

SANTÉ QUÉBEC

Nutrition in Québec:

From theory to practice



Québec 

Foreword

The considerable influence of our diet on our health is an acknowledged fact. In recent years, The Policy on Health and Well-Being ¹ and the advice and recommendations on nutrition provided by a wide variety of official bodies have all moved toward a consensus: “The health and well-being of individuals ... require a well nourished population.” ²

Good nutrition is a crucial factor in the prevention of a large number of health problems such as obesity, osteoporosis, diabetes, cardiovascular disease and various cancers. The Programme québécois de lutte contre le cancer, published in 1998, stresses the fact that nutrition is the second most important modifiable cause of cancer in industrialized countries, after smoking.³ But nutrition is not only important in prevention; its benefits contribute to everyday well-being too. Good nutrition can really lead to better health and a better quality of life.

This action guide is intended for workers and decision makers in the health and social services system, the education system, and bio-food sector and community services throughout Québec. This practical tool is easy to consult and highlights the findings of the Enquête québécoise sur la nutrition⁴ and the recommendations drawn from it to help adults in Québec improve their eating habits. It endeavours to compile all the messages about nutrition we are trying to send, and makes concrete proposals for taking immediate action in all areas of life in Québec.



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Are Quebecers eating better?

Yes, we are eating better, but still not well enough, according to the report of the Enquête québécoise sur la nutrition.⁴ This report describes the changes in our eating habits and the quality of our diet, and explains modern trends. Our eating habits have improved considerably in the past 20 years, but there is still room for progress from several standpoints. The following three tables illustrate the current situation and highlight the problem areas.

■ *More carbohydrates, less fats*

Table 1 underscores the disproportion between the amount of energy obtained from fats, proteins, carbohydrates and alcohol in the diet of Quebecers and the amount recommended by nutritionists in Canada.⁵ We are eating less fat, but there is still too much in our diet, particularly saturated, or animal, fat. And we are still not eating enough carbohydrates. It is recommended that 55% of our energy come from carbohydrates,⁵ but, on average, not even 50% of the calorie intake of men or women is in the form of carbohydrates.

TABLE 1
PERCENTAGE OF ENERGY PROVIDED BY MACRONUTRIENTS

Macronutrients	Current situation in various population groups	Ideal situation
	(% of energy)*	(% of energy)
Carbohydrates	46% to 51%	55%
Proteins	16% to 17%	15%
Fats	32% to 35%	30%
Alcohol	0.3% to 4%	Under 5%

* The percentage of energy refers to the estimated averages for the different age groups of the adult population.

Source: SANTÉ QUÉBEC, L. Bertrand (under the direction of). *Les Québécoises et les Québécois mangent-ils mieux ? Rapport de l'enquête québécoise sur la nutrition, 1990*, Montréal, ministère de la Santé et des Services sociaux, gouvernement du Québec, 1995, 317 pp.

■ **Different priorities for different groups**

Table 2 provides information on the vulnerabilities of each population group and its dietary priorities. An examination of the data for men and women in different age groups reveals that in addition to increasing their carbohydrate intake and cutting back on their fat intake, many must also bring their intake of folacin, calcium and iron up to the recommended dietary allowance (RDA).

TABLE 2
NUTRITIONAL PRIORITIES OF DIFFERENT AGE GROUPS

MEN		WOMEN	
AGE	PRIORITY	AGE	PRIORITY
18-74 years	Increase calcium intake ¹	18-74 years	Increase calcium intake ^{1,3}
	Decrease consumption of fat ²		Increase fiber intake ^{5,9}
	Increase fiber intake ⁹		
50 years or over	Increase calcium intake ³	18-34 years	Decrease consumption of fat ²
		18-49 years	Increase iron intake ^{3,4}
		65-74 years	Increase zinc intake ⁶
			Increase energy intake ⁶
Men and women in all age groups (except men between 18-34 years)	Increase folacin intake ⁷		
Men and women (all age groups)	Increase the intake of energy in the form of carbohydrates to at least 55% ⁸		

Source: SANTÉ QUÉBEC, L. Bertrand (under the direction of). *Les Québécoises et les Québécois mangent-ils mieux ? Rapport de l'enquête québécoise sur la nutrition, 1990*, Montréal, ministère de la Santé et des Services sociaux, gouvernement du Québec, 1995, 317 pp.

