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### New Information in the Field of Nutrition

# NutritionNews

current topics >>>

## Sodium Restriction in Canada

In November, the NDP brought forth a bill with strategies to lower sodium levels in Canadians.

The strategies include limiting sodium levels in prepackaged foods, ensuring taxpayer dollars aren't used for high-sodium foods, creating a "Sodium Reduction Advisory Committee", requiring nutrition facts tables on food to refer to the recommended daily intake of sodium (instead of the upper intake level), and changing consumer information about sodium on food labels, Canada's Food Guide, and other government material.

Canadians consume an average of 3400 mg of sodium per day, which is well above the upper intake level recommended for sodium. Processed foods contribute to at least 75% of the sodium in a person's diet, which is why the bill is pressing for mandatory sodium reduction in the food industry. It is calculated that every dollar spent on prevention efforts will save \$7.30-\$11.10 on clinical action required later. That is, it would create annual health-care savings from \$12.1 to \$20.4 billion. In addition, reducing sodium would improve Canadians' quality and span of life, limiting the occurrence of high blood pressure, stroke, and heart disease.

An Australian study has shown that mandatory versus voluntary measures to reduce sodium could prevent thousands of cases of cardiovascular disease and many premature deaths.

Criticisms include that this is governmental micromanaging, reducing freedom of choice, and affecting those who require more sodium in their diet. What do you think?

## What's All the Hype About Raspberry Ketones?

Have you heard media reports lately claiming that raspberry ketones will help you "melt away fat", up to 21 pounds per month, without exercise or a change in diet? Do you wonder if it's too good to be true??

Here are the facts on raspberry ketones:

- They are a naturally occurring compound found in a variety of fruits, but are most abundant in raspberries.
- Natural RK are used in perfumes, cosmetics, and as a food additive to give food a fruity flavor.
- RK found in the supplement form are not natural, but rather a synthetic version.
- Available doses of raspberry ketone supplements range from 100 – 300 mg/day. This could cost up to \$150 per month.
- To eat 100 mg of raspberry ketone, one would have to consume 90 kg of raspberries!
- Raspberry ketone products claim to help burn fat by promoting the breakdown of fat cells, however there is very little research to prove this. No studies have been done on humans to date, and there have been very few animal studies. The effectiveness and safety of taking raspberry ketones are unknown.
- Some raspberry ketone products contain stimulants and other weight loss ingredients, making it difficult to determine what is really causing the weight loss, if there is any at all.
- Most success stories are from individuals taking raspberry ketones in conjunction with a healthy eating and exercise plan.

### What's the Verdict?

There is very little evidence to support the efficacy of raspberry ketones for weight loss. However, there is a vast amount of evidence supporting a balanced diet combined with regular physical activity as a healthy and safe method of weight loss and management. It may not be an overnight cure, but it works, and it doesn't cost a thing!

## Aspartame

**Is aspartame safe to consume?** Concerns have been raised questioning the safety of aspartame, a low-calorie sweetener. As a result, the European Food Safety Authority (EFSA) had a panel of experts conduct a full re-evaluation of its safety. On January 9<sup>th</sup>, 2013 the EFSA published a draft concluding that aspartame poses no toxicity concern for consumers at current levels of exposure. The draft Opinion is available online at [foodinsight.org](http://foodinsight.org). The EFSA also launched a public consultation on its draft scientific opinion, where any member of the public could provide their comments until February 15<sup>th</sup>, 2013. Feedback from the consultation will be incorporated into the final scientific opinion.



### Did you know?

- Aspartame has been authorized for use in foods and as a table-top sweetener for almost 30 years. The first safety assessment of aspartame was published by the Scientific Committee on Food (SCF) in 1984; subsequent complementary assessments were made in 1988, 1997, and 2002 by the SCF.
- In 1984, an Acceptable Daily Intake (ADI) for aspartame was established at 40 mg/kg body weight. The ADI is an estimate of the amount of a food additive that can be ingested daily based on body weight over a lifetime without appreciable health risk. Consumer intake is well below the ADI.
- To reach the ADI, an adult weighing 60 kg would have to drink 12 (330ml) cans of a diet soft drink (containing aspartame at the maximum permitted level of use), *each day* for the rest of his/her life. In reality, since the amount of aspartame found in soft drinks are at levels 3 to 6 times less than the maximum permitted level of use, the number of cans required to meet the ADI is 36.

