



# Tapping Into the Connection Between Nutrition and Mental Health

by | **Lisa Spriet**

It's not just a coincidence that the quality of Canadian diets has decreased over the past few decades. The author examines the connection between poor diet and mental illness, chronic disease development, indirect expenses associated with absenteeism and presenteeism, and what organizations may do to address this important source of expense.

**W**e have been hearing this for years now—Mental health matters. We know this on a personal level as well as on an institutional level, where we see health services related to mental health, such as psychology, on the rise.

However, many of us are not fully aware of the true statistics and impact of mental health.

- In any given year, one in five Canadians experiences a mental illness.<sup>1</sup>
- By the time Canadians reach 40 years of age, one in two have—or have had—a mental illness.<sup>2</sup>

These statistics are based on pre-COVID times. Over the last two years, there has been a significant decline in overall mental health as well as an increase in mental illness.

Good mental health is NOT simply the absence of disease; good mental health is essential to having a productive life, inside and outside of the office.

Poor mental health is a top cost driver for employers, not only as direct costs in terms of medical and drug expenses and reduced productivity but also as indirect costs related to poor mental health in the workplace such as absenteeism, presenteeism and challenges with recruitment and retention. Employers have a lot to worry about, from cyber protection to workforce shortages. Just as mental health has declined over the past few decades, so has the quality of Canadian diets, and this is more than just a coincidence.

### Takeaways

- Diabetes and cardiovascular disease are two examples of chronic diseases that are greatly influenced by nutrition. There is a bidirectional relationship between chronic disease and mental health, where those who have a chronic disease are more at risk of having poor mental health, and those with poor mental health are at greater risk of having a chronic disease.
- Research shows that a healthy diet significantly reduces the risk of depression, anxiety and mood disorders as well as cognitive decline and dementia.
- Whole fruits and vegetables, complex carbohydrates, pulses and legumes, amino acids and proteins as well as meals high in omega-3 and vitamins D and B, probiotics and prebiotics have a proven effect on mental health.
- Employers can support healthy eating in the workplace by requesting healthy options when catering, providing healthy snacks in the break room, engaging employees in healthy initiatives and offering direct counselling with dietitians.

### Diet and Health Care Costs

Nutrition plays a large role in the development of chronic diseases, such as diabetes and cardiovascular disease. There is a bidirectional relationship between chronic disease and mental health, where those who have a chronic disease are more at risk of having poor mental health, and those with poor mental health are at greater risk of having a chronic disease.

Next to smoking, poor diet is the leading modifiable risk factor that contributes to development of chronic disease. Not meeting Canadian Food Guide recommendations is estimated to be responsible for \$15.8 billion/year in direct and indirect costs.<sup>3</sup> In a public health care system, this money is ultimately paid by individuals and organizations. Employees who have a chronic disease, including depression, cost more due to increased drug and medical plan usage as well as decreased production and greater use of sick days. Unmanaged chronic disease is the biggest cost driver for benefit plans.

### Nutrition and Mental Health

Research shows that a healthy diet significantly reduces the risk of depression, anxiety and mood disorders as well as cognitive decline and dementia.<sup>4</sup>

There are many ways the foods people eat affect the way they think. Here are a few examples:

- Nutrients play a vital role in building the structure of the brain and nervous system
- Food provides energy to neurons, or brain cells
- Various components of foods also act as communication molecules and contribute to the formation of hormones such as dopamine and serotonin, which play major roles in various mental health disorders
- Metabolites from gut bacteria communicate with the nervous system to influence the way people think and feel.

Good nutrition throughout a person's life cycle can have an enormous impact on various areas of mental health. A focus on nutrition can:

- Reduce risk and severity of depression
- Aid in the treatment of depressive disorders
- Reduce anxiety and stress
- Improve mood and satisfaction with life.

Dietitian-led nutrition counselling is an integral part of treatment for various mental health illnesses, including eating disorders, addictions and depression.<sup>5</sup>

## Good Nutrition and Eating Well for Mental Health

Following is the foundation of foods and nutrients that have a proven effect on mental health:

### Whole vegetables and fruits

Whole vegetables and fruits provide carbohydrates, which provide the brain with energy but also help in the creation and release of “happiness chemicals” or neurotransmitters such as serotonin. Whole fruits and vegetables also supply antioxidants, such as vitamin C and polyphenols, which have been shown to help with both brain health and mood.

How much of this food group should a person eat in a day? Most people should aim for at least 400 grams or five servings per day minimum and do their best to “eat the rainbow” by consuming vegetables and fruits of various colours throughout the day.

### 1. Complex carbohydrates

These include foods such as whole grains (oatmeal, farro, whole grain bread) as well as root vegetables (sweet potatoes, squash, potatoes) and legumes and pulses (chickpeas, lentils). They provide “slow release” energy to the brain as well as B vitamins for energy production. They also help to keep blood sugar levels stable, which helps to moderate cortisol (stress hormone) levels. As discussed further below, they also provide fiber to support digestive health.

