

Nutrition and Mental Health: Common Practice Questions

The purpose of the point of care reference (POCR) is to support health professionals providing care to patients with mental health conditions by providing answers to common practice questions and an overview of nutrition recommendations, strategies, and approaches.

Background

This resource was developed by Professional Education and Practice, Provincial Strategy, Nutrition Services and is based on scientific evidence and best practice. It was reviewed by members of the:

- Provincial Addictions & Mental Health Team
- Provincial Allied Health Professional Education and Practice Team
- Provincial Mental Health Support Line
- MNCY SCN
- Nutrition Services Eating Disorder Care Nutrition Practice Working Group

Frequently Asked Questions about Nutrition and Mental Health

- [What role can nutrition play in supporting patients with mental health conditions?](#)
- [What are the factors that may affect nutritional intake in populations with mental health conditions?](#)
- [How can I support patients with medication-related side effects?](#)
- [Is there evidence to support micronutrient supplementation in treating mental health conditions?](#)
- [Can the gut microbiome affect mental health?](#)
- [What resources are available to support patients with Household Food Insecurity?](#)
- [When is it recommended to refer to a dietitian?](#)

Note: For purposes of this POCR, the single term patient will be used to refer to clients, patients, and residents.

If you have questions about this POCR, please contact Nutrition_Resources@ahs.ca.

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What role can nutrition play in supporting my patients with mental health conditions?

Nutrition and mental health is a bidirectional relationship. Food can have an impact on our mental health^{1,2} and our mental health can also influence our food choices and access to nutritious foods.^{3,4} Nutrition-related interventions are an important component of treatment that should be available to individuals living with mental health conditions^{2,5} as an adjunct to support other medical, psychiatric, pharmacological and psychological treatments.^{6,7}

Nutrition-related interventions can help support patients with mental health conditions to:

- Improve their dietary intake and increase knowledge of the connection between nutrition and mental health.⁸
- Identify patients at risk of developing disordered eating patterns and risk of malnutrition.⁸
- Optimize medication effectiveness by supporting adequate nutritional intake.⁸
- Increase patient’s self-management of concurrent and comorbid health conditions.⁸
- Reduce nutrition-related side effects of psychiatric medications⁸
- Identify possible food insecurities and increase awareness of available resources.

Although many nutrition recommendations may apply broadly to various mental disorders, care must be tailored to meet the needs of your patient’s specific health conditions, mental status, financial situation, and lived experience.⁹

Table 1. Key Messages about Nutrition and Mental Health and Sample Phrasing to Use with Patients

Key Messages for Health Professionals	Sample Dialogue/Supports
Nutrition and mental health are a bidirectional relationship	
<ul style="list-style-type: none"> • Dietary factors can impact mental health, but mental health can also influence food choices and the way we eat.^{3,4} • The links between a mental health condition and nutrition status may be influenced by several factors, such as excessive or inadequate dietary intake, malnutrition, obesity, comorbidities, substance use, financial situation, and social isolation.^{2,8} • An individual’s beliefs about the quality of their food or diet may influence their sense of overall health and well-being.⁴ 	<ul style="list-style-type: none"> • “The same foods that we eat to make our bodies healthy, can also be good for our mental health.”¹ • “Eating well is one part of managing your (insert mental health condition), along with other treatments your healthcare provider may have suggested.”⁷ • “A healthy relationship with food can help decrease stress and shame around food and eating and improve our mood and self-esteem.”

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Key Messages for Health Professionals	Sample Dialogue/Supports
The same foods that support physical health, also support mental health	
<ul style="list-style-type: none"> Individuals with mental health conditions are at greater risk of developing other chronic health conditions, such as diabetes, obesity, and metabolic syndrome.¹ Nutrition recommendations for managing these conditions can also help in the management of mental health conditions.⁹ Patterns of eating that have been shown to have positive effects on mental health include foods high in vitamins, minerals, healthy fats, and fibre. The Mediterranean diet may be beneficial for improving symptoms of depression,^{4,9,10} in addition to possible comorbid cardiovascular and metabolic conditions.^{9,10} Antioxidant compounds found in foods have been shown to lower inflammation and may have a protective effect on the brain.^{2,7,11} 	<ul style="list-style-type: none"> “A well-balanced diet can boost mood and concentration and help maintain energy levels throughout the day.”⁷ “Foods that are unprocessed, diverse in vitamins and minerals, and include adequate fibre to support the digestive system may help to improve your mental health.”^{1,7} <p>For more information on the Mediterranean diet see ahs.ca/NutritionHandouts and search “Mediterranean”</p>
The brain requires more energy and nutrients than any other organ	
<ul style="list-style-type: none"> The brain operates at a very high metabolic rate, both in structure and function¹² and uses 20% or more of the body’s total energy and nutrient intake.^{7,13} A diet insufficient in energy, macro and micronutrients can impact cognition, memory, and mood and may worsen symptoms of mental health conditions.^{2,7-9} Diets that do not provide essential nutrients may decrease the effectiveness of medications used to treat mental health conditions, such as antidepressants, and may also increase side effects, such as weight gain.⁶ 	<ul style="list-style-type: none"> “Your brain uses at least 20% of the energy you eat every day.^{7,13} That is more than any other organ in the body.^{7,13} It needs fuel from carbohydrates, protein, fats, vitamins and minerals to function at its best.”⁷ “When our brains have the nutrition they need, we can cope more easily with stress, better manage our emotions, and improve our sleeping habits.”

