

Nutrition and Addiction

Did you know...

- Millions of Canadians live with a substance use and/or gambling disorder
- Your mental health affects your nutrition and your nutrition can affect your mental health
- When you have an addiction, your need for good nutrition increases
- Long-term, heavy use of alcohol or drugs can
 - affect your gut's ability to absorb important nutrients
 - cause poor appetite, malnutrition and deficiencies
 - worsen cravings, which can lead you back to substance use
- Severe gambling problems can limit your ability to buy healthy foods

Does what you eat matter?

What you eat can make a difference to your physical and mental health. Food is medicine. A healthy diet can help you feel well and protect you from disease.

An unhealthy diet is linked with problems such as depression, anxiety and addiction. Diets that have a lot of processed fast foods and sugar shrink the area of the brain involved in learning, memory and mental health (called the hippocampus).

How can a Registered Dietitian (RD) help me?

If you talk to your family doctor about your nutrition, you can ask for a referral to see a Registered Dietitian (RD). RDs can help you create a plan to get the nutrients you need. Following the plan that you make with your RD can help:

- Improve your energy levels and concentration
- Manage gastrointestinal (GI) symptoms
- Prevent low blood sugar (which can feel like anxiety or withdrawal symptoms)
- Identify and correct nutritional deficiencies you may have (e.g., B vitamins, vitamin D, Iron, Magnesium)
- Manage nutrition-related side effects of medications (e.g., minimize weight gain, reduce GI symptoms)

What does a good diet look like?

A good diet is one that has a variety of healthy foods each day including fruits, vegetables, legumes, nuts, seeds, whole grains, healthy fats and lean proteins.

How close is your diet to the Mediterranean (Medi) style of eating?

One of the healthiest styles of eating is called the Mediterranean (Medi) style. Complete the Medi diet quiz below. Every 'yes' answer is 1 point (for a total of 12 points). The higher your score, the better your diet.

1. I have 4 Tbsp or more of olive oil each day _____
2. I sauté with olive oil and tomatoes to make homemade sauce two or more times a week _____
3. I eat at least 4 servings of vegetables each day (1 serving is ½ cup cooked or 1 cup raw) _____
4. I have 3 or more fruits (or 1.5 cups of fruit) each day _____
5. I eat nuts 3 or more times a week (1 serving is 30 g or 60 ml) _____
6. I have at least 3 or more servings of fish or seafood each week? (1 serving is 3.5-5 oz) _____
7. I have legumes 3 or more times each week? (1 serving is 2/3 cup) _____
8. I eat chicken or turkey more often than beef, sausage or hamburger _____
9. I have less than 1 serving of meat daily (less than 150 g per day) _____
10. I eat 1 Tbsp or less of butter each day _____
11. I eat commercial cookies, cakes or donuts less than 2 times per week? _____
12. I have less than 1 can (355 ml or 12 oz) of sugar-sweetened beverages each day _____

Have a look at your score. Can you pick one or two areas to work on to improve your diet? _____

What are the key nutrients for brain health?

There are several nutrients that are important for your brain to function at its best. These include:

- Protein (amino acids e.g.. tryptophan, tyrosine, glutamine)
- Carbohydrates (low glycemic)
- Fats (omega-3, monounsaturated fatty acids)
- Vitamins (Vitamins B1, B6, B9, B12, C, D, E),
- Minerals (Iron, Magnesium, Zinc)
- Fluids

Tips to Optimize Brain Health, Prevent Relapse and Promote Recovery

1. Eat well to build brain neurotransmitters

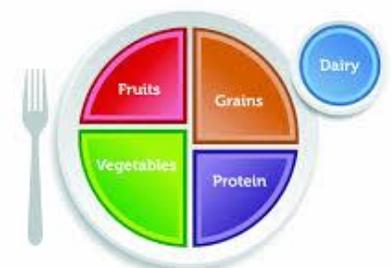
It is important to eat well because food provides the nutrients to build neurotransmitters (chemical messengers in the brain) like serotonin, dopamine and GABA. You need these neurotransmitters to:

