Healthy Eating Manual

SUPPLEMENT

HEALTHY EATING MANUAL

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Healthy Eating with Vegetables and Fruit

Healthy Eating with Vegetables and Fruit

Leader Information

LEADER INFORMATION

To lead the lesson on vegetables & fruit with comfort and ease, review the Background Information on Healthy Eating in the Healthy Eating Manual (1997) - pages 12 - 35

Be familiar with Canada's Food Guide to Healthy Eating. A review of *Food Guide Facts - Background for Educators and Communicators* is recommended for this lesson and all the lessons in the Healthy Eating Manual. (Available from: Local Public Health Units.) Also, connect with the program, **5 to 10 A Day, Are You Getting Enough?** to receive the material associated with this national campaign.

Visit www.5TO10ADAY.COM or call THE CANADIAN CANCER SOCIETY'S CANCER INFORMATION SERVICE at 1-888-939-3333.

BASIC FACTS

Scientists often differ about the pros and cons of various health issues but few dispute the health benefits associated with eating more vegetables and fruit. More than 450 studies from around the world show that people who eat five or more servings of vegetables & fruit daily have a decreased risk of developing heart disease and some types of cancers. What's more, people who eat lots of vegetables & fruit are less likely to have weight problems or suffer from constipation, hemorrhoids and diverticulosis.

Vegetables & fruit promote good health above and beyond basic nutrition. These foods provide fibre, vitamins, minerals as well as beneficial plant chemicals called phytochemicals. They are also low in calories and fat.

Although everyone agrees that it is the whole food and not any one nutrient or phytochemical that is important, the vitamins and phytochemicals provided by vegetables and fruit deserve special mention.

VITAMINS

Vegetables & fruit stand out for their contribution of Vitamin C and beta-carotene, two vitamins that function not only as nutrients but also as anti-oxidants. Anti-oxidant means " against oxygen".

Ironically, oxygen is both essential to life and yet harmful to life in some forms. What anti-oxidants do is de-activate or neutralize harmful forms of oxygen called free radicals and singlet oxygen. If not stopped by anti-oxidants, free radicals and singlet oxygen damage cells, initiating the very early stages of heart disease and cancer.

It is thought that vitamin C and beta-carotene help keep the immune system strong and protect health by reducing risk of:

- Cholesterol build-up in arteries
- High blood pressure
- Angina (severe pain in chest, due to the heart not receiving enough oxygen and nutrients)
- Some types of cancer eg cancer of stomach, mouth, throat, lung, colon, pancreas
- Eye cataracts

PHYTOCHEMICALS

Phytochemicals are plant compounds that are thought to ward off disease by acting in many different ways. Some phytochemicals may act as antioxidants just as vitamin C and beta-carotene do; some may act as a barrier to cancer-causing compounds trying to enter cells; some may de-toxify cancer-causing agents; others may slow down cancer growth in cells.

Some 4000 phytochemicals have been identified although only a small percentage of these have been studied extensively. All vegetables and fruit contain phytochemicals in varying amounts.

The examples listed here represent only a small number of the phytochemicals now being studied for beneficial health effects.

Phytochemicals possibly linked to reducing cancer risk:

✓ indoles and isothiocyanates in cruciferous vegetables (broccoli, brussels sprouts, cabbage, cauliflower, kale, bok choy, rutabaga, turnip)

- ✓ isoflavones such as genistein in soybeans and soybean products such as tofu
- ✓ limonene in citrus fruits
- ✓ lycopene found in tomatoes, grapefruit, red peppers

Phytochemicals possibly linked to better heart health:

- ✓ allicin in garlic and onions reduce blood cholesterol and blood pressure
- ✓ flavonoids in citrus fruits may inhibit blood clotting

Phytochemicals possibly linked to eye health:

- ✓ lutein, the yellow pigment in corn may help prevent macular degeneration of the eyes

COMMON QUESTIONS & ANSWERS

The following questions are not covered by the lesson plan but may come up during discussions. Answers are provided to help you respond to some of the common misconceptions around vegetables and fruit.

Q: How can vegetables & fruit be so healthy with all the pesticides that are used these days ?
A: Although there is a fear of pesticides on produce, health organizations such as The Canadian Cancer Society and National Cancer Institute of Canada say pesticide residues in food do not pose a significant cancer risk.* The health benefits of eating more vegetables and fruit outweigh any health risks associated with pesticide residue.

The amount of residue that actually remains on food as you eat it, is quite small. According to the Canadian Food Inspection Agency, multiple-residue testing is done on over 10,000 samples of fresh produce each year and 98-99% of the tested samples comply with our regulations. In fact, there are no detectable residues on 75 % of the tested samples and on average, only 1.2 % of Canadian grown produce and 1.9 % of imported produce violate our standards.

To the credit of Canadian farmers, there is a growing commitment to the practice of a farming method known as Integrated Pest Management (IPM). IPM attempts to control pests and weeds more naturally through such means as crop rotation, using pest resistant crop varieties and using less pesticide and only when absolutely necessary.

To reduce exposure to pesticide residues, however small, always wash very well, peel where practical (oranges, pears, apples, fresh apricots) and remove the outer leaves of lettuce and cabbage.