1. *Median values for calcium intake are lower than the RDA for women in all age groups; the percentile values indicate low calcium intakes for at least 50% of men aged 35 or over and for at least 25% of men between the ages of 18 and 34 (p. 291).*
2. *Over 45% of men and women between the ages of 18 and 34 and close to 40% of men between the ages of 35 and 64 derive over 35% of their calories from fats (p. 293).*
3. *In addition, the average calcium intake of people aged 50 or over is below the recommended quantity, as is the iron intake for women of childbearing age (p. 96).*
4. *Low quantities of iron draw attention to women of childbearing age (18-49) (p. 291).*
5. *These women (18-49) also have less fiber in their diets than other groups (p. 291).*
6. *Zinc and folacin intakes are marginal among older women (65-74), again because of a low energy intake (p. 96).*
7. *Median values for folacin intake are below the recommended quantities in all population groups except men between the ages of 18 and 34 (p. 291).*
8. *Sixty-five percent of adults do not obtain 50% of their calories from carbohydrates, and 88% of the diets studied in 1990 did not supply 55% of energy as carbohydrates in keeping with the recommendations (p. 293).*
9. *Table 7.13: Average fiber intake (g) in the Québec population by sex and age (p. 270).*

■ **Food groups to promote**

Table 3 highlights the food choices to be promoted as priorities among the public. A quick examination of the changes suggested in each group of *Canada's Food Guide to Healthy Eating* shows that a large number of people should be eating more cereal products and that all adults in Québec would do well to include more vegetables, fruits and dairy products, particularly milk and yogurt, in their daily menu. These three food groups should be given a much larger place in our health messages.

TABLE 3
IMPROVEMENTS TO BE MADE TO THE EATING HABITS OF QUEBECERS (EQN, 1990)

Food groups of <i>Canada's Food Guide to Healthy Eating</i>		18-34 years		35-49 years		50-64 years		65-74 years	
		Men	Women	Men	Women	Men	Women	Men	Women
Grain products			↑		↑*		↑*		↑**
5 to 12 servings per day									
Vegetables and fruit		↑*	↑**	↑*	↑**	↑*	↑*	↑	↑*
5 to 10 servings per day									
Milk products		↑	↑**	↑**	↑***	↑***	↑***	↑***	↑***
Adults: 2 to 4 servings per day									
Pregnant and breast-feeding women:									
3 to 4 servings per day									
Meat and alternatives		↑		↑			↑*		↑*
2 to 3 servings per day									

Legend

- ↑: Intake of this food group must be increased. In this segment of the population, intake does not exceed minimum recommended amounts. In addition, 45% to 49% of the diets analysed did not include minimum servings.
- ↑*: Intake of this food group must be increased. In this segment of the population, intake does not exceed minimum recommended amounts. In addition, 50% to 60% of the diets analysed did not include minimum servings.
- ↑**: Intake of this food group must be increased. In this segment of the population, intake does not equal minimum recommended amounts and over 60% of the diets analysed did not include minimum servings.
- ↑***: Intake of this food group must be increased. In this segment of the population, intake does not equal minimum recommended amounts and over 75% of the diets analysed did not include minimum servings.

Source: SANTÉ QUÉBEC, L. Bertrand (under the direction of). *Les Québécoises et les Québécois mangent-ils mieux ? Rapport de l'enquête québécoise sur la nutrition, 1990*, Montréal, ministère de la Santé et des Services sociaux, gouvernement du Québec, 1995, 317 pp.

■ ***New messages to be delivered***

Our nutrition messages must therefore endeavour to promote a balanced diet in addition to encouraging people to cut back on fats. They must continue to remind people of the importance of reducing their fat intake while encouraging them to increase the carbohydrates and fiber in their diet. By eating foods rich in carbohydrates, such as whole-grain cereal products, legumes, fruit and vegetables, people can improve the nutritional quality of their diet substantially.

Dietary Fiber: a clearly under-represented element

Dietary fiber is that part of plant material that our digestive system cannot fully break down. Fiber is plant material by definition and is found in varying proportions in fruit, vegetables, bread, cereals, particularly whole-grain cereals, legumes, nuts and seeds. It is present in various forms: cellulose, lignin, hemicellulose, pectin, gum and mucilage (see glossary). Our food is made up of different kinds of dietary fiber.

■ *How does fiber work?*

- Since its texture forces us to chew more, fiber fosters the addition of saliva to the food we ingest, thus aiding digestion.
- In our stomach, fiber absorbs water and acquires volume, provoking a feeling of fullness, even when we have not taken in many calories.
- Swollen with water, fiber reaches the intestines and acts as a cleaning agent, thus helping prevent constipation. Waste material spends less time in the large intestine, and this reduces the risk of colon cancer.
- Some water-soluble types of fiber (pectin, gum, mucilage) act like a sponge and absorb cholesterol along the way, thus reducing the amount of cholesterol in the blood.

