


# FOOD SAFETY: FROM STORE TO FORK

## Introduction

### Focus

This *News in Review* module examines healthy eating practices. Canada's Food Guide to Healthy Eating outlines for Canadians what they should be eating, but what about consumer concerns? Questions regarding genetically modified foods, microbes, pathogens, and food inspection agencies can plague the consumer. Education is the key to eating right and staying healthy.

 Sections marked with this symbol indicate content suitable for younger viewers.

Canada's Food Guide to Healthy Eating outlines what Canadians should be eating. For people from four years of age the Guide recommends a healthy balance of four food groups (cereals and grains; dairy products; fruits and vegetables; and meat, fish, poultry and alternatives) to be included in daily intake. A variety of measurements for the recommended amount for each food group take into account age, gender, and pregnancy status. If the Food Guide recommendations are put into practice there is no need for any type of dieting.

Genetically modified (GM) foods, labelled by some as "Frankenfoods," are supported by some and disputed by others as a safe part of our daily diet. All living organisms have their own unique DNA, but through biotechnology, a gene for a desirable trait can be taken from one organism and put into another to create a product with superior traits. Government agencies and other groups support GM foods as a way to provide more people around the world with food and to ensure the environment suffers less from pesticide and herbicide use than it has in the past. On the other hand, environmentalists and others are pressuring governments not to allow the production and sale of GM foods because of the lack of long-term research. They believe GM foods

could prove to be highly toxic to humans and animals and are very concerned about potential unknown effects on natural ecosystems.

An immediate concern for consumers should be food-borne illnesses ("food poisoning"). These occur when a person ingests bacteria, viruses, or parasites while eating. Everyone involved in the food production chain, from the primary producer to the consumer has a role to play in ensuring the safety of the food we eat. Sanitation regimes, technology, research and development, education, industry regulations, food inspection agencies, and regular testing all contribute to ensuring food safety up until the food is bought by the consumer.

It remains the responsibility of the consumer to ensure food is safe to eat by being aware of how foods can become unsafe if not handled properly. Proper cooking and food handling methods are essential. Restaurants in some parts of Canada are becoming safer places to eat due to strengthened laws and improved inspection policies. Healthy eating should be a goal for all Canadians. As consumers we all have to be aware of what is needed for a balanced diet and implement safe food practices in our homes.

## Questions

1. a) Name the four food groups in Canada's Food Guide to Healthy Eating.  
b) Name one food that belongs to each of the four groups.
2. a) List two reasons to support the production and sale of GM foods.  
b) List two reasons to dispute the production and sale of GM foods.
3. a) How does food poisoning occur?  
b) How do you make sure you are safe from food poisoning in your home?

# FOOD SAFETY: FROM STORE TO FORK

## *Video Review*

Answer the questions on this page as you observe the video.

1. How many Canadians suffer from food poisoning each year? \_\_\_\_\_
2. How many Canadians die from food poisoning each year? \_\_\_\_\_
3. Name two microscopic organisms that are found in our food that can be harmful to us.

\_\_\_\_\_ and \_\_\_\_\_

4. List two ways to determine whether food is spoiled or not before you eat it.

\_\_\_\_\_  
\_\_\_\_\_

5. Who has taken the responsibility of protecting restaurant patrons from food-borne illnesses?

\_\_\_\_\_

6. How much notice is given to restaurant owners before they are inspected?

\_\_\_\_\_

7. Identify two ways that Toronto and Vancouver publicize restaurant inspection results.

\_\_\_\_\_  
\_\_\_\_\_

8. a) Name the three notices given out by Toronto inspectors and explain what each means.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. How do city health inspectors know they are achieving the desired results?

\_\_\_\_\_  
\_\_\_\_\_

10. Identify three things inspectors look for when inspecting restaurants.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. Where does most food poisoning happen?

\_\_\_\_\_

# FOOD SAFETY: FROM STORE TO FORK

## *Healthy Choices: Canada Food Guide*

To learn more about Canada's Food Guide to Healthy Eating and topics relating to nutrition go to [www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/food\\_guide\\_rainbow\\_e.html](http://www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/food_guide_rainbow_e.html).

### Getting the Goods on Good Eating

Go to the Web page that features Canada's Food Guide to Healthy Eating at [www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/food\\_guide\\_rainbow\\_e.html](http://www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/food_guide_rainbow_e.html)). Answer the following questions as you review the guide.

### Questions

1. At what age should a person begin to follow Canada's Food Guide to Healthy Eating?

---

2. Study the Rainbow.

- a) Name the four food groups identified by Canada's Food Guide to Healthy Eating.