* Reference: Ritter L. "Report of a Panel on the Relationship between Public Exposure to Pesticides and Cancer." Cancer 1997; 80:2019-33.

Q: How should you wash vegetables & fruit ?
A: Washing well is important to remove any pesticide residue that may be present as well as bacteria and parasites that can cause food poisoning. Since pesticides are designed not to wash off in the rain, the Canadian Food Inspection Agency suggests washing with dish soap whenever practical. However the Canadian Produce Marketing Association favours washing with just water and cautions against leaving soap residue on produce. Soap or no soap, make sure you wash well, with a scrubber if possible and rinse very well.

Q: Organic produce is safer and healthier, isn't it ?
A: Not necessarily. Although the majority of Canadians believe that organic food is safer and more nutritious, health officials claim that all food sold in Canada is safe and not cause for worry. And cancer experts say cancer risk from pesticides is low; smoking, inactivity, unhealthy diets and sun exposure are bigger cancer risks.

As for nutrition, organic food is no better than regular food. Small differences exist but are insignificant. For example, organic fertilizer has been shown to increase iron, phosphorous, sodium in spinach but conventionally grown spinach had higher calcium.
Like conventionally grown food, organic food is safe although it isn't risk free. Natural pesticides and environmental pollutants leave toxic residues too.

Q: Are broccoli and spinach good sources of iron.
A: No. Although rhubarb, spinach, broccoli and swiss chard contain iron, it's not very usable by the body. The reason ? These foods also contain significant amounts of oxalate, a substance that binds the iron making it largely unavailable. However, there are other good reasons for eating these vegetables: they are good sources of beta-carotene and folic acid, they contain phytochemicals and broccoli is an excellent source of vitamin C !

Healthy Eating with Vegetables and Fruit

Leader Information

Q: Are vegetables & fruit as nutritious as they used to be ?
A: Absolutely ! We have extensive nutrient data on most vegetables and fruits and it clearly shows that these foods are significant sources of beta-carotene, folic acid, vitamin C , potassium, as well as fibre and other nutrients in smaller amounts. It may be that some produce is even more nutritious than it once was; carrots, for instance, have twice as much beta-carotene as they did in 1950, according to the US Department of Agriculture.

What about the nutritional value of fresh produce that's picked too early ? Vine ripened produce may taste better but a tomato, for example, ripened on the vine is no more nutritious that a green tomato ripened on your counter.

Q: I often hear that vegetables and fruit lack nutrition because they are grown in depleted soils. Is this true ?
A: No. You need only look as far as your local supermarket to know that the soils growing our produce are not nutrient deficient. Depleted soils produce stunted crops with poor yields, not the bounty of beautiful vegetables and fruits we buy today. The very existence of beautiful produce is proof that they come from fertile soils supplying the basic elements needed by plants to grow to maturity and bear large, good quality flowers (ie broccoli) or fruit. If anything, our crop lands are healthier because of improved farming practices. One example of this is that potato production lands in Prince Edward Island now have higher levels of organic matter than a decade ago.

Q: Are fresh vegetables & fruit the best ?
A: You can't beat fresh produce for taste, texture and even colour but the notion that it's always more nutritious than frozen or canned vegetables and fruit isn't true. Studies comparing fresh cooked vegetables with canned and frozen products show very few significant differences in most nutrients.

The one exception is the sodium content of most canned vegetables which makes them nutritionally inferior, particularly when lower sodium alternatives such as frozen vegetables are available.

While we often associate processing with losses of nutrients, processing in the form of cooking or canning can have its advantages too. For example, the cancer-fighting phytochemical, lycopene, the pigment that gives tomatoes their red colour is more available from stewed tomatoes and pastes.

Mini - Lesson:
HEALTHY EATING WITH VEGETABLES AND FRUIT

OBJECTIVE

This mini-lesson is designed to encourage participants to eat more vegetables & fruit. Participants will discover what makes vegetables & fruit so important for good health, explore practical ways to increase their intake of produce and be invited to participate in the "5-to-10-a-day-challenge".

MORE VEGETABLES & FRUIT FOR GOOD HEALTH

Eating habits that include high intakes of vegetables and fruit are associated with several health benefits - reduced risk of cancer, heart disease and stroke. What's more, higher intakes of vegetables and fruit help keep your caloric intake in check and reduce the likelihood of developing problems such as constipation. All in all, eating more vegetables & fruit is a habit worth developing !

The basis for this mini-lesson is Canada's Food Guide to Healthy Eating recommendation to eat 5 -10 servings of vegetables & fruit daily. It also supports the campaign " 5 to 10 A Day, Are you getting Enough" sponsored by the Canadian Cancer Society, Heart and Stroke Foundation of Canada and the Canadian Produce Marketing Association. This campaign is designed to help consumers increase their daily intake of vegetables and fruit.