■ *How much fiber do we eat?*

Since the 1971 survey,⁴ the consumption of dietary fiber has increased slightly, from 13 to 16 grams a day. However, in its most recent recommendations, Health Canada⁵ advocates a gradual increase in the quantity of fiber in our diet and a number of experts go so far as to say that a balanced diet should provide about 25 to 30 grams of fiber a day.

Obviously, we are still not eating enough fiber. Women between the ages of 18 and 34, in particular, do not have nearly enough fiber in their diet. On average, 77% of women eat fewer than 15 grams of fiber a day. Moreover, 41% of men between the ages of 65 and 74 have too little fiber in their diet.

■ ***How can we increase our fiber intake?***

We can easily fulfil the dietary recommendations for fiber by making small changes to our daily menu. The following example (comparative table of menus) provides a good illustration of this. By choosing whole-grain cereals and breads for breakfast, and multi-grain rolls at other meals, by eating brown rice or wild rice instead of white rice once in a while, preferring romaine lettuce to iceberg lettuce, adding dried fruit to our yogurt, eating potatoes in their skins at supper and serving graham biscuits with our fruit-based desserts, we can more than double the amount of fiber we eat during the day. Substantial amounts of additional fiber can also be found in other nutritious foods, such as legumes, seeds, nuts, vegetables and fruits.

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FIBER ON THE MENU

Menu	Fiber (g)	fiber-rich menu	Fiber (g)
Breakfast			
125 ml (½ cup) of fresh orange juice	0.2 g	1 orange	2.4 g
250 ml (1 cup) of corn flakes	0.8 g	2 large shredded wheat biscuits	6.6 g
125 ml (½ cup) of 2% milk	---	125 ml (½ cup) of 2% milk	---
1 slice of toasted white bread	0.4 g	1 slice of whole wheat toast	2.7 g
15 ml (1 tbsp.) of creamy peanut butter	0.9 g	15 ml (1 tbsp.) chunky peanut butter	1.1 g
Café au lait	---	Café au lait	---
Sub-total:	2.3 g	Sub-total:	12.8 g
Lunch			
250 ml (1 cup) of tomato juice	1.7 g	125 ml (½ cup) of cocktail carrots	1.9 g
Chicken rice salad	0.8 g	Waldorf chicken salad:	4.9 g
• 90 g (3 oz) of chicken		• 90 g (3 oz) of chicken	
• 250 ml (1 cup) of chopped iceberg lettuce		• 250 ml (1 cup) of chopped romaine lettuce	
• 125 ml (½ cup) of white rice		• ½ unpeeled apple, in cubes	
• salad dressing		• 125 ml (½ cup) of grapes	
		• 15 ml (1 tbsp.) of chopped walnuts	
		• 125 ml (½ cup) of brown rice	
		• salad dressing	
125 ml (½ cup) of vanilla yogurt	---	125 ml (½ cup) of vanilla yogurt with	
		4 chopped, dried apricot halves	1.0 g
Sub-total:	2.5 g	Sub-total:	7.8 g
Snack			
1 kiwi	2.6 g	1 kiwi	2.6 g
Sub-total:	2.6 g	Sub-total:	2.6 g
Supper			
200 ml (¾ cup) of cream of leek soup	2.6 g	200 ml (¾ cup) of cream of pear and leek soup	3.1 g
1 crusty roll	1.0 g	1 multi-grain roll	2.0 g
90 g (3 oz) of broiled salmon	---	90 g (3 oz) of broiled salmon	---
125 ml (½ cup) of mashed potatoes	2.2 g	1 baked potato in its skin	4.6 g
125 ml (½ cup) of steamed broccoli florets	2.0 g	125 ml (½ cup) of steamed broccoli florets with 15 ml (1 tbsp.) of roasted almonds	2.6 g
Peach Melba (2 peach halves, strawberry ice cream, butter cookies)	1.6 g	Peach Melba (2 peach halves, strawberry ice cream, graham cookies)	1.8 g
Raspberry tea	---	Raspberry tea	---
Sub-total:	9.4 g	Sub-total:	14.1 g
Daily intake	16.8 g		37.3 g

Source: Brault-Dubuc, M., and L. CARON-LAHAIE. *Valeur nutritive des aliments*, 8th edition, Saint-Lambert, Société Brault-Lahaie, 1998, 285 pp.

