| <input type="checkbox"/> Cottage Cheese |
| <input type="checkbox"/> Fortified Soy Beverage |
| <input type="checkbox"/> Kefir |
| <input type="checkbox"/> Paneer |
| <input type="checkbox"/> Pudding/Custard (made from milk) |
| <input type="checkbox"/> Yogurt |

Meat and Alternatives

- | | | |
|--|---|---|
| <input type="checkbox"/> Deli Meat | <input type="checkbox"/> Baked Beans | <input type="checkbox"/> Game meats (deer, moose, caribou, elk) |
| <input type="checkbox"/> Tofu | <input type="checkbox"/> Refried Beans | <input type="checkbox"/> Goat |
| <input type="checkbox"/> Hummus | <input type="checkbox"/> Peanut Butter or nut butters | <input type="checkbox"/> Ham |
| <input type="checkbox"/> Canned fish (salmon, tuna, crab) | <input type="checkbox"/> Seeds (shelled) | <input type="checkbox"/> Lamb |
| <input type="checkbox"/> Fresh fish (herring, salmon, trout) | <input type="checkbox"/> Beef | <input type="checkbox"/> Turkey |
| <input type="checkbox"/> Lentils | <input type="checkbox"/> Bison/Bufalo | <input type="checkbox"/> Eggs |
| <input type="checkbox"/> Nuts (shelled) | <input type="checkbox"/> Chicken | |
| | <input type="checkbox"/> Game birds (partridge, grouse) | |

Advice for different ages and stages...

Children

Following *Canada's Food Guide* helps children grow and thrive.

Young children have small appetites and need calories for growth and development.

- Serve small nutritious meals and snacks each day.
- Do not restrict nutritious foods because of their fat content. Offer a variety of foods from the four food groups.
- Most of all... be a good role model.

Women of childbearing age

All women who could become pregnant and those who are pregnant or breastfeeding need a multivitamin containing **folate** every day. Pregnant women need to ensure that their multivitamin also contains **iron**. A health care professional can help you find the multivitamin that's right for you.

Pregnant and breastfeeding women need more calories. Include an extra 2 to 3 Food Guide Servings each day.

Here are two examples:

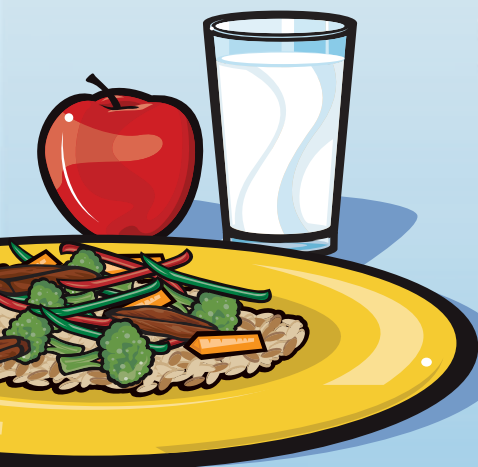
- Have fruit and yogurt for a snack, or
- Have an extra slice of toast at breakfast and an extra glass of milk at supper.

Men and women over 50

The need for **vitamin D** increases after the age of 50.

In addition to following *Canada's Food Guide*, everyone over the age of 50 should take a daily vitamin D supplement of 10 µg (400 IU).

How do I count Food Guide Servings in a meal?



Here is an example:

Vegetable and beef stir-fry with rice, a glass of milk and an apple for dessert

| | | |
|--|---|---|
| 250 mL (1 cup) mixed broccoli, carrot and sweet red pepper | = | 2 Vegetables and Fruit Food Guide Servings |
| 75 g (2 ½ oz.) lean beef | = | 1 Meat and Alternatives Food Guide Serving |
| 250 mL (1 cup) brown rice | = | 2 Grain Products Food Guide Servings |
| 5 mL (1 tsp) canola oil | = | part of your Oils and Fats intake for the day |
| 250 mL (1 cup) 1% milk | = | 1 Milk and Alternatives Food Guide Serving |
| 1 apple | = | 1 Vegetables and Fruit Food Guide Serving |

Eat well and be active today and every day!