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What are the factors that may affect nutritional intake in populations with mental health conditions?

Patients with mental health conditions may present with a variety of factors that can impact their nutritional status. Individuals with comorbid conditions may experience considerable challenges with food and eating. Recommendations and care should be tailored to meet the unique needs of the individual.

Mental health conditions can also significantly increase the risk of malnutrition.⁸ The following nutrition screening tools are recommended in the following care settings:

- **Acute inpatient** – [Canadian Nutrition Screening Tool \(CNST\)](#) or Malnutrition Screening Tool (MST)
- **Ambulatory care/primary care** – CNST or MST – for patients with a medical diagnosis or disease where there is a higher risk of malnutrition (e.g. inflammatory bowel disease (IBD), multiple sclerosis (MS), heart failure).
- **Home care and supportive living** – Resident Assessment Instrument (RAI) nutrition and dysphagia questions. Mini Nutritional Assessment – Short Form (MNA-SF) may also be used, as appropriate.
- **Long term care**- RAI nutrition and dysphagia questions and Mini Nutritional Assessment–Short Form (MNA-SF), as appropriate.

Nutrition supplements can be beneficial for individuals requiring additional sources of calories and protein. For more information on nutrition supplements, refer to ahs.ca/NutritionHandouts and search “nutrition supplements”.

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Table 2. Factors that may Affect Nutritional Intake in Populations with Mental Health Conditions and Suggested Nutritional Interventions⁸

Potential Implications for Nutritional Intake	Nutrition Recommendations/Supports
Attention deficit/hyperactivity disorder (ADHD)	
<ul style="list-style-type: none"> • Lack of interest in mealtimes and eating.⁸ • Hyperactivity during meals.⁸ • Impaired ability to retain and use new information after counselling.⁸ • Stimulant medications may cause decreased appetite. • Evidence has shown that sugar restriction and limiting food dye are not directly linked to improving ADHD symptoms, including hyperactivity¹⁴ • There is no conclusive evidence to support a relationship between ADHD and celiac disease (CD).¹⁴ 	<ul style="list-style-type: none"> • Some patients may benefit from minimizing distractions during meals. • Provide nutrition education in small, manageable amounts to help prevent the patient from feeling overwhelmed during appointments. • Invite the patient to take notes during sessions, to refer to later. • Use strategies to facilitate recall when providing patient education (e.g., repeat concepts, written recommendations) • For recommendations for managing decreased appetite due to stimulant medications, refer to Table 3. • Restricting sugar and limiting food dyes is unnecessary in controlling ADHD symptoms, including hyperactivity.¹⁴ • Routine screening for celiac disease and prescription of gluten-free diets is unnecessary in children and adults with ADHD.¹⁴
Anxiety disorders/panic attacks	
<ul style="list-style-type: none"> • Lack of interest in meal times and eating.⁸ • Increased energy output. • May use food to soothe anxiety leading to weight gain. • May isolate themselves to prevent panic attacks which may limit their diet. • May use sedating medication to ease symptoms, which decrease motivation to eat and/or promote sleep/drowsiness. 	<ul style="list-style-type: none"> • Eat small frequent meals. • Some individuals may require that one food be fed at a time. • Choose lower-calorie food options if overeating and weight gain are concerns. • Choose higher calorie food options if undereating and weight loss are concerns. • Limit caffeine intake, as it may worsen anxiety. • Use nutrition supplements as needed if additional calories and/or protein are required.

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Potential Implications for Nutritional Intake	Nutrition Recommendations/Supports
	<ul style="list-style-type: none"> • Use strategies to facilitate recall when providing patient education (e.g., repeat concepts and written recommendations). • Encourage eating behaviours that support a healthy relationship with food such as: <ul style="list-style-type: none"> ○ being aware of how and why you eat. ○ listening to your body's signals for hunger and fullness. <p>For more information about exploring your relationship with food, refer to ahs.ca/NutritionHandouts and search “relationship”.</p>
Autism spectrum disorder/sensory issues	
<ul style="list-style-type: none"> • Some individuals (especially children) may have problems with the texture and consistency of foods. 	<ul style="list-style-type: none"> • Assess chewing and swallowing (may require referral to a speech language pathologist [SLP]). • Follow texture-modified food and fluids recommendations, as needed. <p>For more information on pediatric feeding disorders, refer to PEAS Home and PEAS Clinical Practice Guide.</p>
Depression	
<ul style="list-style-type: none"> • Overeating, undereating, comfort eating. • Feelings of being unworthy of eating, lack of motivation, or poor energy levels. • Severe lack of appetite. • No desire to shop or prepare food. • Poor food hygiene presenting food safety risks. • Can exacerbate a sedentary lifestyle associated with subsequent weight gain. • Somatic delusions of not being able to eat or being physically too ill to eat. • Preferences for liquid and/or convenience foods; require less energy to prepare and eat 	<ul style="list-style-type: none"> • Appetite and weight may increase with medication. • Encourage a well-balanced diet with protein/calorie supplementation as needed. • Structure eating for mood stability throughout the day by providing regular meals and snacks. • Encourage socialization at mealtimes. • Utilize therapeutic approaches such as cognitive behaviour therapy and peer support that incorporate nutrition support as needed. <p>For more information about simplifying meals, see ahs.ca/NutritionHandouts and search “quick and easy”</p>