Cereal Products: more than a breakfast food

As we have seen, cereal products are an excellent source of fiber and carbohydrates. They also contain essential vitamins and minerals such as thiamin, riboflavin, niacin, folacin, iron, zinc and magnesium. All the more reason to encourage people to include cereal products in their diet!

We have already tripled the quantity of fiber obtained from whole-wheat bread and almost doubled the fiber intake from whole-grain cereals. However, we still do not eat enough of these foods. White bread is still by far the most popular food in this category.

Canada's Food Guide to Healthy Eating recommends 5 to 12 servings of cereal products a day, including frequent portions of whole-grain cereal products, which are fiber-rich.

Canada's Food Guide to Healthy Eating suggests the following sample servings to fulfill this requirement:

■ ***A single serving***

- 1 slice of whole-wheat bread, multi-grain bread or oat bran bread
- 30 g (1 oz) of ready-to-serve cereal such as muesli, shredded wheat...
- 200 ml ($\frac{3}{4}$ cup) of hot cereal, such as porridge or quinoa,*
- $\frac{1}{2}$ bagel, $\frac{1}{2}$ pita or $\frac{1}{2}$ roll

* Quinoa is a yellowish cereal with a nutty taste that conserves its crunchy texture when cooked. It is found mainly in health food stores.

■ ***Two servings***

- 1 bagel, 1 pita bread or 1 roll (salad roll, hot dog bun, hamburger bun)
- 250 ml (1 cup) of pasta such as spaghetti or macaroni
- 250 ml (1 cup) of white or brown, long or short-grain rice

■ ***Our daily bread***

The growing number of breads and cereals on the market makes it much easier to increase the quantity of these foods in our diet. Supermarkets offer a much wider choice than they used to, particularly in whole-grain breads and cereals. It is easy to find whole-wheat French loaves, pita bread, tortillas, crescent rolls, crackers and even pasta.

Even people who swear by white bread can get something out of this trend. Many multi-grain breads and cereal products are actually made of white flour supplemented with various whole grains and cereals such as oats, rye, millet, linseed, barley or bulgur. These supplements give “crunch” to the bread, muffins or biscuits and increase their content in fiber, protein and vitamins.

Whole grains are not restricted to whole wheat. Their wide variety means they can be used in everyday dishes, which makes it easy to meet the daily minimum requirement of 5 servings of grain products. Barley in our soup, millet in our meat pie, bulgur in our tabouli or oatmeal in our fruit crisps are a few of the hundreds of ways in which cereals can be added to our diet.

Fruit and Vegetables ... another priority

Dieticians have long advised us to eat more fruit and vegetables in order to improve our diet and help prevent certain health problems. The Fondation des maladies du coeur du Québec ⁶ and the Fondation québécoise du cancer ⁷ endorse the recommendations of nutrition specialists in an effort to combat heart disease and cancer.

■ *A wealth of vitamins ... poorly used*

Fruit and vegetables abound in vitamins and minerals that are very beneficial for our health. They also contribute fiber to our diet and variety to our meals. Dark vegetables such as broccoli, spinach, kale and chard, as well as orange fruits and vegetables, such as carrots and sweet potatoes, mangoes and oranges, are also important sources of folic acid, beta-carotene and vitamin C.

Our taste in fruits and vegetables has changed in recent years. The old favourites, such as potatoes, corn and peaches, have given way to foods less appreciated in the past: broccoli, leafy greens and pears.⁴ As a result, we do not eat more fruits and vegetables than before, only different ones; these substitutions have resulted in nutritional losses. Abandoning the potato, for instance, means that, unfortunately, fruits and vegetables contribute less dietary fiber and iron to our diet than previously.⁴

The average consumption of vegetables dropped 8% in 20 years. This is particularly true of men and women under 50, who have cut back 45% on their consumption of potatoes.⁴ People aged 50 or over have increased the amount of vegetables in their diet, yet most men and women (between 57% and 72%) eat 3 servings of vegetables a day at the most.⁴ Over 40%⁴ of the diets studied in the survey did not contain any fruit at all and close to 50%⁴ of people of all ages had not eaten any fresh or dried fruit the day before the survey.

■ *A challenge worth accepting*

*Canada's Food Guide for Healthy Eating*⁸ now recommends a greater quantity of fruit and vegetables in our daily diet, i.e. 5 to 10 servings a day. More recently, the Comité consultatif

sur le cancer of the ministère de la Santé et des Services sociaux presented us with a challenge for our diets in one of its health objectives:

“that by the year 2002, 90% of Quebecers eat 5 or more servings of fruit and vegetables daily.”