The benefits of eating well and being active include:

- Better overall health.
- Lower risk of disease.
- A healthy body weight.
- Feeling and looking better.
- More energy.
- Stronger muscles and bones.

Be active

To be active every day is a step towards better health and a healthy body weight.

Canada's Physical Activity Guide recommends building 30 to 60 minutes of moderate physical activity into daily life for adults and at least 90 minutes a day for children and youth. You don't have to do it all at once. Add it up in periods of at least 10 minutes at a time for adults and five minutes at a time for children and youth.

Start slowly and build up.

Eat well

Another important step towards better health and a healthy body weight is to follow *Canada's Food Guide* by:

- Eating the recommended amount and type of food each day.
- Limiting foods and beverages high in calories, fat, sugar or salt (sodium) such as cakes and pastries, chocolate and candies, cookies and granola bars, doughnuts and muffins, ice cream and frozen desserts, french fries, potato chips, nachos and other salty snacks, alcohol, fruit flavoured drinks, soft drinks, sports and energy drinks, and sweetened hot or cold drinks.

Read the label

- Compare the Nutrition Facts table on food labels to choose products that contain less fat, saturated fat, trans fat, sugar and sodium.
- Keep in mind that the calories and nutrients listed are for the amount of food found at the top of the Nutrition Facts table.

Nutrition Facts

| Per 0 mL (0 g) | | | |
|-------------------------|---------------|------------|--|
| Amount | % Daily Value | | |
| Calories 0 | | | |
| Fat 0 g | | 0 % | |
| Saturates 0 g | | 0 % | |
| + Trans 0 g | | | |
| Cholesterol 0 mg | | | |
| Sodium 0 mg | | 0 % | |
| Carbohydrate 0 g | | 0 % | |
| Fibre 0 g | | 0 % | |
| Sugars 0 g | | | |
| Protein 0 g | | | |
| Vitamin A 0 % | Vitamin C 0 % | | |
| Calcium 0 % | Iron 0 % | | |

Limit trans fat

When a Nutrition Facts table is not available, ask for nutrition information to choose foods lower in trans and saturated fats.

Take a step today...

- ✓ Have breakfast every day. It may help control your hunger later in the day.
- ✓ Walk wherever you can — get off the bus early, use the stairs.
- ✓ Benefit from eating vegetables and fruit at all meals and as snacks.
- ✓ Spend less time being inactive such as watching TV or playing computer games.
- ✓ Request nutrition information about menu items when eating out to help you make healthier choices.
- ✓ Enjoy eating with family and friends!
- ✓ Take time to eat and savour every bite!

For more information, interactive tools, or additional copies visit *Canada's Food Guide* on-line at:
www.healthcanada.gc.ca/foodguide

or contact:

Publications
Health Canada
Ottawa, Ontario K1A 0K9
E-Mail: publications@hc-sc.gc.ca
Tel.: 1-866-225-0709
Fax: (613) 941-5366
TTY: 1-800-267-1245

Également disponible en français sous le titre :
Bien manger avec le Guide alimentaire canadien

This publication can be made available on request on diskette, large print, audio-cassette and braille.