---

- b) List three foods associated with each of the four food groups.

---

---

---

- c) List one tip suggested for each food group.

---

---

---

3. Brainstorm a short list for each of the four food groups that identifies the benefits of each group. For example, milk products help build strong bones. Be prepared to share your answers with the class and add to your own lists.

---

---

---

---

4. What factors do you need to take into consideration when deciding how many servings of each food group you should have per day?

---

5. Create a list of reasons why a person may not follow the recommended servings from Canada's Food Guide to Healthy Eating. Be prepared to share your list with the class.

---

---

---

---

---

### Extension

6. a) How would you compare your daily eating habits with those recommended by Canada's Food Guide to Healthy Eating?

---

b) Create a chart and record the following for a week: what you eat, the food groups included in your diet, and the number of servings of each food group you consume each day.

c) How could you improve your eating habits to maintain a healthy diet?

---

---

---

7. Create a chart with five columns, use the four food groups identified in Canada's Food Guide to Healthy Eating and "other" as your column titles.

a) Visit your school cafeteria. Enter each food and drink item sold in your cafeteria into the appropriate column on your chart. Some items may be entered more than once on your chart.

b) Analyze the results of your chart and rate your school cafeteria. Does the cafeteria enable students to follow the recommendations of Canada's Food Guide to Healthy Eating?

# FOOD SAFETY: FROM STORE TO FORK

## *Frankenfood*

Genetically modified (GM), or transgenic, food, otherwise known as “Frankenfood,” includes any organism that has gained new genetic information as a result of an injection of foreign DNA. GM food first appeared in the 1990s, and since then environmental activists and consumer advocacy groups have curtailed the sale of GM foods in countries such as Germany, France, Britain, and Switzerland. The anti-GM food sentiment is currently gaining ground in the United States and Canada.

All living organisms have their own unique DNA. Using biotechnology, scientists can take a gene for a desirable trait from one organism and put it into another to produce a crop with superior traits. The transferred genes are injected into the plant cells using a “gene gun” and are understood by their new host even if the host is an unrelated species. For example, the gene in daffodils that produces beta-carotene (vitamin A) has been transferred to rice to make it more nutritious. It’s called “golden rice” because of its yellow colour. Hundreds of thousands of children die annually from vitamin A deficiency; genetically modified rice is helping to save these children from dying.

Other examples of GM foods include corn and potatoes that have been injected with genes that produce a protein that is toxic to insects. So far this has been successful at controlling pests that potentially destroy the plants or force farmers to use pesticides on their crops. Biotechnology has also allowed genes from bacteria, viruses, and even frogs to be inserted into the genes of food plants. GM corn first grown in the United States produces a bug-killing

toxin using a gene taken from the bacterium *Bacillus thuringiensis*. Soybeans, tomatoes, squash, and radishes are other popular forms of GM foods on the world market. These crops cover millions of acres of farmland and have become commonplace in the diets of many nations. Although popular in some nations, GM foods are a topic of great controversy. Some believe that the unknown qualities of genetically engineered foods are dangerous, whereas others believe that these foods will save lives and the environment.

### **Pro**

GM foods have the potential to improve the health of humans and the environment, and offer benefits to farmers. Genetic modification has developed crops that repel bugs, thus reducing the use of pesticides. This is better for the environment and saves farmers money they would otherwise have to spend on chemicals. Some GM crops have been developed to tolerate herbicides that kill weeds and to be resistant to disease. Hardier crops have enabled the use of marginalized land, and there are future hopes that these crops will also be able to withstand cold spells. GM foods that are already being developed and sold have a longer shelf life. This aids farmers in selling their crops and cuts down on the amount of food that is wasted through spoilage.

Health benefits include reducing world hunger by altering plants to promote increased seed yield (as already seen in India and China). This produces more food for people as well as more money for farmers. Also, the

improved nutritional content in GM foods may be critical in the fight against disease and malnutrition in developing nations. In the future biotechnology could be used to remove from our food the natural chemicals, such as carcinogens and toxins like the aflatoxins from microbes that grow on nuts, oil seeds and other plants, that can cause fever, jaundice, pain, vomiting, and death.