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Potential Implications for Nutritional Intake	Nutrition Recommendations/Supports
Eating disorders/disordered eating/poor body image	
<ul style="list-style-type: none"> Eating disorders and patterns of disordered eating can have serious medical complications that affect every organ of the body.¹⁵ May engage in dangerous behaviours to control weight (self-induced vomiting, laxative use, hyper-exercise, severe food restriction). May exhibit guilt or shame regarding food choices and eating, affecting intake. 	<ul style="list-style-type: none"> Engage in a multidisciplinary team approach: <ul style="list-style-type: none"> Recommend referral to a dietitian. Nutrition therapy focuses on interrupting symptoms, refeeding, correcting nutrient deficiencies and electrolyte imbalances, normalizing eating, restoring weight, and regulating hunger and satiety cues. Practice principles of eating disorder informed care: <ul style="list-style-type: none"> Be aware that anyone can have a history of eating disorder/disordered eating, regardless of age, gender or socioeconomic status. Use neutral language when describing food, exercise and bodies Promote behaviour goals vs weight-related goals <p>For more information and resources to support practice, refer to:</p> <ul style="list-style-type: none"> AHS Addictions and Mental Health Information for Health Professionals ahs.ca/NutritionGuidelinesHPNutrition (see “Mental Health”)
Memory or cognitive impairment	
<ul style="list-style-type: none"> Forgetting to eat. Forgetting that they ate a meal and overeat. Impaired ability to retain new information. 	<ul style="list-style-type: none"> Apply cognitive adaptive strategies (e.g., adapt the environment to provide reminders about meal preparation and mealtimes). Use strategies to facilitate recall when providing patient education (e.g., repeat concepts and written recommendations). Provide nutrition education in small, manageable amounts to help prevent the patient from feeling overwhelmed during appointments.

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Potential Implications for Nutritional Intake	Nutrition Recommendations/Supports
Obsessive-compulsive disorder (OCD)	
<ul style="list-style-type: none"> • May avoid certain foods or food groups. • May have rigid compulsions surrounding mealtimes/eating that can lead to decreased intake 	<ul style="list-style-type: none"> • Consume a well-balanced diet and small, frequent meals. • If additional calories and/or protein are required, use nutritional supplements as needed. • Psychotherapy with a mental health therapist addressing OCD thinking patterns may help patients broaden their diet.
Schizophrenia/psychotic symptoms	
<ul style="list-style-type: none"> • Delusions about food (e.g., food is poisoned) or hallucinations (e.g., person sees bugs on their food), causing refusal to eat. • Lack of interest in food or eating can lead to poor intake and weight loss. 	<ul style="list-style-type: none"> • Refrain from challenging delusional beliefs for patients, as much as possible, as it can take time for medication to become effective. • When appropriate, provide reassurance, for example, review standards of food safety for the facility. • If possible, use packaged foods or involve the person in food preparation to minimize suspicion. • Appetite and weight can increase with medication and stabilization of symptoms. • For information on managing increased appetite and weight gain due to antipsychotic medications, refer to Table 3. • Encourage a well-balanced diet with protein/calorie supplementation as needed. <ul style="list-style-type: none"> ◦ For more information about adding calories and protein to the diet, visit ahs.ca/NutritionHandouts and search “calories protein” and ahs.ca/MoreProteinRecipes

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Potential Implications for Nutritional Intake	Nutrition Recommendations/Supports
Self-harm behaviours	
<ul style="list-style-type: none"> Behaviours such as cutting, minor burns and skin picking can lead to skin breakdown. Can cause sores severe enough to require surgery 	<ul style="list-style-type: none"> Provide adequate energy for weight maintenance. Recommend including high protein foods at each meal. <ul style="list-style-type: none"> For more information about adding calories and protein to the diet, please see ahs.ca/NutritionHandouts and search “calories protein” and ahs.ca/MoreProteinRecipes. Consider using oral nutrition supplements and/or a multivitamin supplement with minerals if overall intake is poor. Refer to a dietitian for nutrition assessment for severe wounds or wounds that are not healing.
Substance use disorder/alcohol use disorder	
<ul style="list-style-type: none"> May have reduced food intake May have reduced nutrient absorption and/or increased excretion of nutrients.^{16,17} For example, Thiamine deficiency can occur with alcohol use disorder.^{18,19} Increased risk for malnutrition,¹⁷ reduced body mass, muscle mass and body fat.^{8,17} During withdrawal and recovery, some individuals may consume excess sugar, caffeine or high-energy foods to ease their cravings for alcohol/substances.⁸ Alcohol use can prevent the body from processing the amino acids in food responsible for the production of neurotransmitters which are essential for emotional stability, mental clarity, and general well-being.⁸ 	<ul style="list-style-type: none"> Consider using oral nutrition supplements and/or a multivitamin supplement with minerals if overall intake is poor.¹⁶ <ul style="list-style-type: none"> For guidance on nutritional supplements, including thiamine, during withdrawal management, refer to the Canadian Clinical Guideline for High-Risk Drinking and Alcohol Use Disorder For patients that may be at risk for malnutrition, recommend screening for malnutrition and refer to a dietitian for assessment. A varied diet that includes complex carbohydrates, quality protein sources (lean meat, fish, and vegetable proteins), fruit and vegetables, essential fats (oily fish, nuts), and adequate hydration can greatly benefit the recovery process.⁸

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How can I support patients with medication-related side effects?