### 2. Pulses and legumes

As mentioned, these foods provide complex carbohydrates, but they are also rich in protein or amino acids, B vitamins, antioxidants and fiber for

## Eating Well for Mental Health

In order to make maintainable changes to what they eat, it's important for people to think in terms of habits versus a “diet.” Healthy eating should start with achievable and maintainable small goals and then build from there.

### Here is an example of a day of eating well for mental health:

Breakfast:

- Natural yogurt (*probiotics, vitamin D, protein*) topped with
- Blueberries (*fiber, fruit*)
- Oats (*complex carbohydrates, prebiotics, B vitamins*) and
- Walnuts and chia seeds (*omega-3 fats, prebiotics*)

*Shift workers should consider packing breakfast the night before, along with lunch and perhaps dinner. Making a batch of “overnight oats” to be used throughout the week can help with this effort.*

Lunch:

- Whole grain bread with added psyllium (*whole grains, prebiotics, B vitamins*), with
- Sliced roasted turkey (*protein, B vitamins*)
- Avocado, spinach and tomato (*vegetables and fruits, prebiotics*)
- Sliced vegetables and apple on the side (*vegetables and fruits, prebiotics*)

*Workers who don't have a scheduled lunch break should consider speaking up to make one! They can also consider packing “snackable” lunches like whole grain crackers with low-fat cheese, veggies and hummus, and sliced fruit.*

Snack:

- Smoothie
  - Plain kefir (*probiotics, vitamin D*)
  - Chia seeds (*prebiotics, omega-3 fats*)
  - Avocado, spinach and strawberries (*fruit*)

*Employers that offer snacks at the workplace could consider adding a smoothie bar or offering yogurt with fruit and veggies and hummus as snack options. They should avoid muffins, cookies and other processed snacks.*

Dinner:

- Baked salmon (*protein, omega-3 fats, vitamin D*)
- Quinoa and lentil pilaf (*whole grains, protein, B vitamins*)
- Steamed asparagus (*vegetables, prebiotics*)

*Those used to ordering dinner from work or at home may want to delete the delivery app and do some prep on their days off. Employers that provide dinner should make sure a salad is available.*

While there is no one food that has to be totally eliminated, research does show that a high intake of certain foods does have negative effects on mental health. These foods include:

- Red and processed meats
- Foods and beverages with added sugars, such as baked goods, soda, ice cream, etc.
- Refined grains such as white bread or pasta, cookies, muffins, etc.
- Trans fats such as those found in fried foods and processed foods
- Refined oils used in processed foods.

digestive support. There is research specifically looking at legume consumption and depression risk, where consuming a half cup or more per day significantly reduces risk of depression.

### 3. Amino acids and proteins

Proteins are composed of amino acids, and when people eat protein-containing foods, such as yogurt, eggs, poultry, tofu and legumes, their bodies digest proteins into amino acids. Amino acids themselves are the backbone of many neurotransmitters, including serotonin and melatonin, important for happiness and sleep, respectively. When it comes to protein, it's important to consume a source of protein with every meal and most snacks.

### 4. High omega-3 foods

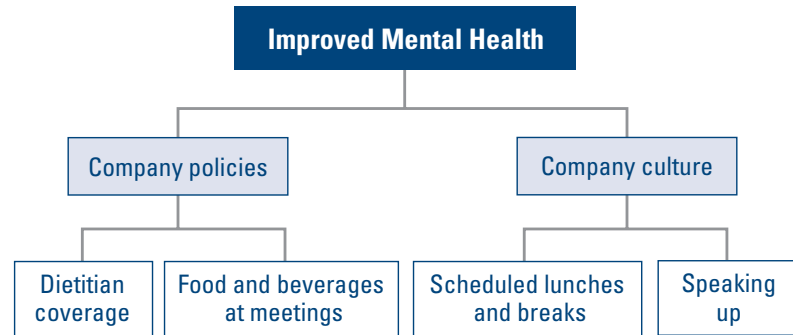
Omega-3 is a type of dietary fat and includes the very important fatty acids docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA). These fats help in brain tissue development as well as in maintaining healthy cell membranes, which are essential for neural (brain) communication, learning, mood and memory. They may also reduce inflammation, which has been shown to prevent depression. In fact, supplementing with omega-3 fats has been shown to be helpful in treating depression! While research is ongoing, it is currently recommended to increase sources of omega-3 fats, including fatty fish, "omega-3" eggs, flax seeds and walnuts.

### 5. High vitamin D foods

Vitamin D is a unique vitamin in many ways, including that it acts as a hormone that communicates with cells, such as those of the nervous system and brain. Many may be familiar with

## FIGURE

### How Do I Make All This Work at Work?



the well-established role of vitamin D in seasonal affective disorder (SAD), but it also plays an important role in depression and Alzheimer's disease. The amount of vitamin D required for the prevention and treatment of mental illnesses varies from person to person, but research generally shows that at least 400-2000 IU per day may be required. Where do we get vitamin D from? With adequate sun exposure, humans can synthesize vitamin D on their own; however, in Canada, between October and May, UV levels are not powerful enough for Canadians to make vitamin D. Other sources include fortified dairy products, fatty fish and eggs; however, most people do need to supplement with vitamin D in order to achieve adequate levels.