MATERIALS

- ❑ Canada's Food Guide to Healthy Eating Tear-sheet
- ❑ Worksheet: Search for the Stars ! 1 copy for each person
- ❑ Search for the Stars -Discussion Points for the Leader
- ❑ Worksheet: What's Stopping You ?
- ❑ What's Stopping You ? -Discussion Points for the Leader
- ❑ 5 Overheads: masters provided

Healthy Eating with Vegetables and Fruit

Mini-Lesson

- ❑ 1 blank overhead and markers needed
- ❑ Pencils
- ❑ Fact Sheet: Are you Getting Enough Vegetables & Fruit per day - The Challenge
- ❑ Evaluation
- ❑ Handouts: Pamphlet: 5 to 10 a day; Are You Getting Enough ? (sample provided)
  Fact Sheets: (Masters provided for copying)
  - Rise & Shine - It's Breakfast Time
  - I Have a Hunch - It's Time for Lunch
  - It's Time To Make Your Supper Super
  - Snack Your Way to a Healthy Day
  - Further copies can be obtained from: Canadian Cancer Society (local offices)

MINI-LESSON

EXPLORE CANADA'S FOOD GUIDE TO HEALTHY EATING

- Begin this lesson by telling participants that diets high in vegetables and fruit are linked with better health and for this reason we want to encourage people to eat more of these delicious and healthy foods.

  Distribute a copy of Canada's Food Guide to Healthy Eating to each participant. Draw participants' attention to the fact that the Vegetables & Fruit food group is the second largest arc of Canada's Food Guide. This shows us visually that these foods should to make up a greater proportion of our diets.

  Explain that most Canadians are not meeting Canada's Food Guide Recommendation to get 5 -10 servings of vegetables & fruit daily.

  A recent survey of Canadians' eating habits found that women eat less than 5 servings vegetables & fruit daily. Men get about 5 servings daily but as explained in the next point, this is not enough relative to their total energy (caloric) intake.

- Next, clarify the common misunderstandings about the number of servings recommended and the size of a serving.

  The number of servings, 5 - 10 daily, is not a minimum and maximum guideline. The number of servings needed by any one person depends on their total caloric (energy) needs.

  A child might aim for 5 servings daily whereas an adult woman should probably aim for 6 or 7 servings a day. Men, particularly those who work in physically demanding jobs or active, teenage boys are the ones needing the 10 servings a day.

  The size of each serving is also a common source of confusion. Serving sizes according to Canada's Food Guide to Healthy Eating are based on nutrient values, not on what is commonly thought of as a serving.

  For example, a serving of juice is just half a cup (125 mL) - a few gulps really. This means the average juice box is actually two servings of fruit.

The same goes for a serving of vegetables; a half cup of mashed potatoes is one serving. You may eat more like 1½ - 2 servings of this popular vegetable at a sitting.

Tip: Be sensitive to the cultural origins of your audience. Find out what vegetables and fruit are popular with a particular audience and use these vegetables and fruit as examples and in discussions.

PREPARE FOR A LEARNING ACTIVITY

- After these introductory comments, distribute the Worksheet: Search for the Stars ! This is a word search activity that will allow participants to discover just how valuable vegetables & fruit are to good health.

  Lead your group through this activity according to their knowledge and skill.

  - For more knowledgeable groups, let each person work independently on the word search.
    When everyone has completed the task, use OVERHEAD 1 to review the answers. Use information from the sheet: Search for the Stars! Discussion Points for Leaders to expand the information provided in the Search Clues.

  - With groups of lower literacy, lead the group through each Search Clue, letting group members name the vegetable or fruit to be searched. Once the words to be found are noted, either let participants search for the words individually or continue as a group, letting a participant point out to the others when the word has been located. Use OVERHEAD 2 to mark each word as it is found.

Summarize this activity with OVERHEAD 3 which highlights the major nutritional and health promoting characteristics of vegetables and fruit. Vegetables & fruit are great tasting foods that are:

✓ good sources of fibre
✓ key sources of vitamins
✓ key sources of health promoting phytochemicals
✓ low in energy
✓ low in fat

EXPLORE THE BARRIERS TO EATING MORE VEGETABLES & FRUIT

- Move from this first learning activity by saying something like this: " After this activity, it's clear why we should be eating more vegetables & fruit, so why are many of us finding it difficult to reach this goal ? Let's take a few minutes to explore some of the reasons why you may not be eating as many vegetables & fruit as you may like."

  Invite participants to offer reasons for not eating more vegetables & fruit. If the discussion is difficult to get going, use an example from the sheet, What's Stopping You - Discussion Points for Leaders to get the discussion going.

  Use a blank overhead or flip chart to record participants' reasons for failing to eat more vegetables & fruit. Number the reasons as you list them. (This will make it easier to assign a task to a working group in the next step of this activity). At this point, don't offer comment or invite suggestions for overcoming these barriers to healthy eating.

  When all of the reasons are noted, organize participants into small working groups of 3-4 people. Give each group the WORKSHEET: What's Stopping You ? Assign a reason healthy eating barrier to each group and let the group come up with three practical solutions or suggestions for overcoming this barrier.

  Ask each group to report back; as leader, write down the solutions offered.

  Summarize this activity by applauding participants for the practical and useful suggestions. Encourage participants by recommending small and realistic goals to increase vegetable and fruit consumption. For example, participants might start off by adding just one fruit a day as a snack or set a goal to include a salad with dinner three times a week.

