



EGGS: A CORNERSTONE OF A HEALTHY DIET AND A HEALTHIER CANADA

Nutrition is the bedrock of a healthy society. A high-quality, balanced diet positively affects people throughout life: from ensuring growth for babies and new mothers, to early childhood development, to long-term bone health, lower risks of many diseases and health conditions, and ensuring that older adults are able to be more active and engaged in their communities. What we eat matters.

The challenge: Unhealthy foods are taking a heavy toll on Canadians

Many Canadians aren't eating the nutritious food that they need to stay healthy. Lifestyle and market forces are crowding out good foods with packaged and processed low-quality offerings that erode health. These trends have real consequences, most notably when we look at obesity, which is a key indicator as it is driven by nutrition and connected to a range of other health outcomes.

According to Obesity Canada, obesity rates have tripled since the 1980s, and have not declined in the last decade, despite widespread public awareness and a wealth of nutritional information. Today, 1 in 4 Canadian adults and nearly 1 in 7 Canadian children are obese. Without a major course correction, another generation of Canadians will suffer a major, preventable chronic disease that puts them at risk for a host of serious health conditions:

- Type 2 diabetes
- Hypertension
- Heart disease
- Stroke
- Arthritis
- Cancers

The costs created by these increased risks is staggering. The Public Health Agency of Canada has estimated annual direct healthcare costs caused by obesity to be \$7 billion, a number projected to rise. Even more important is the damage to the social and economic well-being of millions of individual Canadians: stigma, low self-esteem, depression, fewer employment opportunities, and an increased cost of living.

Eggs: An important part of the solution

Healthier eating and the many related health and social issues are a complex problem. Canada's egg sector produces a nutritious, affordable, homegrown solution already accessible to consumers across the country. Making eggs a more prominent and regular part of diets can help:

- Fight obesity and associated diseases especially among children
- Avoid super-processed foods
- Reduce and avoid unnecessary healthcare costs
- Build a stronger aging population, with more independent living, through bone health and lean muscle retention
- Promote neonatal development
- Increase consumption of an affordable, high-quality protein

Lifestyle

The pace of life in Canada has accelerated significantly in the last decades. More and more Canadians are "always on"—constantly connected to work, school, and other activities. Juggling a large number of activities necessitates less time for meal planning and preparation, and more meals eaten on-the-go. That, in turn, means more fast food, more packaged products, more restaurants, and eating just to get us through to the finish line of each day.



At the same time that we are busier than ever, we are also more sedentary. Many of our lives revolve around desks and driving, and do not include adequate levels of activity. While an increase in working from home may lead to healthier home cooking for some, many people's lives are even more hectic today, balancing caring for families and working at all hours. Convenience culture will remain a go-to for a large number of consumers, and therefore encouraging convenient, healthy options is a vital part of achieving public health goals.

Marketplace

The food marketplace has transformed, with a dizzying array of products and foods available across the country. While all of this choice and innovation is generally a positive development for consumers, this has included a vast expansion of ultra-processed foods (defined by Canada's Food Guide as things like sugary drinks, processed deli meats, frozen entrees, ice cream, bakery products) that provide a significant amount of calories and almost no nutrition. These foods provide a cheap and easy quick fix, but when they become the basis of diets the health consequences are dire.

These lifestyle and marketplace changes are working together to completely invert our food culture. From 1976 to 2003, Canadians consumed 18% more calories and the increase was accounted for by oils, soft drinks, and refined wheat flour found in calorie-rich convenience foods. In 2015, ultra-processed foods and drinks accounted for almost half of the total daily calories consumed by Canadian adults. Ultra-processed foods aren't just occasional treats, they are a major part of our diet.

The impact of ultra-processed foods is even more pronounced amongst some segments of our population. According to a University of Montreal study commissioned by the Heart and Stroke Foundation, consumption of ultra-processed foods is alarmingly high especially among younger people, those with less formal education, people in rural communities, and Indigenous peoples. These groups are amongst the hardest hit by increased risks of obesity, diabetes, high blood pressure, and more. From that study, ultra-processed foods account for 46.8% of calories consumed by Canadian adults.