### 6. B Vitamins

This includes a group of vitamins that play a role in everything from energy production to neurotransmitter production, such as dopamine production. B vitamins have a positive effect on memory and mood, and studies

have shown that folate and B12 may make antidepressants more effective. Specific B vitamins that have a positive effect on mental health include B-6, found in poultry, fish, eggs, soya, milk and potatoes; folate, found in leafy greens, chickpeas, lentils, asparagus, chicken liver and fortified cereals; B-12, found in meat, salmon, cod, eggs, cheese, some nutritional yeast and fortified foods; and choline, found in liver, egg yolks, soy, chicken, mushrooms and wheat germ.

### 7. Probiotics and prebiotics

A complex communication system exists between the gut (or digestive tract) and the brain, including hormones, neurotransmitters and gut microbial metabolites, which contribute to brain function and mood.

Probiotics are healthy bacteria from food (e.g., yogurt, kefir and kimchi), and supplements have been shown to help in improving mood and depressive symptoms. Prebiotics from vegetables, whole grains, nuts and seeds, and legumes help to feed probiotics, ensur-

ing they stay strong and healthy. Both supplementing with specific strains of probiotics and consuming probiotic-rich foods have been shown to have a beneficial effect on various psychiatric diseases, and a lack of healthy gut bacteria has been shown to increase the risk of depression. It is believed that part of the beneficial effect of consuming complex carbohydrates, vegetables and fruit, and legumes on mental health is that the fiber in these foods acts as a prebiotic to support healthy gut bacteria.

### Supporting Healthy Eating in the Workplace

This is a simple question with complicated answers, specifically as there is no one way but rather many ways we can support healthy eating for mental health, and a multiprong approach is needed.

The figure represents a multilevel approach that can lead to healthier eating and improved mental health. Employers can consider the following steps to encourage healthy eating.

**Both offer and make use of dietitian coverage.** Registered dietitians (RDs) are trained in helping others improve their nutrition and, similar to services by other health care practitioners, many plans include coverage for RD services. Dietitians can provide direct counselling to employees on how to eat to improve mental health as well as to prevent or manage chronic diseases, lose weight, improve energy and more. In addition to offering coverage, employers may need to look for ways to motivate and support employees to make use of benefits. Ideas include “benefits spotlights” to highlight services, as well as giving employees time during work hours to engage in this counselling. Data supports that healthy eating reduces overall benefit costs and improves productivity.

**Engage employees in healthy initiatives** such as friendly competitions, with meaningful prizes for achieving health goals. Ideas include tracking water intake with a fun app or focusing on consuming a set amount of fruits and vegetables daily.

**Change the food and beverages offered at meetings or in the workplace.** Instead of processed baked goods, offer fresh fruit and yogurt. When offering catering, include a salad bar. Eventually, the goal can be to create company policies regarding foods available at work. Schools in Ontario must abide by a similar policy regarding foods offered to children—Why can’t adults do the same?

## BIO

**Lisa Spriet, M.Sc., RD**, is a registered dietitian and co-owner of NutriProCan, a company of registered dietitians. Throughout her undergraduate and postgraduate studies at Western University and the University of Guelph, Spriet studied biochemistry and genetics, nutraceutical sciences, and nutrition and dietetics. At the same time, she began her career in health and fitness, building a successful personal training business. She proceeded to work in clinics, gyms and biotechnology and to teach nutrition sciences at the Brescia University College. Passionate about driving social change toward nutrition and building her own signature programs, Spriet became one of the founders of Nutrition Professionals of Canada in 2015, now operating as NutriProCan. Lisa is a lecturer, speaker, and coach for individuals and group programs, and she works with businesses and organizations developing nutrition programming.



**Make and take scheduled nutrition and physical activity breaks during the day.** Block off meeting times in your schedule so that others can’t book over your lunch break. Even a five-minute walk around the block in the afternoon can increase feelings of happiness and decrease stress. As a leader in your organization, practice what you preach, and make company policies that promote healthy eating and physical activity. Invite others out for a walk at lunch or to eat in the park, which can help to create a company culture that fosters healthy habits.

**Speak up.** Whether this may be to request other healthy options in the break room, that a meeting ends five minutes early to go get a breath of fresh air, or that you are currently suffering from or feel at risk of poor mental health, create the culture of speaking up.

## Conclusion

Research shows that multifactorial approaches to addressing mental health and nutrition are both effective and

can offer a cost savings. However, more research is needed, and employers can take part in data collection to help in the evaluation of programs.<sup>6</sup> Creating sustainable eating habits can be difficult.<sup>7</sup> Small achievable goals instead of drastic changes are an essential part of making permanent dietary modifications. Taking a lifestyle approach to healthy eating versus a “diet” approach is essential to seeing mental health benefits. ☺

## Endnotes

1. [www.camh.ca/en/driving-change/the-crisis-is-real/mental-health-statistics](http://www.camh.ca/en/driving-change/the-crisis-is-real/mental-health-statistics).
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