PREPARE FOR THE CHALLENGE

- Begin to wrap this lesson up by telling participants that research shows that there are five key actions for increasing vegetables & fruit consumption. Using OVERHEAD 4 review these five tips or suggestions:

1. have fruit or fruit juice in the morning
2. eat fruit for a snack or as part of a snack
3. eat a salad or other vegetable at lunch
4. have two vegetables for dinner (remember - potatoes are a vegetable !)
5. eat fruit for dessert

At this point invite participants to take the "5-to-10-a-day-challenge" . Using OVERHEAD 5 briefly review how to participate in the Challenge. Distribute the **Fact Sheet: Are You Getting enough vegetables & fruit per day** to for each participant to take home.

- End by thanking everyone for participating in the workshop and asking if there are any outstanding questions. See Leader Information for answers to some common questions concerning this topic.

EVALUATION

Distribute the evaluation (page S137) for each person to complete. The feedback you get will be useful in planning future sessions.

HANDOUT MATERIAL RECOMMENDED

To obtain the following material see ordering information page S101

- Canada's Food Guide to Healthy Eating -tearsheet
  From: Local Public Health Units

- Pamphlet: 5 to 10 a day; Are You Getting enough ?
  From: Canadian Cancer Society 1-888 -939 -3333
  CCS web site: WWW.5to10ADAY.COM

- Fact Sheets: Are you Getting Enough Vegetables & Fruit per day
  - The Challenge (Masters provided for copying)
  Rise & Shine - It's Breakfast Time
  I Have a Hunch - It's Time for Lunch
  It's Time To Make Your Supper Super
  Snack Your Way to a Healthy Day

- Web Sites to check out:
  - Consumer's Association of Canada*
    www.consumer.ca Food Tips Project
    Shop Smart Tips - Tip sheets 3 and 4 have good shopping and storage information on vegetables and fruit.

  – Canadian Produce Marketing Association
    www. CPMA.ca

  – Heart and Stroke Foundation of Canada
    www.hsf.ca

  – Canadian Cancer Society
    www.cancer.ca

* Consumer's Association of Canada
267 O'Connor St., Suite 404, OTTAWA Ontario
K2P 1V3
613 - 226 - 4187.

WORKSHEET:
Search for the Stars !

Eating vegetables and fruit is very important — so important that we need 5 - 10 servings every day. Fruit and vegetables taste great and they can cut down your chances of having cancer, heart disease and stroke.

The word search box below contains the names of several fruits and vegetables. You'll be given clues to help you find the words. When you find one, put a circle around it.

Remember: the words don't always read as they would in a book. Some of them read across; some read up; some read down, and some are on the diagonal.

S	T	P	H	Y	T	O	C	H	E	M	I	C	A	L	A	L	A
N	T	M	P	S	G	Y	E	C	S	C	E	L	T	T	V	C	L
O	V	U	Y	C	G	O	O	A	A	I	C	A	R	R	O	T	L
R	O	M	A	I	N	E	O	G	I	B	C	H	E	E	C	E	I
A	F	D	M	I	S	C	U	C	U	M	B	E	R	A	A	P	C
N	B	R	O	C	C	O	L	I	O	U	R	A	M	F	D	Z	I
G	U	I	L	C	C	O	P	E	N	E	R	U	G	R	O	R	N
E	I	K	C	S	M	I	Y	S	L	R	O	T	P	E	A	R	R
T	T	O	E	B	W	M	Z	D	N	F	T	M	M	P	R	R	T
L	R	Y	L	C	A	N	T	A	L	O	U	P	P	O	R	V	C
B	X	B	E	E	O	C	C	H	I	K	P	E	N	G	E	R	E

Search for the Stars !

SEARCH CLUES

Search Clue: #1
Compared to other foods, vegetables and fruit are low in calories. This is why they are a good choice for dieters. This long, green-skinned vegetable is 96% water. It is almost calorie-free and is often found in salads.

Search Clue: #2
Nearly all vegetables and fruit are virtually fat-free. This delicious vegetable does contain fat. It is green, and butter-like and has a big pit.

Search Clue: #3
This long orange vegetable with a green, feathery top will give you more than double your daily need for vitamin A.

Search Clue: #4
The colour and the name of this fruit are the same and it is full of vitamin C. Just 1/2 cup of juice from this fruit gives you all the vitamin C you need in one day.

Search Clue: #5
This is A type of dark green lettuce, often used in Caesar Salad. It is an excellent source of folic acid. which is a B-vitamin needed for healthy blood and a healthy nervous system.

Search Clue: #6
This dark green vegetable with a cauliflower-like top is one of the most nutritious vegetables you can eat. Just 1/2 cup of it gives you lots of vitamins A and C and folic acid.