Many medications that are commonly used to treat mental health conditions may have nutritionally related side effects. Antipsychotic-induced weight gain can be a major concern for individuals with mental health conditions and may contribute to poor drug compliance.²⁰ Stimulant medications prescribed to treat ADHD may contribute to a decreased appetite and inadequate nutritional intake.²¹

Table 3. Medication-related Related Side Effects and Nutrition Recommendations/Supports

Medication-Related Side Effects	Nutrition Recommendations/Supports
Increased hunger and weight gain	
<ul style="list-style-type: none"> Antipsychotic-induced weight gain has been shown to increase the risk of cardiovascular disease, impaired glucose metabolism, increased risk of metabolic syndrome, reduced quality of life, and poor drug compliance.²⁰ Nutrition interventions provided early in psychosis treatment can help lessen the side effects of medications and limit weight gain.^{8,16} 	<ul style="list-style-type: none"> Refrain from blaming the medication for side effects, while working to minimize the consequences.¹⁶ Support patients to share their concerns about weight gain with their healthcare provider to discuss any adjustments or changes to their medication that may be beneficial. Establish regular meal patterns with a variety of foods⁸ to help counteract appetite stimulation.¹⁶ Encourage adequate intake of fibre and protein to help achieve feelings of fullness and satiety.⁸ Provide education regarding low-calorie beverage options (i.e. water) to quench thirst.⁸ Relaxation techniques, such as mindful eating or breathing exercises,²² may help to slow the pace of eating at mealtimes⁸

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Medication-Related Side Effects	Nutrition Recommendations/Supports
Appetite suppression and weight loss	
<ul style="list-style-type: none"> Decreased appetite can be a barrier for patients to consume adequate nutrition and may lead to headaches, GI upset, and mood changes. Height and weight in children should be monitored for patients taking ADHD medications.²¹ 	<ul style="list-style-type: none"> Eat a well-balanced diet with protein/calorie supplementation as needed.⁸ Consider using oral nutrition supplements and/or a multivitamin supplement with minerals if overall intake is poor. <ul style="list-style-type: none"> For more information on nutritional supplements refer to ahs.ca/NutritionHandouts and search “nutrition supplements”. Try smaller portions at mealtimes and include frequent snacks throughout the day.²¹ <p>For individuals on stimulant medications:</p> <ul style="list-style-type: none"> Encourage adequate intake, however, refrain from pressuring individuals from eating as this may lead to greater reluctance around food. Maximize intake during periods when appetite suppression is lower (i.e. in the mornings before taking medication).²¹ Use alarms or reminders to cue individuals to eat.

Is there evidence to support micronutrient supplementation in treating mental health conditions?

The brain requires a variety of vitamins and minerals to produce neurotransmitters and support energy metabolism,⁷ therefore, no single nutrient is capable of optimizing brain function on its own.^{7,9} For some patients, however, micronutrient supplementation may help support other medical, pharmacological and psychological treatments.²³

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A well-balanced diet can meet nutrient needs if high-nutrient foods are selected and energy levels are sufficient,¹⁶ however, highly processed foods are often depleted of essential vitamins and minerals.²⁴ Individuals who consume a diet high in processed foods may be at risk for micronutrient deficiencies despite adequate caloric intake.²⁴ A complete vitamin and mineral supplement could potentially improve nutritional status for those with inadequate oral intake and/or dietary food choices, which may have a positive effect on mental health.¹⁶ Micronutrient supplementation can be a beneficial **addition** to a well-balanced diet, however, it is not a substitute for nutritious foods.⁷

Not all individuals will benefit from vitamin and mineral supplementation, therefore, it’s important to tailor recommendations to meet individual needs based on dietary patterns, financial situation, and nutritional assessment.

For more information on dietary sources of vitamins and minerals refer to ahs.ca/NutritionHandouts and search “vitamins minerals”.

Table 4. Summary of the Connections of Micronutrients to Mental Health and Examples of Dietary Sources

Role in Brain Function	Potential Associations with Mental Health Conditions	Examples of Dietary Sources
Folate/folic acid		
<ul style="list-style-type: none"> Plays a role in the production of neurotransmitters and the maintenance of myelin coating of neurons in the brain.²⁵ 	Deficiency may worsen symptoms of: ²⁶ <ul style="list-style-type: none"> Affective disorders Psychosis Cognitive impairment Dementia (including Alzheimer’s disease and vascular dementia) 	<ul style="list-style-type: none"> Beans and lentils Dark leafy vegetables²⁶ Citrus Fruits²⁶ Fortified pasta and grain products