## **Con**

Arguments against the development of GM foods focus on both the potential harm to human health and the health of the environment. GM foods could prove to be highly toxic to humans and animals. Little research has been done in this area to date. The food industry refuses to label GM foods so it makes it hard to track health problems or to give customers a choice when they are purchasing food. Also, injecting foreign genes into plant cells could produce unforeseen toxins or allergens that could cause serious health problems for humans and animals. New food allergies and illnesses caused by “Frankenfoods” will not be preventable or curable unless money and time for research is granted. More must be learned about the long-term effects on humans.

Environmental scientists and activists are concerned that the artificial hybrids could produce disruptions in the balance of nature that could wipe out genetic diversity. The fact that new genes are introduced in parts of the world that have never known them is a

cause for concern because of the unknown effects on the natural ecosystems that are being disrupted. For example, GM crops that have been altered to resist pests might proliferate and ultimately overwhelm an area. Another drawback of GM crops is the potential to create chemical-resistant insects and weeds. What will be altered next if the situation comes to this? Will our environment be able to integrate other foreign genes? These are some questions being raised by people opposing the development and sale of GM foods until further research has been conducted.

## **Conclusion**

Currently the lack of research hinders this debate. GM foods may save lives or potentially make people sick. They may help to preserve farmland or destroy our environment by upsetting delicate ecosystems. Only time and further research will provide the answers being sought. The biotechnology used to insert new genes into an organism is not limited to the field of agriculture; this technology has medicinal, industrial, and environmental implications as well. One thing is clear; GM foods and biotechnology are the present, not the future. Farmers in Europe who are protesting the development of GM foods know that eventually, if North American farmers continue to develop GM foods, they will have no choice but to follow suit if they want to remain competitive in the global food market.

## To Consider

1. a) What is a genetically modified food and when did these appear in Canada and the United States?  
b) Provide an example of a genetically modified food.
2. Explain, using at least two reasons, why the development of genetically modified foods continues to be explored and implemented.
3. Explain, using at least two reasons, why some people are opposed to the development of genetically modified foods.
4. After reading about genetically modified foods list three questions you have. Be prepared to share your questions with the class.
5. Based on the reading on the previous pages what conclusions can you draw about the future of genetically modified foods in Canada and the world?

## Extension

6. a) Who's saying what? Using a chart format, compare the arguments of three organizations about genetically modified foods. These groups could represent scientists, governments, advocacy groups, or GMO critics. Use these Web sites to start your research: AGCare, <http://agcare.org>; Agriculture and Agri-Food Canada, [www.agr.gc.ca](http://www.agr.gc.ca); Agri-Food Research Magazine, [www.gov.on.ca/OMAFRA/english/research/magazine/summer2000/](http://www.gov.on.ca/OMAFRA/english/research/magazine/summer2000/); BIOTECCanada, [www.biotech.ca](http://www.biotech.ca); Food Inspection Agency, [www.inspection.gc.ca/english/ppc/biotech/laberti/developas.shtml](http://www.inspection.gc.ca/english/ppc/biotech/laberti/developas.shtml); An Introduction to Critical Thinking about Biotechnology, [www.canola-council.org/decision/intro.htm](http://www.canola-council.org/decision/intro.htm).  
b) Using the information gathered in your chart, develop either a pro or con analysis of genetically modified food issues. Be prepared to defend your point of view in a class debate.

# FOOD SAFETY: FROM STORE TO FORK

## *From Farm to Retailer: Safe Food Practices*

### Definition

*Irradiation* is a food preservation technique in which foods are exposed to measured doses of radiation to reduce or eliminate pathogens and kill insects, reduce spoilage, and in certain fruits and vegetables, inhibit sprouting or delay ripening.

### Danger Facts

- Two million Canadians get food poisoning each year.
- 30 Canadians die each year from food poisoning.
- Canada has one of the safest food supplies in the world.
- No food-borne illness that has so far been identified has ever been eliminated.
- A total of 250 food-borne diseases are known to exist and more continue to emerge.
- Farm livestock in Ontario and Quebec alone produce an amount of manure equal to the sewage from 100 million people.

Food-borne illness, often called “food poisoning,” occurs when a person ingests bacteria, viruses or parasites, also known as pathogens or microbes, while eating. Food-borne illness is the largest class of emerging infectious diseases. Everyone involved in the food production chain, from the primary producer to the consumer has a role to play in ensuring the safety of the food we eat. If the people involved in food production and consumption do not engage in safe food handling several forms of food poisoning could occur.

The bacteria and viruses in the chart on the next page are found in the foods we eat and must be either prevented from growing or rendered harmless before the food is safe to eat.