- Regulate your mood
- Concentrate
- Reduce irritability
- Feel enthusiastic and joyful
- Have interest in daily activities
- Get a good night's sleep

Heavy alcohol and drug use causes a reduction of dopamine in the brain. This will affect your memory, ability to feel pleasure, motivation, mood, attention, sleep, thinking and cravings. Eating balanced meals (filled with vitamins, proteins and carbohydrates) can help replenish dopamine in the brain. Try the 'plate planner' (see below).

2. Use the *plate planner*

Half your plate should be colourful vegetables; ¼ of your plate should be lean protein (the size of your palm) and ¼ of your plate (size of your fist) should be whole grains such as sweet potato, quinoa, pasta or brown rice. Add a fruit and a yoghurt and now you have over 50 vitamins and minerals.



3. Drink fluids, especially water

In recovery, it is common to crave sweet drinks and caffeine because sugar and caffeine stimulate the pleasure center of

the brain. Juice, pop, flavored coffees and sugary drinks have up to 10 tsp of sugar per serving as well as caffeine which can cause problems for you, including:

- A sharp rise in blood sugars, followed by a fast drop. This can lead to low blood sugar (hypoglycemia), which can feel like withdrawal
- Worsen cravings for the addictive behaviour
- Fill you up and displace other foods and lower the nutritional quality of your diet

4. Eat to avoid feeling “hangry”

Going too long without eating can make you feel drained, irritable and anxious (‘hangry’). Have a healthy meal every 4 to 5 hours. Remember, food is fuel for your body and your brain. Not eating enough carbohydrate foods (e.g., fruit, milk, yoghurt, whole grains) can also make you feel cranky and constipated and make it harder for you to think, work or exercise.

5. Take 1000 IU of Vitamin D3

In Canada, most people don’t get enough Vitamin D3. A lack of Vitamin D3 can lead to a worsening of mental health problems such as depression and bi-polar disorder. Vitamin D3 can also protect against the reduction of dopamine that happens in addiction and may reduce cravings.

6. Talk to your RD about supplements

Vitamins B1, B6, B9, B12 are common deficiencies in addiction. A healthy diet can help but you might also need supplements like a multivitamin, mineral supplement, or a B100 complex daily. Consider 100 mg of thiamin (Vitamin B1) daily for alcohol use disorder. Meet with your dietitian or doctor to find out what supplements are right for you.

7. Boost your B Vitamins

- Vitamin B12 is found in animal products like milk, yoghurt, cheese, lean chicken and fish. If you are a vegetarian, eating very little animal protein, or are taking certain medications (e.g., metformin, birth control pills) that may interact with vitamin B12, speak with your doctor or RD to complete bloodwork to ensure you are not low in B12.
- Vitamin B9 (folate) is found in leafy green vegetables, broccoli, brussels sprouts, green peas, legumes (peas, beans and lentils), and citrus fruits. Enjoy vegetables and fruits – fresh, frozen or canned - each day.

- Vitamin B1 (thiamin) is found in a variety of foods from fortified breakfast cereals, whole grains, nuts and peas. B1 is essential for your nervous system and is easily effected by alcohol. Choose whole grains that have 4 g or more of fiber – this will keep you feeling full for longer. Whole grains with fiber are also good for your gut health because they provide prebiotics (food to build a healthy gut microbiome).

8. **Eat probiotics**

Probiotics in fermented foods (e.g., yoghurt, kefir, sauerkraut) can improve gas, bloating, constipation, diarrhea and mood. Add 2 tsp of ground flaxseed or 3 tbsp of Kellogg's All Bran Buds with psyllium fiber into your daily yoghurt for a prebiotic/probiotic healthy combination.