## Sugary Drink Ban

Some nutrition experts are identifying sugary drinks as a prime culprit for the ever-increasing obesity rates in North America, and in September 2012 New York City's board of Health made a controversial decision and announced the ban of sugary drinks in containers larger than 16 ounces in eating establishments. However, critics argue that obesity is a complex issue that requires a comprehensive approach, and that this public health intervention threatens personal choice and infringes on consumers' rights. On March 11, just one day before the NYC sugary drink ban was to be implemented, a judge ruled that the New York Department of Health may not implement the ban. Some see this as a set back for obesity prevention. What do you think?



## What Are Chia Seeds, and Why Should You Try Them?

The chia seed is an ancient seed that originated in Central America. It has recently grown in popularity and is promoted for its many nutritional benefits. The chia seed has been touted as a nutritional powerhouse as it is packed with omega-3s, protein, fiber, and antioxidants.

Chia seeds have a mild taste and can be added to any variety of meals to up the nutritional value.

The seeds are also gluten-free making them an appealing option for those with celiac disease or a gluten intolerance.

Interesting facts about chia seeds:

- Contain 20-23% protein – higher than wheat (14.7%) and corn (14%).
- Are a complete protein.
- One tablespoon of these nutty-tasting edible seeds has as much fiber as a bowl of oatmeal, plus bone-building calcium and heart-healthy omega-3s. Chia is also a good source of iron,
- There are many uses for chia seeds in the kitchen. They can be used to thicken soups (when immersed in liquids, they become somewhat gelatinous making the broth creamier). You can also sprinkle them on granola, cereal, salads, ice cream and frozen yogurt.

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## Fish! 2013: Getting a Start on Global Mercury Control

A study just released by the Biodiversity Research Institute (BRI) in Maine found 84% of total fish samples and 82% of human hair samples from around the world exceeded human health advisory guidelines for mercury. Human activity has generated increasing levels of mercury over the past decade. This was discovered by BRI and the International Persistent Organic Pollutants Elimination Network (IPEN), who are working with the United Nations Environment Programme (UNEP) to create a global mercury treaty. Intergovernmental treaty negotiations began in 2010 and aim to adopt a treaty to control mercury some time in 2013.

### What does this mean for me?

Eating Well with Canada's Food Guide recommends two 75g servings of fish per week, yet fish consumption is the main source of mercury exposure to humans. However, rest assured, the Canadian Food Inspection Agency tests fish in Canada to ensure levels of mercury and other toxins in fish meet the standards for safety as set forth by Health Canada.

If you want to consume fish that are sustainable, low in mercury, and high in omega-3 fatty acids, The Monterey Bay Aquarium gives the following safe and sustainable "Super Green" choices:

- Albacore Tuna (troll- or pole-caught, from the US or BC)
- Freshwater Coho Salmon (farmed in tank systems, from the US)
- Oysters (farmed)
- Pacific Sardines (wild caught)
- Rainbow Trout (farmed)
- Salmon (wild-caught, from Alaska)



## What is Quinoa?

**What is quinoa?** *Chenopodium quinoa*, known as quinoa ("KEEN-wah"), is a newly popular ancient grain. Many have been introduced to quinoa for the first time in recent years, yet it actually has a vast history! Quinoa has been cultivated along the Andes for the last 5000-7000 years and traded by livestock migration to other ancient cultures to the northern and southern extremes of South America. It is known by many different local names, according to the languages of each different culture. This plant was called "the mother grain" by the Incas and given a sacred status as "a gift from their gods". After the Spanish conquest, it was abandoned in areas where Europeans introduced different grains such as wheat, rye, and oat.



### Nutritional value of quinoa?

Quinoa is actually not a true grain, but rather a fruit. It has a higher nutritive value than traditional cereals. It is often referred to as a functional food, meaning that it has health benefits beyond basic nutrition.

Some noteworthy nutritional facts include:

- Protein quality: quinoa is of high protein quality, providing all 10 essential amino acids.
- Minerals: quinoa is a source of calcium, magnesium, iron, copper, and zinc
- Vitamins: quinoa contains vitamins C and E, as well as the B-vitamins thiamin, riboflavin, and niacin.
- Fat: quinoa contains linoleic acid, an essential fatty acid.
- Antioxidants: quinoa has a relatively high antioxidant activity, thus helping prevent cell damage.



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## Pulses

**Canadian Pulses?** Ironically, Canada is the world's second largest producer and the world's largest pulse exporter, yet only 13% of Canadians consume pulses on any given day. Pulses, also known as legumes, include dry beans, dry peas, lentils, and chickpeas. They are rich in fibre and protein, contain minerals such as iron, zinc, phosphorus, and provide B-vitamins such as folate.