Each link in the food production chain plays a vital role in ensuring food safety. Everyone’s greatest responsibility is sanitation. Farmers and ranchers need to examine their livestock prac-

tices and cleaning regimes to make sure they are not contributing to pathogen growth. Manufacturers need to be actively involved in research and development to implement a variety of interventions from the kill floor to final sale to retailers. A new line of coated steel products with an antimicrobial coating releases silver ion into the environment to suppress microbe growth. Stainless steel sinks and drains now have the ability to prohibit pathogen growth. Intervention tools such as hot-water washes and steam cabinets are also being used to achieve desired results. Technology is being developed to detect bacteria in raw ingredients and finished products. Retailers and food-service operators need to be continuously educated about causes of contamination and the investment in purchasing irradiated food products. The government’s responsibility is to enforce industry regulations and consumer education programs.

The Canadian Food Inspection Agency (CFIA), [www.inspection.gc.ca](http://www.inspection.gc.ca), was created in 1997 by drawing together food inspection groups from several different federal departments. The CFIA has 4600 staff, reports to the Ministry of Agriculture and Agri-Food, and performs a variety of tasks. It makes sure food is labelled correctly, animals are handled humanely, and imported food is free of disease. It monitors slaughterhouses and meat-packing plants, tests food samples to rule out contamination, performs laboratory testing, and implements environmental assessments of seeds, plants, feeds, and fertilizers. Some provinces in Canada also have inspectors that per-

form the same or similar tasks as the CFIA. Cutbacks in funding to save government money or privatization of this type of service has proven to be

fatal in the past. Lives depend on the vital role these groups play in the food-production chain.

## Meet the "Bugs"

Name	Symptoms	Foods that Have Caused Outbreaks	How Soon It Strikes	How Soon It Ends
<i>E. coli</i> (bacterium)	Severe abdominal pain, watery and bloody diarrhea, occasional vomiting	Ground beef, raw milk, lettuce, sprouts, unpasteurized juices	1 to 8 days	Get treatment immediately
Hepatitis A (virus)	Fever, malaise, nausea, loss of appetite, abdominal pain, jaundice	Shellfish, salads, cold cuts, sandwiches, fruits, vegetables, fruit juices, milk, milk products, infected food handlers	10 to 50 days	1 to 2 weeks
<i>Listeria</i> (bacterium)	Fever, chills, and other flu-like symptoms; headache; nausea; vomiting; diarrhea; infections of the blood; inflammation of the brain or membranes of the brain or spinal cord; spontaneous abortion or stillbirth	Hot dogs, deli meats, raw milk, cheeses, raw and cooked poultry, raw meats, ice cream, raw vegetables, raw and smoked fish	A few days to 3 weeks	Get treatment immediately
Norwalk Virus (virus)	Nausea, vomiting, diarrhea, abdominal pain, headache, low-grade fever	Shellfish, salads, infected food handlers	1 to 2 days	1 to 2.5 days
<i>Salmonella</i> (bacterium)	Nausea, vomiting, abdominal cramps, diarrhea, fever, headache	Poultry, eggs, raw meats, milk and dairy products, fish, shrimp, sauces and salad dressings, cream-filled desserts and toppings, fresh produce	6 hours to 2 days	1 to 2 days

(Adapted from *Nutrition Action Healthletter*, October 1999.)

## Analysis

1. What is a food-borne illness? How does it occur?
2. Refer to the chart on the previous page.
  - a) List four common symptoms of food poisoning.
  - b) List two symptoms of food poisoning that surprised you.
  - c) List four common foods that carry pathogens.
3. Define the term *irradiated*.
4.
  - a) Identify the links in the food-production chain.
  - b) Provide five examples of ways food safety practices are being implemented in various parts of the food-production chain.
5. Identify a group involved in the food-production chain. Develop two questions you would ask this group.
6. What is the sole function of the CFIA?

## Extension

7. Research a specific food-borne illness and investigate the bacterium or virus that causes the illness. Write a Personal Advertisement for a bacterium or virus. Include the conditions needed for the bacterium or virus to grow and spread, how the virus or bacterium contaminates food, and how the bacterium or virus can be controlled or destroyed.

# FOOD SAFETY: FROM STORE TO FORK

## *Safe Food Practices at Home*

### **Definition**

A pathogen is a disease-causing agent.