*Canada's Food Guide to Health Eating*⁸ suggests the following servings to reach this objective:

- 1 medium-size vegetable or fruit (carrot, green pepper, potato, banana, kiwi, pear, apple)
- 125 ml (½ cup) of fresh, frozen or canned fruit or vegetables (pineapple, blackberries, cantaloupe, cherries, zucchini, broccoli or cauliflower florets, string beans, green peas)
- 125 ml (½ cup) of juice (vegetable, tomato, orange, apple, prune)
- 250 ml (1 cup) of salad (cabbage, spinach, green)

Half a grapefruit or a half cup of fresh strawberries each represents one serving. Even if they are served as a dessert and even if they are sprinkled with a little sugar, they still provide one serving.

■ ***A habit worth cultivating***

The habit of serving generous portions of fruit and vegetables can be acquired, like any good habit, with time and motivation. We can add vegetables to our spaghetti sauce and our soups, serve two vegetables of contrasting colour at our meals, top yogurt, ice cream, porridge or cold cereal with slices of peach, apple...skin included! The more we talk about it, the more people will think of doing it.

There are a thousand and one ways of preparing fruit and vegetables. Do not hesitate to say so again and again, insisting on the importance of eating a variety of colourful fruits and vegetables every day. Québec produces 50 kinds of vegetables and many fruits. It is time to listen to this important message and take every opportunity to remind people to eat more fruit and vegetables.

The goal is to eat at least 5 servings a day. An investment that will surely bear fruit!

Milk: An all-important Dairy Product

Milk has always had its place in a healthy diet, for people of all ages. It is an excellent source of calcium, far superior to any other dairy product, since it alone contains vitamin D, which is essential for optimal absorption of calcium. The table below illustrates the superiority of milk as a source of calcium and vitamin D.

MILK: A SOURCE OF CALCIUM AND VITAMIN D

Milk and milk product servings	Calcium (mg)	Vitamin D (mcg)	Fat (g)
2% milk (250 ml / 1 cup)	314	2.6	5
1% milk (250 ml / 1 cup)	317	2.6	2.7
Skim milk (250 ml / 1 cup)	319	2.8	0.5
Calcium-enriched 2% milk (250 ml / 1 cup)	425	2.6	5
Powdered skim milk (15 ml / 1 tbsp)	96	0.8	0.1
2% yogurt (200 ml / $\frac{3}{4}$ cup)	270	—	3.5
Cheese:			
• regular brie (45 g / 1½ oz)	90	—	13
• cheddar (45 g / 1½ oz)	300	—	15
• cottage (125 ml / ½ cup)	90	—	0.1 to 5

Sources: Brault-Dubuc, M., and L. CARON-LAHAIE. *Valeur nutritive des aliments*, 8th edition, Saint-Lambert, Société Brault-Lahaie, 1998, 285 pp.

BÉLANGER, Philip G., et al. *Traité des connaissances des fromages canadiens et leur utilisation en fine cuisine*, Montréal, Les Éditions de la Chenelière inc., 1992, 203 pp.

In addition to being available everywhere, milk is also the most economical dairy product. Its nutritional value/cost ratio is unbeatable, particularly when compared to cheese and some kinds of yogurt. It has many uses in cooking, combining smoothly with vegetable cream soups, pasta dishes and a great variety of desserts.

■ ***Quebecers do not get enough milk***

Even though we have increased our consumption of milk and milk products slightly, we are not getting enough of these foods.⁴ *Canada's Food Guide to Healthy Eating*⁸ recommends 2 to 4 servings of milk products a day.

According to the Enquête québécoise sur la nutrition, the diets of over 64% of men and 75% of women aged 35 or over do not include 2 servings of milk products a day.⁴ It is disturbing to note that the consumption of milk and milk products dropped from 1.6 to 1.3 servings a day, or 53%,⁴ for men between the ages of 50 and 64. Moreover, we have developed a taste for cheese over the past 20 years, often at the expense of milk, and this preference has increased our fat intake.

New intake levels are recommended by the Standing Committee on the Scientific Evaluation of Dietary Reference Intakes, varying from 1000 to 1200 milligrams of calcium a day, depending on age.⁹ The calcium intake of all Québec women and of Québec men aged 35 or over is below this recommended level.

■ ***Prevent osteoporosis for a better quality of life***

Recent data published by the Osteoporosis Society of Canada show that one out of three women and one out of eight men over 50 suffer from osteoporosis.¹⁰ The impact of this condition on their quality of life is enormous: their activities are reduced, their social life is perturbed, they lose their independence ... not to mention the costs associated with treating this insidious disease.