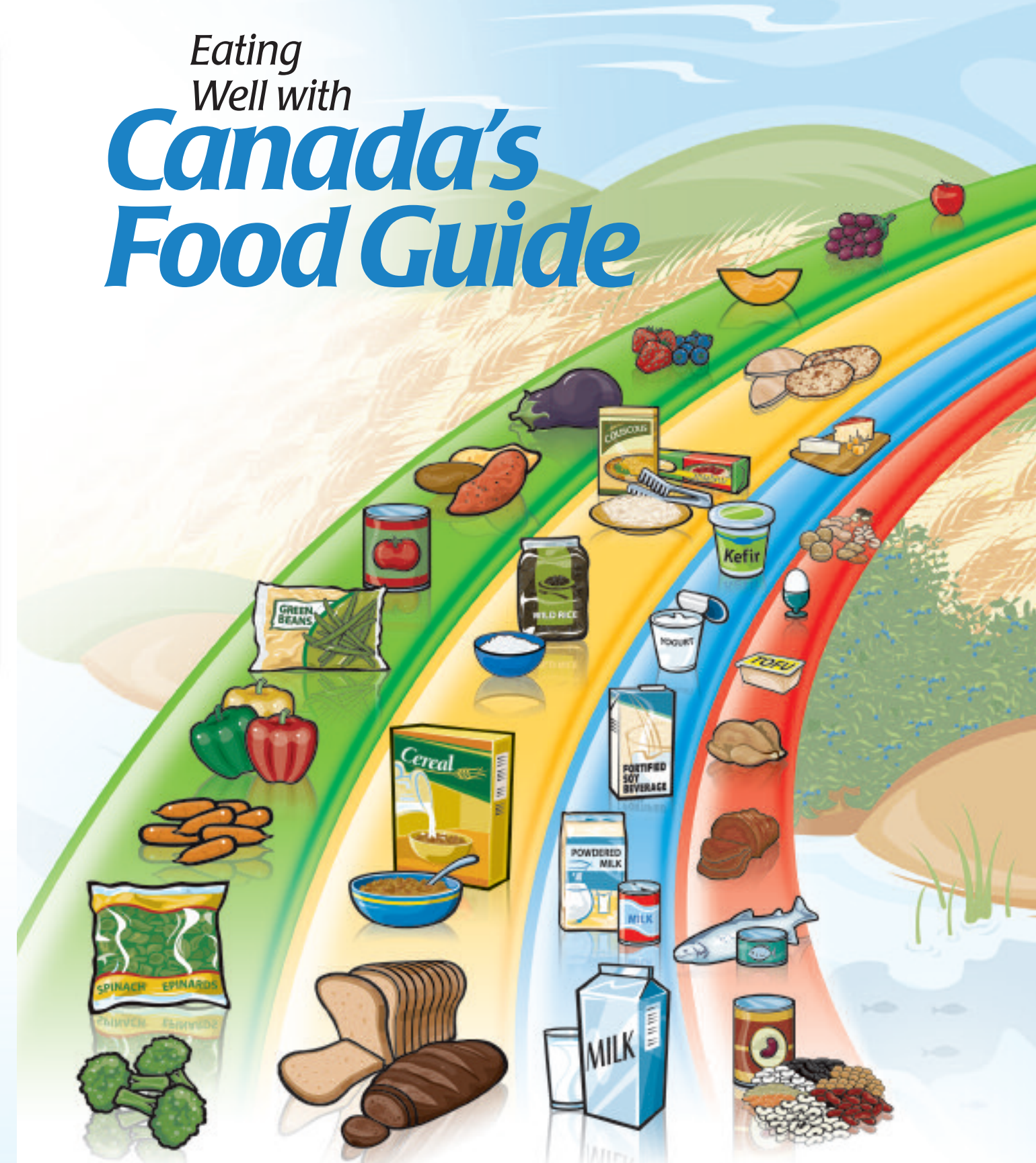
Health
Canada

Santé
Canada

Your health and
safety... our priority.

Votre santé et votre
sécurité... notre priorité.

Eating Well with Canada's Food Guide



Canada

Recommended Number of Food Guide Servings per Day

| Age in Years Sex | Children | | | Teens | | Adults | | | |
|-----------------------|----------------|-----|------|---------|-------|---------|-------|---------|-------|
| | 2-3 | 4-8 | 9-13 | 14-18 | | 19-50 | | 51+ | |
| | Girls and Boys | | | Females | Males | Females | Males | Females | Males |
| Vegetables and Fruit | 4 | 5 | 6 | 7 | 8 | 7-8 | 8-10 | 7 | 7 |
| Grain Products | 3 | 4 | 6 | 6 | 7 | 6-7 | 8 | 6 | 7 |
| Milk and Alternatives | 2 | 2 | 3-4 | 3-4 | 3-4 | 2 | 2 | 3 | 3 |
| Meat and Alternatives | 1 | 1 | 1-2 | 2 | 3 | 2 | 3 | 2 | 3 |

The chart above shows how many Food Guide Servings you need from each of the four food groups every day.