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Role in Brain Function	Potential Associations with Mental Health Conditions	Examples of Dietary Sources
Omega 3 Fatty Acids		
<ul style="list-style-type: none"> Plays a key role in brain development and brain health across the lifespan.²⁷ May have neuroprotective benefits and lower inflammation of brain tissue.²⁷ Involved in the formation of cell membranes.²⁸ 	Deficiency may increase the risk of developing: ²⁸ <ul style="list-style-type: none"> Depression Bipolar disorder Schizophrenia Dementia ADHD 	<ul style="list-style-type: none"> Fatty fish: salmon, sardines, trout, herring Nuts and seeds: walnuts, flax, chia Oils: canola, soybean, walnut, flaxseed Foods fortified with omega 3: eggs, milk, yogurt, margarine and juice
Magnesium		
<ul style="list-style-type: none"> Critical for enzymatic, hormonal and neurotransmitter processes.²⁹ Plays an essential role in the production of cell membranes.³⁰ 	Deficiency may worsen symptoms of: <ul style="list-style-type: none"> Depression^{29,31} Anxiety³² ADHD³⁰ 	<ul style="list-style-type: none"> Salmon Nuts/ seeds nut butters Soy proteins
Thiamine		
<ul style="list-style-type: none"> Plays a key role in several essential brain functions²⁴ including brain glucose metabolism and neurotransmitter synthesis.³³ Thiamine supplementation is recommended for individuals experiencing alcohol withdrawal.^{17,19,34} 	Deficiency may increase the risk of developing: <ul style="list-style-type: none"> Wernicke-Korsakoff syndrome²⁶ Dementia Delerium Impaired memory and cognition²⁶ 	<ul style="list-style-type: none"> Pork Whole grains (oatmeal, wheat germ, cereals, oat bran) Soy proteins Sunflower seeds

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Role in Brain Function	Potential Associations with Mental Health Conditions	Examples of Dietary Sources
Vitamin B₁₂		
<ul style="list-style-type: none"> Plays a key role in brain development.²⁷ Plays a role in the production of neurotransmitters such as serotonin and dopamine.²⁷ 	Deficiency may worsen symptoms of: ³⁵ <ul style="list-style-type: none"> Depression Anxiety Psychosis Impaired memory and cognition²⁷ Dementia Delirium 	<ul style="list-style-type: none"> Fish/shellfish: salmon, sardines, trout, herring, tuna, oysters, mussels, crab Organ meats: liver, kidney Smaller amounts in animal meats: beef, pork, poultry Eggs Fortified cereals Vegan diets may require additional consideration to ensure requirements are met <ul style="list-style-type: none"> For more information on vegan/vegetarian diets refer to ahs.ca/NutritionHandouts and search “vegetarian”.
Vitamin D		
<ul style="list-style-type: none"> Plays a role in the production of neurotransmitters May have an antioxidant effect on brain tissue.³⁶ 	Deficiency may worsen symptoms of: <ul style="list-style-type: none"> Depression^{2,36} Seasonal affective disorder Schizophrenia² Anxiety³⁶ ADHD³⁰ 	<ul style="list-style-type: none"> Fish: salmon, sardines, trout, halibut Fortified foods: milk, yogurt, margarine

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Role in Brain Function	Potential Associations with Mental Health Conditions	Examples of Dietary Sources
Zinc		
<ul style="list-style-type: none"> • Critical for enzymatic, hormonal and neurotransmitter processes²⁹ • May help elevate levels of brain-derived neurotrophic factor (BDNF), which may have an impact on mood and emotions³⁷ 	Deficiency may worsen symptoms of: <ul style="list-style-type: none"> • Depression • Anxiety • Sleep quality distortion³⁸ 	Note: zinc absorption is higher in animal proteins compared to plant proteins <ul style="list-style-type: none"> • Meat: beef, liver, bison, venison, • Dairy products: cheese, eggs, yogurt • Beans and lentils: (baked beans, lentils, soybeans, chickpeas) • Nuts/seeds: cashews, peanuts, sunflower seeds • Fortified cereals and wheat germ

Can the gut microbiome affect mental health?

The human gut is home to trillions of beneficial organisms collectively referred to as “the gut microbiome.”^{9,39} It allows bidirectional communications between the brain and the gut through a variety of pathways.^{4,40} Although research on the gut microbiome is in its infancy,⁹ current evidence suggests it could play an important role in the prevention and treatment of several mental health disorders.⁴¹ The microbiome can be affected by several factors including genetics, environment, the use of antibiotics, and diet.⁹ Although there may be potentially significant differences in the composition of the gut microbiome among individuals,⁴¹ the same dietary recommendations that can support physical and mental health, may also support a healthy gut microbiome.

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Table 5. Strategies and Recommendations to Support a Healthy Gut Microbiome