Making a habit of drinking milk as a child, and continuing throughout adolescence and adulthood, helps prevent osteoporosis. The calcium in milk, coupled with vitamin D, helps develop and maintain healthy bones.

■ ***Milk intolerance? There's a remedy!***

Lactose, a sugar composed of glucose and galactose, is a natural ingredient of milk and milk products. To digest lactose, the small intestine produces an enzyme called lactase, which divides lactose into glucose and galactose. Some people produce little lactase or no lactase at all. The lactose, which cannot be digested, is fermented by the intestinal bacteria. The fermentation of lactose may cause abdominal cramps, a bloated feeling, flatulence and diarrhea. Such discomforts may be a sign of lactose intolerance, but they can also be caused by other foods. Actually, less than 10% of the population is afflicted with lactose intolerance.

Fortunately, supermarkets now carry milks with reduced lactose content, such as Lactaid and Lacteeze, and drugstores sell lactase drops and tablets, again called Lactaid or Lacteeze, that increase tolerance to milk and milk products.

Milk allergies are rarer still, affecting less than 2% of the population. The allergies are most often found in infants, and tend to disappear over time, usually before the child reaches the age of three. Milk and milk products may then be gradually reintroduced into the child's diet.¹¹

Less fat, more carbohydrates: a question of balance

Québec adults as a whole have reduced their fat intake by close to one third since 1971 and some have even managed to bring it down to 30% of their total daily energy intake. However, fat still tips the scales. Over 45% of men and women between the ages of 18 and 34 and close to 40% of men between the ages of 35 and 64 continue to obtain over 35% of their calories from fat,⁴ generally from the “meat and alternatives” group and various fatty substances such as butter, margarine, oil and salad dressings.

■ ***Watch it! Don't cut all the fat out!***

Fats, like other nutrients, play an important role in our health and have their place in a balanced diet. Besides contributing to the flavour, aroma and tenderness of many of our favourite dishes, the fat in our food transports fat-soluble vitamins such as vitamin E, a major antioxidant. In addition, some fats help prevent certain diseases, including heart disease.

Polyunsaturated fatty acids, on the one hand, help reduce the total cholesterol in the blood, whether the cholesterol be the good kind or the bad kind. They are found in large quantities in corn oil, soy oil, safflower oil and sunflower oil, for example. Monounsaturated fatty acids, on the other hand, help reduce the level of bad cholesterol and protect the good cholesterol. Olive oil and canola oil are excellent sources of these nutrients.

■ ***More than necessary—omega-3 fatty acids***

Omega-3 fatty acids are called essential because the human body cannot manufacture them. They are associated with a reduced risk of cardiovascular disease. They are found mainly in fish, such as tuna, salmon, halibut and herring, in various vegetable oils, such as canola oil and soy oil, and in linseed. Recent studies show that omega-3 fatty acids also have a beneficial effect in the treatment of arthritis and reduce the rate of relapse among patients suffering from Crohn's disease.¹²

■ ***More carbohydrates to restore the balance***

While we must not eliminate all fats from our diet, the fact remains that we eat too much fat, often at the expense of carbohydrates. To restore the balance, we must put more emphasis on carbohydrates, while continuing to reduce our consumption of fats.

Complex carbohydrates, in particular, like whole-grain cereals, legumes (beans, peas, lentils) and seeds (sunflower seeds, sesame seeds, linseeds) are good substitutes for fatty meats and delicatessen meats as sources of saturated fatty acids. Moreover, these carbohydrates help maintain a high energy level, providing an easily accessed fuel for our body. Complex carbohydrates have another advantage: they contain dietary fiber, which is as effective as fat in satisfying our appetite.

Sources of simple carbohydrates, such as fruits and fruit juices, must also be taken into consideration. Fruit purées can replace fatty substances in some muffin recipes, for example.

Are we getting enough Vitamins and Minerals?

In general, the diet of Quebecers satisfies the Recommended Dietary Intakes (RDI) for vitamins and minerals, except folacin, iron, and calcium, of which we have already spoken.⁴

■ *Insufficient folacin*

The folacin intake, in particular, is below par for all age groups, except men between 18 and 34. This vitamin is essential for the creation of red blood cells and the genetic material found in cell nuclei. A folacin deficiency before and during the first three months of pregnancy can result in congenital defects. It is essential that young women wishing to become pregnant be made aware of the importance of including folacin-rich foods in their daily diet.