9. **Limit deep-fried foods**

How you cook your food can make a difference to your brain health. For example, pan-fried fish cooked for short time in olive oil or canola oil is a healthier choice than fish from the deep fryer where oil is used again and again and cooked to high temperatures producing unhealthy fats called "trans fat". Limit deep-fried foods to once-a-month as a treat.

10. **Get your Omega 3s**

Omega 3 fats are fats that reduce inflammation and lower blood pressure and may lower your risk of heart disease. Choose fish rich in omega 3 fats such as EPA (e-pentanoic acid) and DHA (dexa-hexanoic acid), such as salmon, trout, herring or sardines. Having fish meals twice a week is associated with lower rates of depression. Wonder about fish oil supplements? Talk with your RD to learn about what kind of EPA and DHA supplements to choose for heart and mental health.

11. **Get your Magnesium**

Magnesium is an important mineral for sleep and the production of neurotransmitters. It can be hard to get magnesium in your daily diet, but it can be found in pumpkin seeds, peanut butter, avocados, and bananas. Magnesium can be affected by medications you take and the use of alcohol. Talk with your RD about how to get more magnesium in your diet through food or supplements. Take magnesium supplements in the evening. Avoid magnesium oxide as this can worsen diarrhea.

12. Tips to reduce cravings

Going too long without eating, nutrient deficiencies, malnutrition and eating sugary foods can make your cravings worse. Eat regular meals that include protein and whole grains at each meal to raise serotonin and dopamine levels and help to manage cravings. Meet with your doctor or RD to assess and correct nutritional deficiencies.

Follow the rule of 3's:

- ✓ 3 meals a day
- ✓ with at least 3 food groups at each meal and
- ✓ going no longer than 3-4 hours between meals or snack to avoid feeling “hangry” or triggering a craving.

What you eat can make a difference to your physical and mental health but sometimes barriers get in the way. RDs are there to help. Meet with your family doctor or RD to review your nutritional intake and create a plan to ensure you are getting the nutrients you need for optimal brain health and recovery.

Better diet = Better mental health

References

Butler, N., Quigg, Z., Bates, R., Sayle, M., & Ewart, H. (2020). Gambling with Your Health: Associations Between Gambling Problem Severity and Health Risk Behaviours, Health and Wellbeing. *Journal of gambling studies*, 36(2), 527–538.

Jacka, F. N., O'Neil, A., Opie, R., Itsiopoulos, C., Cotton, S., Mohebbi, M., Castle, D., Dash, S., Mihalopoulos, C., Chatterton, M. L., Brazionis, L., Dean, O. M., Hodge, A. M., & Berk, M. (2017). A randomised controlled trial of dietary improvement for adults with major depression (the 'SMILES' trial). *BMC medicine*, 15(1), 23.

Jeynes KD, Gibson EL. The importance of nutrition in aiding recovery from substance use disorders: A review. *Drug Alcohol Depend.* 2017 Oct 1;179:229-239.

Mahboub N, Rizk R, Karavetian M, de Vries N, Nutritional status and eating habits of people who use drugs and/or are undergoing treatment for recovery: a narrative review, *Nutrition Reviews*, Volume 79, Issue 6, June 2021, Pages 627–635, <https://doi.org/10.1093/nutrit/nuaa095>

Marx W, Moseley G, Berk M, Jacka F. (2017). Nutritional Psychiatry: The Present State of the Evidence, *Proceedings of Nutrition Society*, 76:427-436.

Worley J. (2017). The Role of Pleasure Neurobiology and Dopamine in Mental Health Disorders, *J Psychosocial Nursing*, 55(9):17-21.

Ventriglio, A., Sancassiani, F., Contu, M. P., Latorre, M., Di Slavatore, M., Fornaro, M., & Bhugra, D. (2020). Mediterranean Diet and its Benefits on Health and Mental Health: A Literature Review. *Clinical practice and epidemiology in mental health. CP & EMH*, 16(Suppl-1), 156–164.