Making a difference with eggs

Helping Canadians eat better and live healthier can feel like an uphill battle, in light of the many challenges we face as a society. However, there is a simple and accessible food item that can make a huge difference: eggs. Eggs are a whole, unprocessed protein food available across the country, which provide key nutrients and serve as the bedrock of a healthy diet. Their nutritional components and their qualities make them a smart and sustainable choice for everyone. Here is why:

Key nutrient: Protein

Protein is the foundation of any diet, and the building block of every cell in the body. We need protein to fuel growth, repair cells, build and maintain muscle mass, and more. There is a reason that Canada's Food Guide calls for a quarter of our diet to consist of protein: it is essential. While proteins are found in a variety of animal and plant-based sources, not all protein sources are equal.

First, proteins consist of various amino acids, but only complete proteins—like eggs—contain all nine essential amino acids in each serving. Many other sources contain only some, and are therefore incomplete. A healthy diet consists of not just getting enough protein, but getting all essential amino acids in adequate amounts.

Second, protein sources can be “bundled” with other, unwanted elements. For example, certain meats may be high in protein, but also come with significant sources of saturated fat. Eggs are a complete, clean protein that also provide significant sources of other essential nutrients.

Simply put, eggs are an excellent source of complete, unprocessed protein. A serving of two large eggs provides 13 grams of high-quality protein.

Benefits of protein

Fighting obesity. Protein consumption is linked to satiety. What does this mean? People who eat more protein feel fuller for longer, and are therefore less inclined to overeat—especially less satiating ultra-processed snack foods. Many people, especially young people, skip breakfast and then overconsume later in the day. Egg-based protein-rich breakfasts can help break these patterns and lead to healthier eating throughout the day.





Stronger aging population. As people age, they typically consume less food overall, and less protein. However, protein deficiency can lead to increased risk of sarcopenia—the loss of skeletal muscle mass and function. According to the Canadian Frailty Network, sarcopenia is linked to a number of adverse health outcomes: increased risk of falls, fractures and functional dependence (relying on another to assist with activities of daily living). It can also lead to longer hospital stays, a need for home care, and/or assisted living situations. For people eating less overall, the quality and composition of protein matters even more, making the protein efficiency of eggs all the more valuable.

Consistent protein throughout the day. Most adults get enough protein overall, but the bulk of this protein tends to be consumed at the evening meal. Studies show that distributing protein over the course of the day is better for maintaining muscle and keeping blood sugar levels stable. Many foods consumed earlier in the day, such as cereal, bread, and muffins, while convenient, tend to be higher in refined carbohydrates and lower in protein. Eggs have the advantage of being a complete protein source that can be eaten at any time. On the go, at home, alone or paired with other foods, the protein found in eggs can be consumed at any meal and as a snack.

Key nutrient: Choline

According to the American Medical Association, choline is an essential nutrient required by humans for optimal cognitive development in infants, to prevent neural tube defects, and support liver health. A limited amount of choline is produced by the liver, but not enough to meet daily demand, the balance of which must be sourced through diet. Research suggests that many Canadians—especially pregnant and nursing women—do not consume enough choline. In fact, a study showed that only 23% of pregnant Canadian women and 10% of lactating mothers met the recommended intakes.

Additionally, few prenatal supplements in Canada contain this essential nutrient that is so important for pregnant and nursing mothers. One of the best and most convenient sources of choline is the egg. A serving of two large eggs provides 410 mg choline, equaling 75% of the daily recommended value of choline.

Benefits of choline

Early childhood development. Choline plays an important role in promoting cognitive development in children. Some studies have shown that women who consumed enough choline during pregnancy saw decreased risks of neural tube defects in their infants.