Strategies to Support a Healthy Gut Microbiome	Sample Dialogue/Supports
Choose higher-fibre foods	
<ul style="list-style-type: none"> Fibre found in food encourages the growth of beneficial bacteria in the gut⁴⁰ and may help to suppress harmful ones.⁴¹ 	<ul style="list-style-type: none"> Include sources of dietary fibre such as: <ul style="list-style-type: none"> Vegetables and fruit Whole grain breads and cereals Beans, lentils and nuts “It’s important to drink enough fluid when eating a diet high in fibre. “Fluids” includes water and other liquids such as coffee, milk, tea, broth and soup.” <ul style="list-style-type: none"> Carry a filled water bottle to remind you to drink throughout the day Drink fluids with meals and snacks For more information on fibre see ahs.ca/NutritionHandouts and search “fibre”.
Limit highly processed foods	
<ul style="list-style-type: none"> Highly processed foods may alter the gut microbiota by reducing the diversity of microbes available.¹ Foods high in added sugar may have a negative effect on the microbiome and lead to inflammation of the gut lining^{1,42} Foods that are highly processed are often depleted of essential vitamins and minerals, necessary for the function of the gut microbiome.²⁴ 	<ul style="list-style-type: none"> “If you eat highly processed foods, try to eat them less often and/or in smaller amounts.”⁴³ Replace sugary drinks with water Plan meals and snacks to include: <ul style="list-style-type: none"> vegetables and fruit whole grain foods protein foods, including meats, dairy and vegetarian protein options
Include fermented foods	
<ul style="list-style-type: none"> Fermented foods can contain probiotics (live bacteria) to support the gut microbiome.^{9,42} 	<ul style="list-style-type: none"> Sources of fermented foods include: <ul style="list-style-type: none"> Dairy products: yogurt, kefir, aged cheeses Beverages: kombucha Soy products: tempeh, miso Fermented vegetables: pickles (not vinegar-based), sauerkraut, kimchi

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What resources are available to support patients with Household Food Insecurity?

Household food insecurity (HFI) is defined as “an inadequate or insecure access to food because of financial constraints”;⁴⁴ it impacts physical, mental and social well-being. Health professionals will encounter patients living in food-insecure households, due to the high prevalence of HFI among those accessing health care.⁴⁵

HFI is best addressed through income-based interventions.^{44,46,47} Those experiencing HFI have food preparation, budgeting, and cooking skills similar to the general population.⁴⁸ Interventions focused on food skills do not protect people from, nor improve HFI.⁴⁸ Emergency food programs (e.g. food banks) may provide temporary relief.⁴⁹ However, these programs do not solve HFI and are inappropriate and/or inaccessible for many patients.⁴⁹

Health professionals can offer better support if they are aware of when patients are worried about having enough money for food and are experiencing other challenges because of financial strain.^{50,51} Health professionals are encouraged to work with patients to develop interventions that are sensitive to financial strain.

Key steps for health professionals include:

- Learn about financial strain, how to screen patients for poverty, and the link between poverty and poorer health through the **Identifying Financial Strain and Addressing Financial Barriers to Health Care Modules**; available on MyLearningLink for AHS staff and on CLiC for Covenant Health staff.
- Review the [Nutrition Guideline: Household Food Insecurity](#) for additional information on how to support patients experiencing HFI.
- Assist patients in accessing available income supports. The provincial directory 211 (ab.211.ca) can be used to identify financial benefits, programs, and services.

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When is it recommended to refer patients to a dietitian?

Individuals who are at high risk of malnutrition or who have a medical condition that is impacted by nutrition should be referred to a dietitian. For more information on referrals to a dietitian and nutrition services available in Alberta visit:

- [Alberta Referral Directory](#) (search: nutrition counselling)
- Alberta Health Services [Nutrition Services](#) for programs and services offered by Zone, including [workshops and classes](#) facilitated by dietitians
- [811 HealthLink](#) for general nutrition questions by calling 811 and asking to talk to a dietitian, or visiting ahs.ca/811 to complete a self-referral form

References

1. Lane MM, Gamage E, Travica N, Dissanayaka T, Ashtree DN, Gauci S, et al. Ultra-Processed Food Consumption and Mental Health: A Systematic Review and Meta-Analysis of Observational Studies. *Nutrients*. 2022 Jun;14(13).
2. Grajek M, Krupa-Kotara K, Białek-Dratwa A, Sobczyk K, Grot M, Kowalski O, et al. Nutrition and mental health: A review of current knowledge about the impact of diet on mental health. *Front Nutr*. 2022;9:943998.
3. Sparling TM, Deeney M, Cheng B, Han X, Lier C, Lin Z, et al. Systematic evidence and gap map of research linking food security and nutrition to mental health. *Nat Commun [Internet]*. 2022;13(1):4608. Available from: <https://doi.org/10.1038/s41467-022-32116-3>
4. Firth J, Gangwisch JE, Borisini A, Wootton RE, Mayer EA. Food and mood: how do diet and nutrition affect mental wellbeing? *BMJ*. 2020 Jun;369:m2382.
5. Burrows T, Teasdale S, Rocks T, Whatnall M, Schindlmayr J, Plain J, et al. Effectiveness of dietary interventions in mental health treatment: A rapid review of reviews. *Nutr Diet*. 2022 Jul;79(3):279–90.
6. Mrozek W, Socha J, Sidorowicz K, Skrok A, Strytczyk A, Piątkowska-Chmiel I, et al. Pathogenesis and treatment of depression: Role of diet in prevention and therapy. *Nutrition*. 2023 Nov;115:112143.
7. Rucklidge JJ, Johnstone JM, Kaplan BJ. Nutrition Provides the Essential Foundation for Optimizing Mental Health. *Evidence-Based Pract Child Adolesc Ment Heal [Internet]*. 2021 Jan 2;6(1):131–54. Available from: <https://doi.org/10.1080/23794925.2021.1875342>
8. Davison K, Cairns J, Selly C, Ng E, Chandrasekera U, Sengmueller E, et al. The Role of Nutrition Care for Mental Health Conditions [Internet]. Toronto: Dietitians of Canada: Dietitians of Canada; 2012. Available from: www.dietitians.ca/mentalhealth
9. Dinan TG. *Nutritional psychiatry : a primer for clinicians*. 1st ed. Cambridge: Cambridge University Press; 2023.
10. Ventriglio A, Sancassiani F, Contu MP, Latorre M, Di Slavatore M, Fornaro M, et al. Mediterranean Diet and its Benefits on Health and Mental Health: A Literature Review. Vol. 16, *Clinical practice and epidemiology in mental health : CP & EMH*. United Arab Emirates; 2020. p. 156–64.