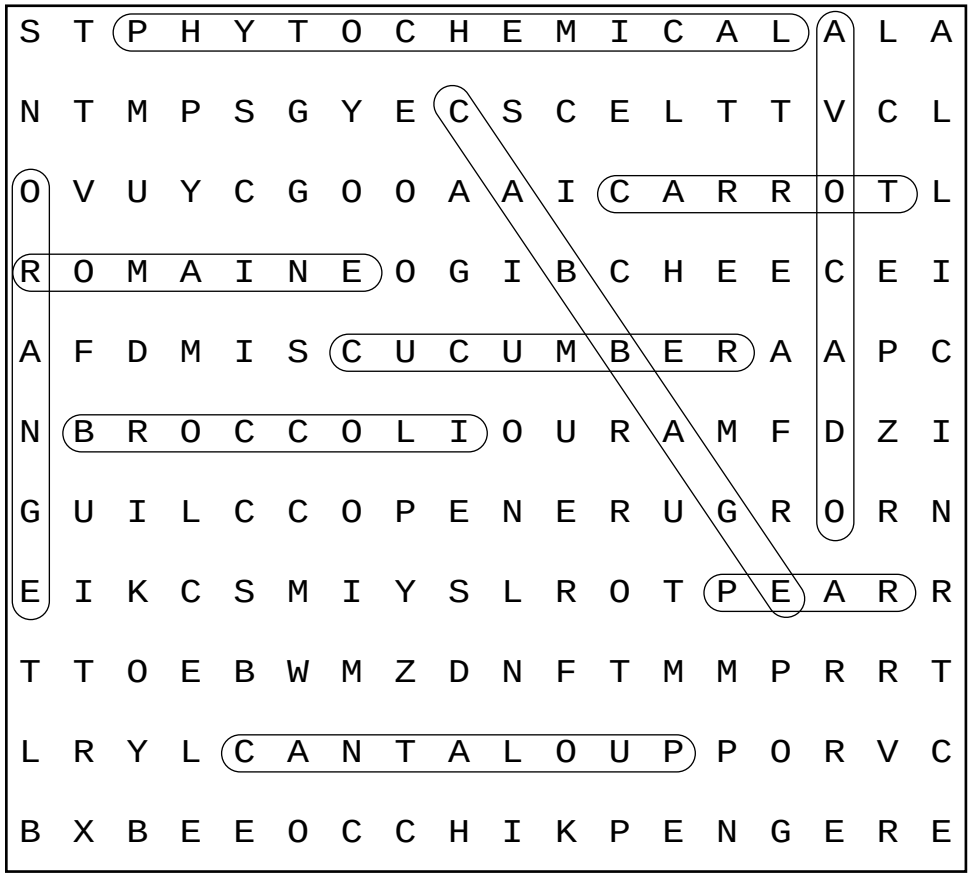
Search Clue: #7
This orange melon is a very good food. Just a half of one gives you twice the amount of vitamin C and almost all the vitamin A you need in a day.

Search Clue: #8
This fruit is green or yellowy-green and is round at one end. It contains lots of fibre. In fact, all fruits and vegetables are great sources of dietary fibre, which helps to lower blood cholesterol.

Search Clue: #9
Fruit and vegetables contain thousands of natural plant chemicals that have health benefits. For example, they can lower your chances of having cancer and heart disease. Can you find the scientific name of these beneficial plan chemicals. It starts with P and ends and ends with the word chemical.

Search Clue: #10
This green, leafy vegetable is the main ingredient in coleslaw. It is very nutritious and it contains cancer-fighting phytochemicals.

Search for the Stars !
Discussion Points for Leaders



Search Clue # 1: cucumber. Given a varied diet, including some higher and some lower calorie choices, you can estimate most fruit servings will provide about 70 calories and vegetables, 50 calories. Generally, juices and fruit canned in syrups are higher in energy (calories) as are the starchy vegetables like corn and potatoes. (1/2 cup sliced, raw cucumber provides 7 calories)

Search Clue # 2: avocado.This is truly the only exception for vegetables & fruit in their natural state. Even then, the type of fat provided by avocados is mostly monounsaturated which is a healthier form of fat. Generally, vegetables & fruit only contribute fat to your diet when they are deep-fat fried as with french fries or when fat is added in the form of dressing to salads. (1/2 avocado provides 13-15 grams of fat; 1 Tbsp.\15 mL of regular salad dressing provides 7- 10 grams fat; a small McDonald's fries provide 12 grams fat)

Search Clue # 3: carrot. Canada's Food Guide advises us to "choose dark green and orange vegetables and orange fruit more often " with good reason. These foods tend to be more nutritious. Other good choices in the orange-yellow-red range: pumpkin, squash, sweet potato, cantaloup, mango, orange,papaya, strawberries, watermelon. (1 medium size carrot (19 cm long) contains 22,644 International Units (IU) of vitamin A. The Recommended Daily Intake (RDI) for vitamin A is 1000 Retinol Equivalents or about 5500 IU Vitamin A)

Search Clue # 4: orange (juice). Orange juice has other advantages too - it's a good source of folic acid and contains phytochemicals that are known to protect health. Also mention that while citrus juices are natural sources of vitamin C, all fruit and vegetable juices in Canada are fortified with vitamin C up to a level equal to citrus juices. (1/2 cup orange juice from frozen concentrate provides 50 mg, fresh provides 65 mg. vitamin C. The current Recommended Daily Intake (RDI) is 60 mg.)