Moreover, young children whose mothers consumed adequate amounts of choline during pregnancy also displayed elevated information processing speeds. Eggs, as the best available source of choline, play a key role in the development of children.

Healthy liver, brain and muscle function. In addition to childhood cognitive development, choline is valuable for all adults. Current research suggests that inadequate choline intake can have detrimental effects on liver and muscle function in healthy adults. Moreover, some studies suggest that adequate choline intake throughout adult life may improve cognitive function later in life. Choline is important for everyone, at every stage of life.

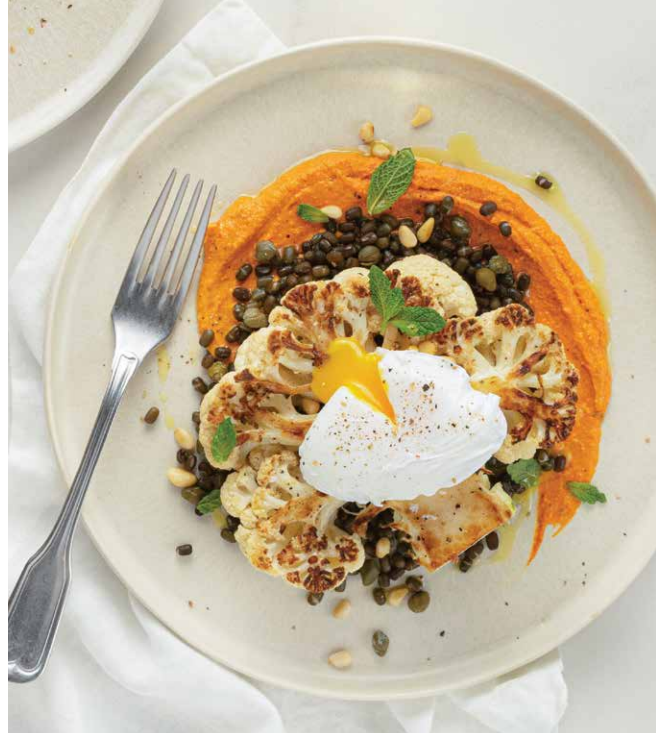
Key nutrient: Vitamin D

Vitamin D is a critical nutrient that helps to build stronger bones, improve muscle function, and may have a protective effect against many chronic illnesses including cancers, autoimmune diseases like multiple sclerosis, rheumatoid arthritis, type 2 diabetes, cardiovascular disease, and more. Vitamin D is produced principally when the sun's rays interact with our skin. For Canadians, especially in the North, sunshine is in short supply for large portions of the year. According to Osteoporosis Canada, eggs are one of the only foods that provide a natural source of vitamin D.

Benefits of vitamin D

Stronger bones. Vitamin D builds strong bones by increasing the absorption of calcium. Statistics Canada has found that 32% of Canadians are below the vitamin D blood concentration level sufficient for healthy bones. Bone health is especially important for older Canadians, as skeletal weakness and falls can significantly reduce independence and quality of life, and increase healthcare costs for the elderly. Eggs—with 1.5 micrograms per two large eggs—are one of the only foods that naturally provide vitamin D.

Indigenous and Northern health. Vitamin D deficiency is particularly pronounced in Northern Canada and within Indigenous populations. For example, the highest incidence rate of rickets—a bone disorder that can be caused by vitamin D deficiency—is found in the Northwest Territories and Nunavut. Similarly,



Indigenous communities with high incidences of vitamin D deficiency have an associated high prevalence of cavities in children. Increased egg consumption can help address vitamin D deficiencies, delivering stronger health outcomes when it comes to these preventable diseases.

How to eat healthier with fresh, nutritious eggs

Eggs are an excellent source of protein. Two large eggs provide 13 grams of high-quality protein. Just as importantly, the protein in eggs isn't accompanied by the deep frying, breading, sodium, and other additives that can transform some protein sources into nutritional risks.