THE BEST SOURCES OF FOLACIN

Source	Servings	Folacin (mcg)**
Lentils, cooked	250 ml (1 cup)	378
Brewer's yeast*	15 ml (1 tbsp.)	315
Spinach, cooked	250 ml (1 cup)	277
Beef liver, cooked	90 g (3 oz)	195
Kidney beans, cooked	250 ml (1 cup)	133
Romaine lettuce	250 ml (1 cup)	80
Wheat germ	50 ml (¼ cup)	68
Fresh orange juice	125 ml (½ cup)	40

According to the Dietary Reference Intakes for Canadians and Americans, the daily folacin intake for women aged 19 or over is 400 mcg (micrograms). **¹³

Sources: Brault-Dubuc, M., and L. CARON-LAHAIE. *Valeur nutritive des aliments*, 8th edition, Saint-Lambert, Société Brault-Lahaie, 1998, 285 pp.

* Whitney and Rolfes, *Understanding Nutrition*, Saint Paul, Minnesota, 6th edition, West Publishing Company, 1993, 655 pp.

■ **What about iron?**

The average iron intake among women of child-bearing age is also below the recommended quantities. Among women between the ages of 18 and 49, an iron deficiency is often caused by failure to eat foods that meet their energy needs.⁴

Iron is our best ally in bringing oxygen to the blood. It plays a role in forming hemoglobin, an essential substance in the transportation of oxygen. In addition, an iron deficiency can lead to anemia, which in turn brings on the following symptoms: pallor, fatigue, lassitude, headaches, dizziness, insomnia. It is essential to encourage at-risk groups to increase their iron intake and favour the absorption of iron by the body.

But how? Think of adding iron-enriched cereal products, such as pasta, frequently to the menu. Serve smoked oysters as appetizers, add clams and mussels to our seafood chowders, choose iron-rich fruits and vegetables, such as prunes, figs, mushrooms and spinach. Taken with a good dose of vitamin C, enriched apple juice, orange juice, or sliced oranges, for instance, the iron in these foods will be better absorbed.

..... THE BEST SOURCES OF IRON

Source	Servings	Iron (mg)
Oysters	6	5.6
Beef liver, cooked	90 g (3 oz)	5.6
Regular tofu	90 g (3 oz)	4.8
Lima beans	250 ml (1 cup)	4.4
Potatoes with their skin	1	2.8
Beef, cooked	90 g (3 oz)	2.7

According to the recommendations on nutrition of Health and Welfare Canada, the recommended dietary allowance of iron for women aged 18 to 49 is 13 milligrams.

Source: Brault-Dubuc, M., and L. CARON-LAHAIE. Valeur nutritive des aliments, 8th edition, Saint-Lambert, Société Brault-Lahaie, 1998, 285 pp.

■ **The vitamin revolution**

Recent studies have led us to examine vitamins under a whole new light. The protection provided by antioxidant vitamins against chronic disease such as heart disease and cancer regularly makes news headlines. The Fondation québécoise du cancer recommends a fat-poor diet rich in fiber, vitamin C and vitamin E to reduce the risk of developing cancer of the colon or the rectum. Some people believe these vitamins also help maintain a strong immune system.

The antioxidant vitamins are vitamin C, vitamin E and beta-carotene. Beta-carotene is a natural pigment that gives fruit and vegetables their yellow, orange or red colouring, although it can also be found in green vegetables. Beta-carotene is called “pro-vitamin A” because, once in the body, it is transformed, when necessary, into vitamin A. Fruits and vegetables provide up to 70% of our vitamin A requirements.

Other beneficial substances found in fruits and vegetables have been recognized as potentially anti-carcinogenic. Cruciferous vegetables such as cabbage, cauliflower, brussels sprouts and broccoli contain indoles in addition to beta-carotene and vitamin C.

The flavonoids contained in the skin of grapes, particularly red grapes, and many other plants also seem to have a beneficial effect on the human body.

■ ***What about supplements?***

Again according to the survey on nutrition, 30% of the population, particularly women, take mineral and/or vitamin supplements, the most popular being vitamin C.⁴ Dieticians and other health care professionals believe that the best way to obtain all the nutrients we need is nevertheless through our diet, always making a point, of course, of including lots of vegetables and fruits in our meals.

In some situations, we may nevertheless have to take supplements, when dieting, for instance, during periods of great stress, or after an operation. In these cases, multi-vitamin supplements are recommended. Vegetarians who eschew all milk products and people with temporarily greater needs, such as pregnant or breast-feeding women, may also require vitamin and mineral supplements.