Search Clue # 5: Romaine. Spinach and asparagus are also excellent sources (55 micrograms or more per serving) of folic acid. Good sources -providing 33 micrograms of folic acid or more include: corn, bean sprouts, cooked broccoli, green peas, brussels sprouts, beets, orange, honeydew melon, raspberries, blackberries, avocado. (1 cup chopped Romaine Lettuce contains 80 micrograms \0.08 mg of folic acid)

Search Clue # 6: broccoli. All dark green vegetables are good choices. Canada's Food Guide to Healthy Eating gives emphasis to dark green vegetables by recommending you choose these and orange vegetables more often. Broccoli is usually bought as 2-4 stalks bound together. The head portion of a medium size stalk (diameter about the size of your palm, main stalk removed) weighs about 2 oz.\ 60 grams. Cooked this amount would give you: 833 IU of vitamin A, 45 mg. vitamin C, 30 micrograms (0.30 mg) folic acid.)

Search Clue # 7: cantaloup. All the melons are nutritious particularly those with an orange colour. One half of a cantaloup provides 8608 IU of vitamin A and 113 mg of vitamin C. The RDI for Vitamin A is 1000 RE (5500 IU) and for vitamin C - 60 mg.)

Search Clue # 8: pear. All vegetables & fruit provide fibre but pears, berries with seeds like raspberries and strawberries and dried fruits are also noted for being good sources of fibre. (one pear provides 5.1 grams of fibre. Compare this to these other popular fruits:

Fruit Medium-size	Grams of fibre
apple	2.6
banana	1.9
orange	2.4
5 strawberries	1.3
1/2 cup\125 mL raisins	2.8

Search Clue # 9: Phytochemical. In recent years researchers have discovered many health promoting chemicals in vegetables, fruit, grains and legumes. These chemicals have no nutritional value but are nevertheless good for us because they have anti-cancer and heart-protective effects. These chemicals are called phytochemicals. Some examples often in the news:

- Carotenoids in the orange-yellow vegetables and fruit
- Lignans in flaxseed, whole grains and berries
- Indoles and isothiocyanates in the cruciferous vegetables
- Phytosterols in soybeans, cucumbers and other vegetables and fruit
- Flavonoids in citrus fruit, grapes apples
    - Lycopene the red colour in tomatoes
    - Allicin in garlic and onions

Search Clue # 10: cabbage. The cabbage family of vegetables are also referred to as the " cruciferous" or " brassica " family of vegetables. Most of these vegetables are green - cabbage, broccoli, brussels sprouts, kale, collards, rapini, kohlrabi, bok choy, mustard greens. Cauliflower, turnip and rutabaga are the exceptions - although not green, these vegetables are members of the cabbage family too.

WORKSHEET:
What's Stopping You ?

Even though we know how good fruits and vegetables are, many of us don't eat 5 to 10 servings per day. If you are one of these people, think about what's stopping you, and list your reasons.

How could you overcome these barriers so you could eat more fruits and vegetables? List three things you could do.

✓

✓

✓

What's Stopping You ? Discussion Points for the Leader

Listed below are some frequently mentioned barriers to eating more vegetables & fruit. These are not the only barriers - your group may come up with many more examples.
You may not even need these suggestions if your group comes up with enough suggestions of their own. However, if the discussion is slow you might use these examples to stimulate discussion.

BARRIER: NOT ENOUGH TIME TO PREPARE
Suggestions:

- Use frozen mixed vegetables. They are clean, cut up and ready to boil or microwave.
- Keep mini-carrots or carrot, celery and pepper sticks cut up and ready to serve. Serve with a low fat salad dressing for dipping if desired.
- Keep snack-size canned fruit on hand
- Make extra salad. Store the extra undressed, in an air-tight tub or bag to use at a moment's notice. Add juicy items such as tomatoes just before serving.
- Wash hardier produce such as apples, beans, peppers, celery before storing but always dry very well to prevent premature spoilage

BARRIER: NOT READILY AVAILABLE AT WORK OR SCHOOL
Suggestions:

- This is simple to solve; plan ahead to take some vegetables and fruit with you as you leave for the day.
- Keep washed fruits on the counter - ready to grab for a snack
- Pack a few extra juice boxes or snack-size canned fruit to store in your desk or locker
- Keep a few longer-lasting fruits at your desk such as oranges, apples, bananas
- Keep trail mix containing dried fruit as a work-time snack
- Do you have access to a refrigerator ? If so, keep vegetables such as mini-carrots on hand for snacks.

BARRIER: DON'T LIKE MANY VEGETABLES

Suggestions:

- Eat more of the ones you like !
- Explore why vegetables are disliked. If it's an issue with texture, suggest a different preparation method. For example, stir-fry instead of boil; mash instead of boil; puree instead of bake; chop finely in food processor and add to casseroles.
- If it's the taste that is disliked, suggest different seasoning. Recommend experimenting with different herbs and spice mixtures such as lemon-pepper or onion-chive or using a low-fat salad dressing or dip with vegetables. Although it's not often recommended, adding a little butter or margarine, salt, and pepper may improve a vegetables acceptability. The benefits of eating more vegetables outweighs the disadvantages of a little extra fat and sodium.
- Adding sweetness may also help; brown sugar or maple syrup makes squash tastier as does a sugar glaze to beets.