Consumers are the last link in the food-safety chain. It remains the responsibility of the consumer to ensure food is rendered harmless before it is safe to eat. Proper cooking and food-handling methods typically accomplish this. Consumers must be aware of foods that may become unsafe if not handled properly. All meat, eggs, and shellfish need to be properly cooked to kill any pathogens. Foods that need to be properly refrigerated in order to avoid the growth of pathogens are:

- Salads made with cooked meat, poultry, eggs, and fish
- Cooked vegetables, peas, and beans
- Cooked cereals, particularly those made with rice
- Custards, puddings, and whipped cream (and pastries containing any of these ingredients)
- Milk and milk products
- Salad dressings
- Processed meats (ham, bologna, salami, wieners, etc.)
- Gravies and sauces
- Meat sandwich spreads
- All canned food and dinner combinations after opening or thawing
- Egg products, e.g. baked foods, salads
- All cheese, particularly brie, camembert, goat-milk ricotta, cottage, cream, mozzarella, and quark

There are basic food handling rules consumers should follow at home to avoid food poisoning.

### **1. Wash It**

Wash your hands with hot soapy water for about 30 seconds before you touch

any food. Be sure all utensils, cutting boards, and countertops are washed with hot, soapy water. Dishcloths should be rinsed immediately with soap and hot water, then laundered as soon as possible. Damp cloths are breeding grounds for microbes and pathogens.

### **2. Store It Right**

Follow directions on the food packages. Check the “Best Before” date on the packages. Your refrigerator temperature should be 4° C or less. Keep frozen foods at -18° C.

### **3. When in Doubt, Throw It Out or Take It Back**

Carefully examine food and food packaging for unusual smells, colour, or feel. Do not use if packages or cans are torn, broken, or dented.

### **4. Thaw Frozen Foods Properly**

Thaw foods in the refrigerator, in running water, or in the microwave. Cook thawed foods immediately.

### **5. Cook Foods Thoroughly**

Prepare foods quickly, cook thoroughly, and serve immediately. Food must be cooked so that the internal temperature is greater than 70° C. Always use clean utensils to move and mix foods.

### **6. Keep Raw Meats Separate from Other Foods**

Use separate cutting boards, utensils, and plates for raw meat and other foods like bread, vegetables, and fruits when storing or preparing. Serve cooked meat on a different platter than the one used for the raw meat.

For more information on safe food handling at home visit the Web site of the Canadian Partnership for Consumer Food Safety Education at [www.canfightbac.org/english/indexe.shtml](http://www.canfightbac.org/english/indexe.shtml).

### **7. Keep Hot Foods Hot (above 60° C) and Cold Foods Cold (below 4° C)**

Cover foods when cooked and serve quickly.

### **8. Cool Foods Quickly If Saving for Another Meal**

Chill foods immediately in the refrigerator by dividing into small portions and storing in shallow containers.

Frozen foods should be thoroughly thawed and thoroughly cooked before freezing again.

### **9. When You Serve Food**

Never leave food out for more than two hours because the warm temperatures allow bacteria to grow quickly.

Food safety concerns also apply to eating out. If you eat at full-menu restaurants or fast-food chains you should be aware of local government food inspection systems such as Toronto's Food Premises Inspection and Disclosure System. Toronto's system is similar to food inspection across Canada. When a public health inspector conducts an inspection, the

restaurant will receive one of three food safety inspection notices: PASS (green); CONDITIONAL PASS (yellow); and CLOSED (red). These notices must be posted immediately following the inspection, at or near the entrance of the establishment. The PASS notice means the restaurant has met the requirements of the Food Premises Regulation or only minor infractions were found. The CONDITIONAL PASS notice means that one or more significant infractions under the Food Premises Regulation were observed during an inspection. A public health inspector will return in 48 hours to ensure the infractions have been corrected. The CLOSED notice means a public health inspector has identified a health hazard on the premises. The premises will remain closed until a new inspection shows this hazard has been corrected. Inspectors check if food is handled safely and preparation areas are kept clean. They inspect two to three times a year, depending on the type of establishment.

(Adapted from *Toronto Public Health* pamphlet, 2001)

## **Questions**

1. List five foods that need to be refrigerated in order to avoid the growth of pathogens.
2. Identify an underlying message portrayed on the food handling tips list.
3. Explain why temperature is a key component of food safety in the home.
4. a) When are safety inspection notices posted in Toronto restaurants and fast food chains and how many different types of notices are there?  
b) Explain the prerequisite conditions of the restaurant or fast-food chain for each of the different notices.
5. Create a poster, story, poem, jingle, song, skit, board game, or a fridge magnet that includes three safe food-handling tips to encourage people to follow the rules.