Future Action

We can all promote good nutrition through what we say and what we do, and thus help increase the consumption of fruit, vegetables, grain products, milk, dietary fiber and carbohydrates, while encouraging Quebecers to cut down still further on fats.

We propose the following steps for workers in different areas.

■ *People involved in food preparation*

- Include fresh fruit on the menu, using your know-how and your creativity to enhance flavour and freshness.
- Change the balance of a meal by substantially increasing the quantity of vegetables on a plate: try to have vegetables covering two thirds of the plate.
- Add whole-grain choices to the bread basket. Congratulations if you are already doing so!
- Include grains in your soups, salads, stews and desserts ... bulgur, buckwheat, brown rice, etc.
- Add milk to your soups and desserts and serve milk rather than cream with tea and coffee.
- Serve your salads with dressings on the side rather than mixed in.
- Promote regional recipes, using regional products adapted to a healthy diet.

■ *People who produce, process and distribute food*

- See that a wide variety of fresh produce from Québec is available, at a reasonable price, in all the regions of Québec. Think of corn, cranberries and buckwheat, for instance.
- See that whole-grain breads and cereal products are available throughout Québec. Take advantage of the enthusiasm generated by local or regional promotional events, such as the ever popular community picnics, to showcase home-grown products.
- Continue to develop new health foods and make them available throughout Québec.

■ *Educators and communicators*

- Adopt a critical attitude toward fads. New fashions are regularly touted in the media, to eventually fade away again. Remember that miracle products and miracle diets do not exist.
- Continue to promote the principle of variety, always a sure way of obtaining a healthy, balanced diet for all age groups.
- Encourage the development of small bakeries with their preference for whole-grain breads.
- Introduce or join in events to promote better eating habits.
- Promote cereal products, milk, fruit and vegetables through various means of communication, particularly food shows or features on television and radio, in newspapers and magazines, folders and ads.

■ *To decision makers from various milieus*

- Support producers and educators who implement nutritional recommendations and disseminate key messages.
- Support activities designed to promote Québec products, such as a contest to make people aware of fruit grown in Québec and to increase its consumption.
- Set up regional action committees, composed of representatives from various milieus, to promote the dissemination of messages on nutrition.
- Review as partners the 1977 Québec policy on nutrition with a view to incorporating into it measurable objectives and programs promoting access by everyone to adequate information on nutrition and to reasonably priced healthy, and nutritious food.
- Set up a monitoring system to see how well Quebecers are eating, and establish the objectives of Québec's revised policy on nutrition.

Glossary

■ ***Essential fatty acids:***

Fatty acids that the human body requires but that it cannot produce. They are derived from food: linoleic acid, linolenic acid

■ ***Beta-carotene:***

Pigment giving the colour to a large number of fruits and vegetables. It is transformed into vitamin A in the body.

■ ***Insoluble fiber:***

Fiber that, by its configuration, entraps water and other molecules:

- cellulose: the most abundant fiber, forming the basic structure of plant cells;
- lignin: highly resistant plant matter (the “strings” of celery, for instance);
- some hemicelluloses: fibrous substances related to sugars.

■ ***Soluble fiber:***

Fiber with a tendency to swell in water:

- pectin: fiber able to absorb a lot of water and form a gel;
- gum: fiber obtained from plants, used in the food industry to improve the consistency of some foods, such as ice cream;
- mucilage: fiber found in grains and algae;
- some hemicelluloses.

■ Carbohydrates:

Family including complex sugars such as starch and glycogen, and simple sugars such as glucose, fructose, sucrose and lactose. Carbohydrates are found in fruits and certain vegetables, cereal products, legumes and some milk products ... as well as in sweets and pastry.

■ Kcal:

Unit for measuring energy, i.e. kilocalories.

■ KJ:

Another unit for measuring energy, i.e. kilojoules.

■ Fats:

Family including triglycerides (fat and oils), phospholipids (such as lecithin) and sterols (including cholesterol). Dietary fat is found in many foods, such as milk products, meat and meat alternatives, fried foods and pastry.

■ Fatty substances:

A fat added to food dishes, such as butter, margarine, oil, salad dressing.

■ Nutrients:

Substances derived from food which the body transforms into energy or uses for growth and maintenance and repair of body tissue.

■ Proteins:

Found mainly in milk products, meat and meat substitutes, proteins are broken down into amino acids during the digestive process and used to build body tissue (muscles, skin, hair, blood).

■ ***Vitamins:***

Nutrients the body requires in small quantities.

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