Having the amount and type of food recommended and following the tips in *Canada's Food Guide* will help:

- Meet your needs for vitamins, minerals and other nutrients.
- Reduce your risk of obesity, type 2 diabetes, heart disease, certain types of cancer and osteoporosis.
- Contribute to your overall health and vitality.

What is One Food Guide Serving?
Look at the examples below.



Fresh, frozen or canned vegetables
125 mL (½ cup)



Leafy vegetables
Cooked: 125 mL (½ cup)
Raw: 250 mL (1 cup)



Fresh, frozen or canned fruits
1 fruit or 125 mL (½ cup)



100% Juice
125 mL (½ cup)



Bread
1 slice (35 g)



Bagel
½ bagel (45 g)



Flat breads
½ pita or ½ tortilla (35 g)



Cooked rice, bulgur or quinoa
125 mL (½ cup)



Cereal
Cold: 30 g
Hot: 175 mL (¾ cup)



Cooked pasta or couscous
125 mL (½ cup)



Milk or powdered milk (reconstituted)
250 mL (1 cup)



Canned milk (evaporated)
125 mL (½ cup)



Fortified soy beverage
250 mL (1 cup)



Yogurt
175 g (¾ cup)



Kefir
175 g (¾ cup)



Cheese
50 g (1 ½ oz.)



Cooked fish, shellfish, poultry, lean meat
75 g (2 ½ oz.)/125 mL (½ cup)



Cooked legumes
175 mL (¾ cup)



Tofu
150 g or 175 mL (¾ cup)



Eggs
2 eggs



Peanut or nut butters
30 mL (2 Tbsp)



Shelled nuts and seeds
60 mL (¼ cup)

Make each Food Guide Serving count...
wherever you are – at home, at school, at work or when eating out!

- ▶ Eat at least one dark green and one orange vegetable each day.
 - Go for dark green vegetables such as broccoli, romaine lettuce and spinach.
 - Go for orange vegetables such as carrots, sweet potatoes and winter squash.
- ▶ Choose vegetables and fruit prepared with little or no added fat, sugar or salt.
 - Enjoy vegetables steamed, baked or stir-fried instead of deep-fried.
- ▶ Have vegetables and fruit more often than juice.

- ▶ Make at least half of your grain products whole grain each day.
 - Eat a variety of whole grains such as barley, brown rice, oats, quinoa and wild rice.
 - Enjoy whole grain breads, oatmeal or whole wheat pasta.
- ▶ Choose grain products that are lower in fat, sugar or salt.
 - Compare the Nutrition Facts table on labels to make wise choices.
 - Enjoy the true taste of grain products. When adding sauces or spreads, use small amounts.

- ▶ Drink skim, 1%, or 2% milk each day.
 - Have 500 mL (2 cups) of milk every day for adequate vitamin D.
 - Drink fortified soy beverages if you do not drink milk.
- ▶ Select lower fat milk alternatives.
 - Compare the Nutrition Facts table on yogurts or cheeses to make wise choices.

- ▶ Have meat alternatives such as beans, lentils and tofu often.
- ▶ Eat at least two Food Guide Servings of fish each week.*
 - Choose fish such as char, herring, mackerel, salmon, sardines and trout.
- ▶ Select lean meat and alternatives prepared with little or no added fat or salt.
 - Trim the visible fat from meats. Remove the skin on poultry.
 - Use cooking methods such as roasting, baking or poaching that require little or no added fat.
 - If you eat luncheon meats, sausages or prepackaged meats, choose those lower in salt (sodium) and fat.

Oils and Fats

- Include a small amount – 30 to 45 mL (2 to 3 Tbsp) – of unsaturated fat each day. This includes oil used for cooking, salad dressings, margarine and mayonnaise.
- Use vegetable oils such as canola, olive and soybean.
- Choose soft margarines that are low in saturated and trans fats.
- Limit butter, hard margarine, lard and shortening.

Enjoy a variety of foods from the four food groups.

Satisfy your thirst with water!

Drink water regularly. It's a calorie-free way to quench your thirst. Drink more water in hot weather or when you are very active.

* Health Canada provides advice for limiting exposure to mercury from certain types of fish. Refer to www.healthcanada.gc.ca for the latest information.