# FOOD SAFETY: FROM STORE TO FORK

## **Nutrition Action: Safe Food Quiz**

How much do you know about food and food safety? Try this simple quiz. Circle your answer for each of the following questions.

1. You can't get food poisoning if you thoroughly cook your food and eat it promptly.
  - a) true
  - b) false
2. Which of the following long-term complications can result from food poisoning?
  - a) rheumatoid arthritis
  - b) kidney disease
  - c) nerve damage
  - d) all of the above
  - e) none of the above
3. The first symptoms of food poisoning can occur:
  - a) immediately
  - b) within two to 48 hours after eating
  - c) from two days to a week after eating
  - d) any of the above
4. When you cook meat or poultry—or casseroles that contain meat or poultry—what minimum oven temperature should you use?
  - a) 125° F (52° C)
  - b) 225° F (107° C)
  - c) 325° F (163° C)
  - d) 425° F (218° C)
5. Which kind of cutting board is safest for cutting meat and poultry?
  - a) wood
  - b) plastic
  - c) either, as long as you keep it clean
6. More than 90 per cent of sea-food poisoning cases would be eliminated if people:
  - a) cooked their shellfish thoroughly
  - b) made sure their seafood was kept on ice until right before it was cooked
  - c) only ate fish they caught themselves
7. It is safe to eat raw fish as long as it has been marinated in lemon juice or vinegar for at least four hours.
  - a) true
  - b) false
8. What percentage of fruits and vegetables that Canada could be importing from the United States contains pesticide residues?
  - a) almost 100 percent
  - b) almost 80 percent
  - c) almost 50 percent
  - d) almost 10 percent
9. Washing fruits and vegetables with a special produce cleaner removes more pesticides than washing them with detergent and water.
  - a) true
  - b) false
  - c) there's not enough research to tell
10. It's safe to re-freeze food—even meat and poultry—as long as it's been thawed in the refrigerator.
  - a) true
  - b) false

## Answers

Your score? /10

(Source: *Nutrition Action Healthletter*, October 1998)

1. b. Some bacteria can produce dangerous toxins that aren't destroyed even by thorough cooking. What's more, cooked food can become contaminated if it comes in contact with an unwashed utensil, dish, countertop, or hand that was used to prepare tainted or uncooked food.
2. d. *Salmonella* can cause rheumatoid arthritis, *E. coli* can cause kidney disease, and *Campylobacter* or *Citruobacter* can cause nerve damage.
3. d. Food poisoning is most likely to strike from two hours to two days after eating. But some toxins in fish work within minutes, while botulism could take up to a week.
4. c. Never cook dishes that contain meat or poultry at less than 325° F (163° C). At oven temperatures below 325° F, the internal temperature of the food can take too long to reach 140° F (60° C). Below 60° C, any bacteria can double in number in as little as 20 minutes. And those bacteria can produce toxins that aren't killed by heat.
5. c. Bacteria clinging to surfaces of plastic boards, so they can easily rub off onto food. But plastic is easier to clean. With wooden boards, bacteria are absorbed back down into the wood fibre and remain beneath the surface, away from food. But wood is harder to keep clean. The best advice: 1) keep a separate cutting board for meat and poultry, 2) keep your boards clean, and 3) toss out any boards that have deep knife scars.
6. a. Raw shellfish accounts for more than 90 per cent of seafood poisoning.
1. b. The most common culprit is Norwalk virus, which comes from human sewage. It causes nausea and diarrhea, but most of the people who are attacked each year recover within a day or two. *Vibrio vulnificus*, a bacterium found mostly in oysters grown in the warm waters of the Gulf of Mexico, is less common. But it can be deadly.
7. b. Ceviche may taste delicious, but "cooking" by marinating doesn't kill all of the harmful bacteria or parasites that the fish could contain. Neither does cutting up raw fish for sushi.
8. c. Some 50 per cent of the fruits and vegetables grown in the United States contains pesticide residues. Even worse, most of that 50 per cent contains residues of more than one pesticide.
9. c. According to a recent study, washing produce with a mixture of water and a mild dishwashing detergent—combined with peeling carrots and the skins of fruits like apricots and pears and removing the outer leaves of lettuce and cabbage—eliminated all pesticides in half of the fruits and vegetables that contained residues. So far, there's no good research on whether special fruit and vegetable cleaners work any better.
10. a. Forget what your mother told you. It's okay to refreeze meat and poultry that was thawed in the refrigerator. Just don't let the food lie around in the fridge for more than a day or two before you re-freeze it. And don't expect refrozen food to have the same taste or texture as food that was never frozen.