**Pulses production and the environment?** Canada's winter conditions are ideal for growing pulses; the cold climate helps decrease crop diseases and insects, and maintain quality storage conditions on farms. Eating locally grown pulses benefits the economy because they are sustainable sources of protein. Also, pulse crops use approximately half of the total fossil fuels of other field crops; they create their own nitrogen from the atmosphere, making the use of nitrogen fertilizer unnecessary.

**Pulse Consumption and Nutrient Intakes?** Using data from the Canadian Community Health Survey (CCHS), researchers from the University of Manitoba determined the prevalence and effect of eating pulses on nutrient intakes of Canadian adults. Overall, they found pulse consumption improves nutrient intakes in Canadian adults; most notably, fibre intake was significantly higher in pulse consumers than non-consumers.



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## Immunonutrition During Flu Season

WHOA! Finals season is coming up soon! No one wants to get sick during these last few weeks. You might be wondering... what can you do to ensure optimal immunity?

Immune functions are among the first in your body to be impaired with nutrient deficiencies and toxicities. The basic rule of thumb for optimal immunity is to eat a well-balanced diet. This may be easier said than done, but it is worth the effort! Turn over a new leaf! Specific nutrients to watch are listed below with some good food sources:

- Vitamin A: dark green, orange, dark yellow, and red vegetables and fruit; dairy products; oily fish.
- B Vitamins: most whole unprocessed foods.
- Vitamin C: many fruits and vegetables (try citrus fruits and sweet peppers).
- Vitamin D: many milk products or milk alternatives; salmon and sardines; supplements.
- Vitamin E: nuts; seeds; vegetable oils.
- Protein: choose lean meat; dried beans, peas, and lentils; unprocessed grains.
- Iron\*\*: meat products; dried beans, peas, and lentils; spinach.
- Selenium: Brazil nuts; meats; seafood.
- Zinc\*\*: dried beans, peas, and lentils; meats; seeds.

Also, don't forget to sleep well, effectively wash your hands, and get some exercise.

\*\* Very large amounts of iron and zinc also impair the immune system. Talk to your health professional about any concerns. Don't consume too much of these nutrients from supplements!

## Probiotics

### Eating bacteria can improve your health?!

“Probiotics have a promising future”, says a peer reviewed journal article published in 2012. Probiotics are defined as “live microbial food ingredients that when consumed in adequate amounts confer a health benefit on the host” (FAO/WHO, 2001). In other words, the term ‘probiotic’ means that the organism:

- has been isolated and can survive the harsh conditions of the digestive tract
- can multiply in the lower gastrointestinal tract
- has undergone proper identification and classification of the strain
- has demonstrated shelf-stability
- has been shown to have a positive health effect in controlled human studies

Probiotics maintain the balance of the intestinal flora by altering the gut environment to promote the growth of friendly bacteria. Probiotic therapy is currently used to treat many different health conditions. It is important to note, however, that not all probiotics are alike. The correct genus, species, and strain are needed to treat a particular health condition.

**Safety concerns.** The potential for adverse reactions from taking a probiotic supplement is low because it merely increases the supply of natural gut flora; however, before routine usage can be recommended, more scientific research is needed on the safety and appropriate use of probiotic products. Of concern is the growing number of products marketed as probiotics available on the market. Probiotics are often regulated as dietary supplements rather than pharmaceuticals, meaning they can be sold with limited or no research on safety and effectiveness. Products marketed as probiotics may not fit the definition of a probiotic—they may even contain harmful bacteria.