BARRIER: SPOIL TOO QUICKLY

Suggestions:

- Plan your produce purchases more carefully; buy just what you need to last until the next shopping trip. Big bags are not a cost saving if the produce wilts, rots or sprouts and becomes unusable.
- Use the more perishable items (grapes, berries, asparagus, lettuce, sprouts, mushrooms) in the days after shopping, leaving longer lasting items like carrots, squash, broccoli, brussels sprouts for later on in the week

BARRIER: MY FAMILY WON'T EAT VEGETABLES

Suggestions:

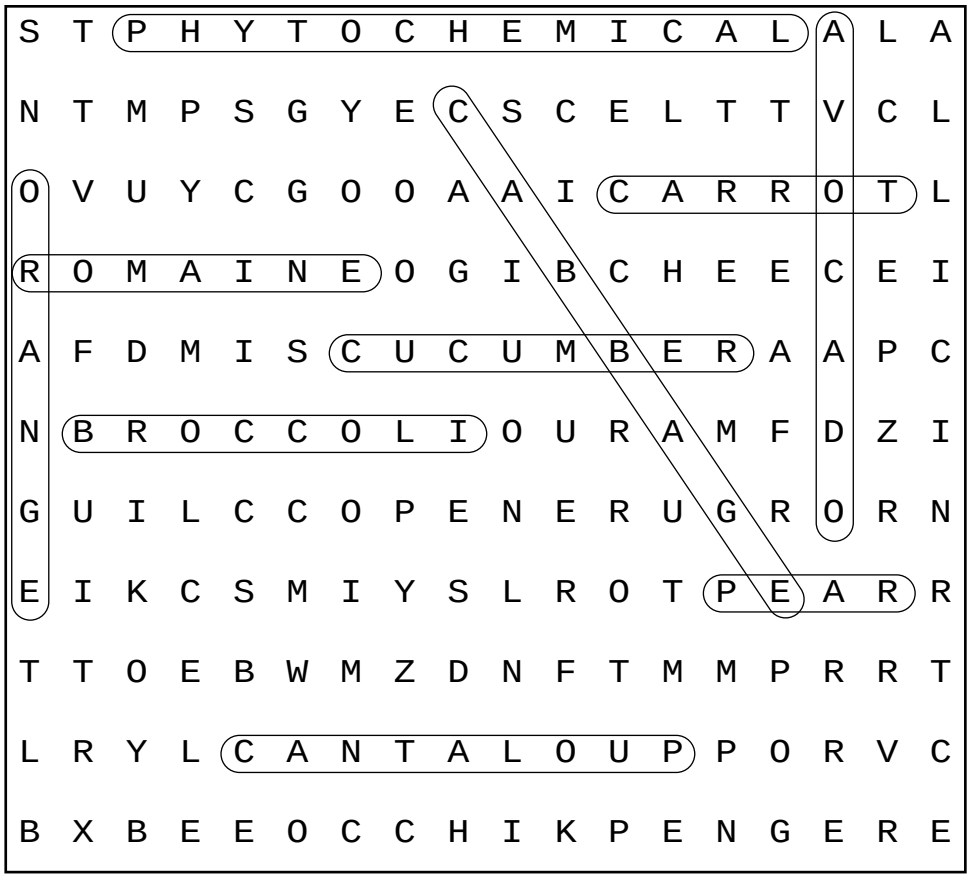
- Do not force disliked vegetables on family members but do continue to prepare the item for yourself and set a good example by eating it. A whole squash for instance can be cooked, pureed and re-heated easily in single serving portions as can dishes such as ratatouille (a mixture of onions, garlic, eggplant, zucchini, tomatoes)
- If vegetables like onions, parsnips, turnip and rutabaga are not well received, dice them very finely before adding to soups and stews

Healthy Eating with Vegetables and Fruit

OVERHEADS

OVERHEAD 1

Search for the Stars



OVERHEAD 2

Search for the Stars

S T P H Y T O C H E M I C A L A L A

N T M P S G Y E C S C E L T T V C L

O V U Y C G O O A A I C A R R O T L

R O M A I N E O G I B C H E E C E I

A F D M I S C U C U M B E R A A P C

N B R O C C O L I O U R A M F D Z I

G U I L C C O P E N E R U G R O R N

E I K C S M I Y S L R O T P E A R R

T T O E B W M Z D N F T M M P R R T

L R Y L C A N T A L O U P P O R V C

B X B E E O C C H I K P E N G E R E

OVERHEAD 3

Five Good Reasons to Eat Vegetables and Fruit

Vegetables & fruit are very good for you.

❏ They are good sources of fibre.

❏ They are excellent sources of vitamins.

❏ They are excellent sources of phytochemicals.

❏ They are low in calories.

❏ They are low in fat.

OVERHEAD 4

Five Key Ways to Eat More Vegetables and Fruit

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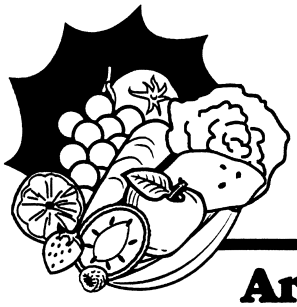
1. Have fruit or fruit juice in the morning.
2. Eat fruit for a snack or as part of a snack.
3. Eat a salad or other vegetable at lunch.
4. Have two vegetables for dinner.
5. Eat fruit for dessert.



OVERHEAD 5

FACT SHEET

Are you getting enough vegetables & fruit per day

The Challenge

It's time to take the 5-to-10-a-day-challenge. Simply use this chart to keep track of how many servings of vegetables and fruits you eat at each meal or snack. Get the kids involved - their participation and enthusiasm may surprise you. Award special prizes to those who eat at least 5 servings each day.