Eggs are accessible. Eggs are produced and sold across Canada, and are among the most accessible foods we have. You can walk into a grocery or convenience store anywhere in the country and find eggs at any time of the year. You can also get eggs in many different restaurants at all times of day.

Eggs are affordable. Eggs make high-quality protein affordable in Canada. For less than the cost of a latte, you can enjoy the nutrition found in eggs at multiple meals. There are many protein sources out there; however, in terms of dollar per gram of complete protein, none are as affordable as eggs. During times when grocery bills are increasing and the Canadian economy is facing an economic downturn, Canadians can count on the affordability of eggs.

Eggs are convenient. Eggs fit into any lifestyle, can be eaten on-the-go, and can be added to a wide range of foods across an array of different cuisines. From enjoying a hard-boiled egg for lunch to adding an egg to a bowl of ramen, the options for enhancing and boosting the protein content of any meal with eggs are endless.

Eggs are adaptable. Eggs are a first food, easily eaten and digested by young children, and follow people through their lives. Even as we age, and require softer and more easily digestible foods, eggs are a perfect fit.

Eggs are the cornerstone of Canada's domestic food supply. Eggs are a homegrown food, produced across the country, which contributes to the vital security of our domestic food supply. Through thick and thin, worldwide pandemics, global trade disruption, and more, Canadians can always put made-in-Canada eggs on the table. Moreover, those eggs are produced in accordance with world-class quality and safety standards.

Eggs are sustainable. Eggs are the lowest impact animal protein and their environmental footprint is comparable to some plant-based protein sources. As Canadians look for food options that are produced responsibly, eating eggs can help make our diets more sustainable. Eggs are among the top choices of sustainable protein, with low water usage, a small carbon footprint, and low land use requirements. And because eggs are produced in all ten provinces and in the Northwest Territories, transportation is already efficient.

Did you know?

Decades ago, in the 1980s, it was believed that dietary cholesterol increased blood cholesterol and the risk of heart disease. With the benefit of four decades of research—including many huge studies and meta-analyses—we now have a much better understanding of cholesterol and how it works:

- Eating eggs daily has no negative effect on heart health
- The body is able to self-regulate cholesterol levels, thus minimizing the impact of dietary cholesterol on blood cholesterol levels
- Genetics, weight, diet, and other lifestyle habits all play a role, much more than specific foods or single nutrients
- Guidance from Health Canada and the Canadian Cardiovascular Society focuses on healthy dietary patterns as the key to heart health, rather than arbitrarily limiting dietary cholesterol for healthy adults



Eggs are a critical part of a healthy diet, and are safe to eat, including for people looking to manage their cholesterol levels.



Eggs every day

Canada's egg farmers have adopted an ambitious goal: to make Canada the world leader in per capita egg consumption. We believe that the many positive nutritional benefits offered by eggs will help us all to live healthier lives. Making eggs a bigger part of an everyday diet is a simple, affordable choice that can have huge implications in:

- Fighting obesity, especially amongst children
- Helping people—especially rural, remote, and economically disadvantaged Canadians—avoid super-processed foods
- Reducing and avoiding unnecessary healthcare costs
- Supporting an aging population in healthier, more independent living through bone health and lean muscle retention

- Promoting neonatal development
- Making sure that everyone in Canada has access to the benefits of affordable, high-quality protein

What Canadians eat is extremely important, and has a far-reaching effect on a range of health outcomes, particularly for key segments of Canada's population. The cost of unhealthy eating is enormous, both in dollars but more importantly in terms of the well-being of Canadians as a result of lost opportunities and adverse outcomes for preventable diseases caused by or associated with poor nutrition. **As federal and provincial governments consider new or enhanced policies to tackle these challenges and issues, eggs have an important role to play in promoting good health through balanced and nutritious diets. Together we can deliver a healthier Canada—and we are up to the challenge.**



Bibliography and further reading on egg nutrition and diets

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