**If you think you would benefit from consuming a probiotic, talk to your physician or a Registered Dietitian.**



## Individualized Nutrition... Not Just Yet

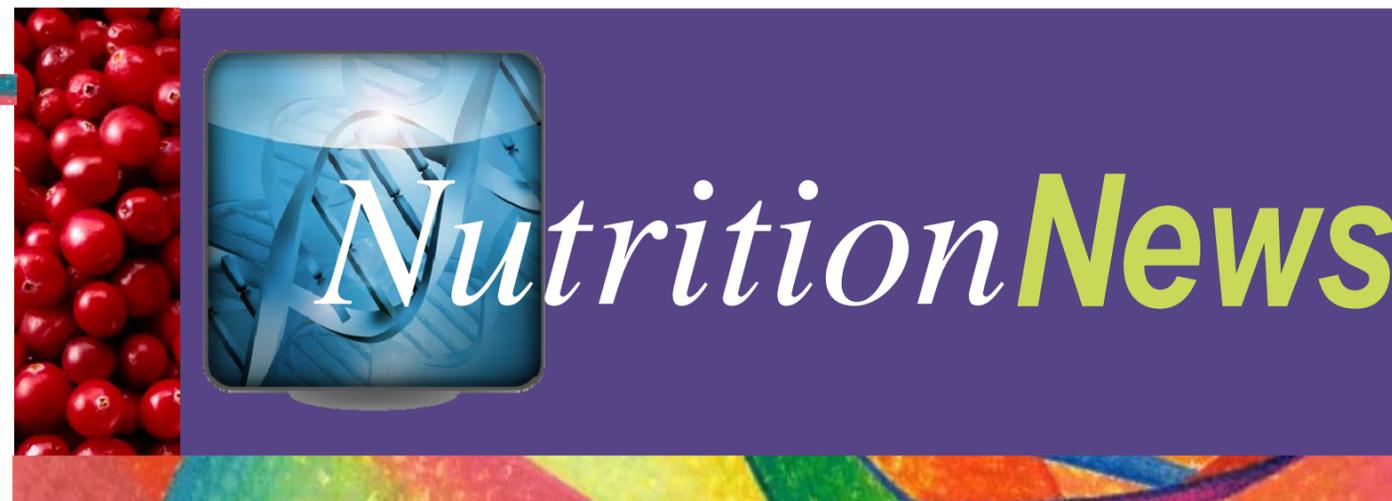
Did you know your genes can interact with the things you eat and vice versa? Nutrition recommendations developed for the public aim to optimize health and prevent diseases like cancer or heart disease, but these are based on overall studies done on populations. Individual variation exists between genes and their expression. In other words, people can have different variations of the same gene, or they can have a gene that is not expressed. Environmental factors, such as diet, have the ability to turn certain genes on or off. Your family genetics, personal environmental factors, and even environmental factors that your parents or grandparents experienced can determine your health, nutrient utilization, or food-related behaviours.

The APOA1 gene is a good example of how complicated nutritional genomics can be. This gene has two different variants, and so individuals may be either AA, GG, or GA. A research study found that polyunsaturated fats (PUFAs) affected the gene’s expression in women, but not men. In women, if PUFA intake was **less than 4%** of energy, **GG subjects** had 14% higher HDL (“good”) blood cholesterol concentrations than those with either the AA or GA variation. If PUFA intake was **greater than 8%**, the **AA and GA subjects** had 13% higher HDL cholesterol concentrations than the GG subjects. However, there are many more factors to be considered:

- Are there any other food components that have an effect on these genes?
- Are these food components in the same foods as the PUFAs?
- Are there other genes influencing the blood levels of HDL cholesterol?
- What food components affect the *other* factors (e.g. blood LDL (“bad”) levels) contributing to heart disease?
- Are there *other* genes acting on these genes... and what factors affect *those* genes?

Because of the vast variety of food components, gene varieties among individuals, and gene interactions, data are not yet available for consumers to make solid nutrition choices on the basis of genetic information alone. There are certainly companies that promote this ideology, but they are not regulated and therefore consumers should be wary. Studies are currently underway to discover the effects of nutrients on genes, and vice versa, but they are difficult to interpret as of yet. This is a developing field from which we may see some interesting applications in the future!

How can we recommend certain foods to people until we know more information? In the meantime, the best dietary recommendations may still be found in Canada’s Food Guide (EWCFG 2011) which emphasizes a diet rich in vegetables, fruit, whole grains, plant sources of protein and lean choices of meat and dairy products. World-over, the healthiest people, with the lowest rates of chronic diseases, follow culturally-appropriate versions of this type of diet.



## Golden Rice

In a few months, genetically modified rice will be given to Philippine farmers to grow. Bangladesh, Indonesia, and India have also shown interest in accepting this rice. The rice has been genetically modified to produce beta carotene, the pigment responsible for the orange color of carrots and many other fruits and vegetables. This pigment gives the rice a golden tinge and is also a key precursor for the human body’s production of vitamin A.

Vitamin A deficiency in developing countries causes blindness and poor immunity in children. This deficiency kills around two million people per year and is the major cause of blindness in third world countries.

The rice has been awaiting approval since 1999. It has been opposed by campaigners, who maintain that it does not deliver much vitamin A and who also believe the introduction of crops to the developing world promotes global capitalism, causing farmers to be dependent on western industry.

Since 1999, the rice has undergone field testing, re-creation to improve vitamin A levels, safety and risk testing, and consumption studies in adults and children to ascertain the amount of vitamin A their body makes after eating the rice. Researchers have found a 100-150g bowl of cooked rice could provide 60% of a young person’s recommended intake of vitamin A. With regards to global capitalism, scientists involved say no one from western industry will make money out of this crop. The project was developed to alleviate a health problem in third world countries and has been funded by the Bill and Melinda Gates Foundation. Companies involved in developing some of the technologies have waived their license on the rice to help the cause. What do you think?



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