Nutrition and Mental Health: Common Practice Questions

11. Feng J, Zheng Y, Guo M, Ares I, Martínez M, Lopez-Torres B, et al. Oxidative stress, the blood-brain barrier and neurodegenerative diseases: The critical beneficial role of dietary antioxidants. *Acta Pharm Sin B*. 2023 Oct;13(10):3988–4024.
12. Logan AC, Jacka FN. Nutritional psychiatry research: an emerging discipline and its intersection with global urbanization, environmental challenges and the evolutionary mismatch. *J Physiol Anthropol*. 2014 Jul 24;33:22.
13. Magistretti PJ, Allaman I. A cellular perspective on brain energy metabolism and functional imaging. *Neuron*. 2015 May;86(4):883–901.
14. Dietitians of Canada. Mental Health Disorders - Attention Deficit Hyperactivity Disorder (ADHD) - Practice Questions. In: Practice-based Evidence in Nutrition [PEN]. (Access by subscription only) [Internet]. 2017. Available from: www.pennutrition.com
15. Academy for Eating Disorders. AED Report 2021 (4th Edition). Eating Disorders: A Guide to Medical Care. [Internet]. 2016. Available from: https://higherlogicdownload.s3.amazonaws.com/AEDWEB/27a3b69a-8aae-45b2-a04c-2a078d02145d/UploadedImages/Publications_Slider/2120_AED_Medical_Care_4th_Ed_FINAL.pdf
16. Academy of Nutrition and Dietetics. Nutrition Care Manual. Behavioral Health, Mood Disorders. (Access only by subscription) [Internet]. Available from: www.eatright.org
17. Dietitians of Canada. Alcohol. Key Practice Points. In: Practice-based Evidence in Nutrition [PEN]. (Access by subscription only). 2023; Available from: www.pennutrition.com
18. Bettendorff L. Chapter 10 - Thiamine [Internet]. Eleventh E. Marriott PB, Birt DF, Stallings VA, Yates AA, editors. Vol. 1, Present Knowledge in Nutrition: Basic Nutrition and Metabolism. Academic Press; 2020. 171–188 p. Available from: <http://dx.doi.org/10.1016/B978-0-323-66162-1.00010-X>
19. Long D, Long B, Koyfman A. The emergency medicine management of severe alcohol withdrawal. *Am J Emerg Med*. 2017 Jul;35(7):1005–11.
20. Dayabandara M, Hanwella R, Ratnatunga S, Seneviratne S, Suraweera C, de Silva VA. Antipsychotic-associated weight gain: Management strategies and impact on treatment adherence. *Neuropsychiatr Dis Treat*. 2017;13:2231–41.
21. CADDRA - Canadian ADHD Resource Alliance. Canadian ADHD Practice Guidelines, 4.1 Edition, Toronto ON; CADDRA. 2020.
22. Tapper K. Mindful eating: what we know so far. *Nutr Bull*. 2022 Jun;47(2):168–85.
23. Sarris J, Ravindran A, Yatham LN, Marx W, Rucklidge JJ, McIntyre RS, et al. Clinician guidelines for the treatment of psychiatric disorders with nutraceuticals and phytoceuticals: The World Federation of Societies of Biological Psychiatry (WFSBP) and Canadian Network for Mood and Anxiety Treatments (CANMAT) Taskforce. *World J Biol Psychiatry Off J World Fed Soc Biol Psychiatry*. 2022 Jul;23(6):424–55.
24. Dhir S, Tarasenko M, Napoli E, Giulivi C. Neurological, psychiatric, and biochemical aspects of thiamine deficiency in children and adults. *Front Psychiatry*. 2019;10(APR):1–15.
25. Liu H, Li W, Zhao S, Zhang X, Zhang M, Xiao Y, et al. Folic acid attenuates the effects of amyloid β oligomers on DNA methylation in neuronal cells. *Eur J Nutr*. 2016 Aug;55(5):1849–62.
26. Kennedy DO. B Vitamins and the Brain: Mechanisms, Dose and Efficacy--A Review. *Nutrients*. 2016 Jan;8(2):68.
27. Rathod R, Kale A, Joshi S. Novel insights into the effect of vitamin B₁₂ and omega-3 fatty acids on brain function. *J Biomed Sci*. 2016 Jan;23:17.
28. Lange KW. Omega-3 fatty acids and mental health. *Glob Heal J [Internet]*. 2020;4(1):18–30. Available from:

Nutrition and Mental Health: Common Practice Questions

<https://www.sciencedirect.com/science/article/pii/S241464472030004X>

29. Greenblatt JM, To W, Dimino J. Evidence-Based Research on the Role of Zinc and Magnesium Deficiencies in Depression. *Psychiatric Times* [Internet]. 2016;33(12). Available from: <https://www.psychiatrictimes.com/view/evidence-based-research-role-zinc-and-magnesium-deficiencies-depression>
30. Hemamy M, Pahlavani N, Amanollahi A, Islam SMS, McVicar J, Askari G, et al. The effect of vitamin D and magnesium supplementation on the mental health status of attention-deficit hyperactive children: a randomized controlled trial. *BMC Pediatr*. 2021 Apr;21(1):178.
31. Botturi A, Ciappolino V, Delvecchio G, Boscutti A, Viscardi B, Brambilla P. The Role and the Effect of Magnesium in Mental Disorders: A Systematic Review. *Nutrients*. 2020 Jun;12(6).
32. Boyle NB, Lawton C, Dye L. The Effects of Magnesium Supplementation on Subjective Anxiety and Stress-A Systematic Review. *Nutrients*. 2017 Apr;9(5).
33. Gibson GE, Hirsch JA, Fonzetti P, Jordan BD, Cirio RT, Elder J. Vitamin B1 (thiamine) and dementia. *Ann N Y Acad Sci*. 2016 Mar;1367(1):21–30.
34. Wood E, Bright J, Hsu K, Goel N, Ross JWG, Hanson A, et al. Canadian guideline for the clinical management of high-risk drinking and alcohol use disorder. *CMAJ* [Internet]. 2023;195(40):E1364--E1379. Available from: <https://www.cmaj.ca/content/195/40/E1364>
35. Sahu P, Thippeswamy H, Chaturvedi SK. Neuropsychiatric manifestations in vitamin B12 deficiency. *Vitam Horm*. 2022;119:457–70.
36. Akpınar Ş, Karadağ MG. Is Vitamin D Important in Anxiety or Depression? What Is the Truth? *Curr Nutr Rep* [Internet]. 2022;11(4):675–81. Available from: <https://doi.org/10.1007/s13668-022-00441-0>
37. Mlyniec K. Interaction between Zinc, GPR39, BDNF and Neuropeptides in Depression. *Curr Neuropharmacol*. 2021;19(11):2012–9.
38. Hajianfar H, Mollaghasemi N, Tavakoly R, Campbell MS, Mohtashamrad M, Arab A. The Association Between Dietary Zinc Intake and Health Status, Including Mental Health and Sleep Quality, Among Iranian Female Students. *Biol Trace Elem Res*. 2021 May;199(5):1754–61.
39. Van Ameringen M, Turna J, Patterson B, Pipe A, Mao RQ, Anglin R, et al. The gut microbiome in psychiatry: A primer for clinicians. *Depress Anxiety*. 2019 Nov;36(11):1004–25.
40. Butler MI, Mörkl S, Sandhu K V., Cryan JF, Dinan TG. The Gut Microbiome and Mental Health: What Should We Tell Our Patients?: Le microbiote Intestinal et la Santé Mentale : que Devrions-Nous dire à nos Patients? *Can J Psychiatry*. 2019;64(11):747–60.
41. Xiong R-G, Li J, Cheng J, Zhou D-D, Wu S-X, Huang S-Y, et al. The Role of Gut Microbiota in Anxiety, Depression, and Other Mental Disorders as Well as the Protective Effects of Dietary Components. *Nutrients*. 2023 Jul;15(14).
42. Canadian Digestive Health Foundation. 10 Ways to Strengthen Your Microbiome [Internet]. 2023. Available from: <https://cdhf.ca/en/10-ways-to-strengthen-your-microbiome/>
43. Government of Canada, Health Canada. Canada's Food Guide, Limit highly processed foods [Internet]. 2022. Available from: <https://food-guide.canada.ca/en/healthy-eating-recommendations/limit-highly-processed-foods/>
44. Tarasuk V, Mitchell A. Household food insecurity in Canada, 2017-18 [Internet]. Toronto: Research to identify policy options to reduce food insecurity (PROOF); 2020. Available from: <https://proof.utoronto.ca/>

Nutrition and Mental Health: Common Practice Questions

45. Men F, Gundersen C, Urquia ML, Tarasuk V. Food Insecurity Is Associated With Higher Health Care Use And Costs Among Canadian Adults. *Health Aff.* 2020 Aug 3;39(8):1377–85.
46. Alberta Health Services. Household food insecurity evidence review: Lived experience and strategy effectiveness. Calgary; 2020.
47. Ontario Dietitians in Public Health. Position statement and recommendations on responses to food insecurity [Internet]. 2020. Available from: odph.ca.
48. Huisken A, Orr SK, Tarasuk V. Adults' food skills and use of gardens are not associated with household food insecurity in Canada. *Can J Public Heal.* 2016;107(6):e526–32.
49. Loopstra R, Tarasuk V. The relationship between food banks and household food insecurity among low-income Toronto Families. *Can Public Policy.* 2012;38(4):497–514.
50. Andermann A. Taking action on the social determinants of health in clinical practice: A framework for health professionals. *CMAJ.* 2016 Dec 6;188(17–18):E474–83.
51. Sivakumar G, Chau B. Poverty: A clinical instrument for family physicians. *Univ West Ont Med J.* 2017 Dec 3;86(2):62–4.

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