Just a reminder: One serving is equal to 1 medium size vegetable or fruit; 125 mL (1/2 cup) raw, cooked, frozen or canned vegetables or fruit; 125 mL (1/2 cup) juice; 250mL (1 cup) salad; 50 mL (1/4 cup) dried fruit.

Breakfast Ideas
* glass of juice
* half a grapefruit
* half a melon
* fruit on cereal
* fruit shake

Dinner Ideas
* veggie side dish
* stir-fry
* veggie pizza
* pasta with veggies
* fruit for dessert

Lunch Ideas
* salad
* soup
* fruit plate
* carrot sticks
* veggies in sandwich

Snacks Ideas
* piece of fruit
* dried fruit
* canned fruit cup
* juice pak
* veggies and dip

	Breakfast		Snack		Lunch		Snack		Dinner		Snack		Daily Total
MONDAY	_____	+	_____	+	_____	+	_____	+	_____	+	_____	=	_____
TUESDAY	_____	+	_____	+	_____	+	_____	+	_____	+	_____	=	_____
WEDNESDAY	_____	+	_____	+	_____	+	_____	+	_____	+	_____	=	_____
THURSDAY	_____	+	_____	+	_____	+	_____	+	_____	+	_____	=	_____
FRIDAY	_____	+	_____	+	_____	+	_____	+	_____	+	_____	=	_____
SATURDAY	_____	+	_____	+	_____	+	_____	+	_____	+	_____	=	_____
SUNDAY	_____	+	_____	+	_____	+	_____	+	_____	+	_____	=	_____

CANADIAN CANCER SOCIETY | SOCIÉTÉ CANADIENNE DU CANCER

5 to 10 a day
Are you getting enough?

HEART AND STROKE FOUNDATION
FONDATION DES MALADIES DU COEUR

Eating a Healthy Lunch

Eating a Healthy Lunch

Leader Information

LEADER INFORMATION

This mini-lesson focuses on the importance of a healthy mid-day meal. It emphasizes Canada's Food Guide to Healthy Eating as a tool for planning and choosing healthy lunches. Leaders are encouraged to read the document, *Food Guide Facts Background for Educators and Communicators* as preparation for leading this mini-lesson. (available from local Health Departments)

Ideally, lunch should contribute from one-quarter to one-third of the day's calories as well as significant amounts of nutrients such as vitamins and minerals. A healthy lunch is also very important for sustaining alertness and energy throughout the afternoon. No lunch or a poor lunch such as pop and chips is a missed opportunity to provide yourself with important nutrients and will likely leave you feeling tired, listless and hungry by late afternoon.

WHAT MAKES A HEALTHY LUNCH ?

The lesson plan promotes an easy, check-list method for ensuring a healthy lunch. Planning or choosing a lunch to include foods from three out of the four food groups with one of the choices being a vegetable or fruit constitutes an excellent lunch or as it is called in the mini-lesson - A HEALTHY EATING WINNER !

Of course, a lunch that includes foods from all four food groups is excellent too. However, it's not necessary to choose foods from all four food groups at each meal as long as the sum of the day's meals and snacks meet the Food Guide's recommendations for a day.

Chances are you will need to include foods from the Grain Products and Vegetable & Fruit group at most meals and snacks in order to meet the recommendations whereas Milk Products and Meat & Alternatives may be included only in some meals and snacks.

The importance of vegetables and fruit is emphasized for several reasons. Nutritionally these foods are very important sources of key vitamins, minerals and dietary fibre in addition to being naturally low in calories and fat. What's more, vegetables and fruit contain natural plant chemicals called phytochemicals that are linked to lower risks of cancer and heart disease. (See Mini-lesson, Healthy Eating with More Vegetables & Fruit)

Eating a Healthy Lunch

Leader Information

Studies show our intake of vegetables and fruit is lower than recommended and a serving of vegetables or fruit at lunch is a behaviour that has been linked to higher daily intakes of these important foods.

Choosing foods from at least three of the four food groups also ensures that the meal consists of some protein, fat and complex carbohydrates. This combination of nutrients gives the lunch staying-power - the foods will be digested and absorbed more slowly making the lunch satisfying for a longer time.

- **Protein** comes mainly from meat products, milk products and legumes.
- **Fat** comes mainly from meat products, milk products, butter, margarine, oils, mayonnaise as well as from snack foods such as chips and cookies.
- **Carbohydrates** come mainly from grain-based foods, legumes, milk products and vegetables and fruit.

Depending on the group, you might want to expand the discussion on the types of carbohydrate-containing foods that are best for lunches. Here is some extra information on carbohydrates:

There are two forms of carbohydrate in food:

Complex carbohydrate or starch: this type of carbohydrate is the predominate carbohydrate in the starchy foods such as bread, cereal, pasta, flour, grains such as rice and barley and legumes (dried peas, beans, lentils).
This form of carbohydrate is slower to digest and absorb, giving a longer lasting source of energy to the body.
Most of the carbohydrate you eat should be of this type.

Simple carbohydrate or sugars, occur naturally in milk, vegetables and fruit and also come from sugars, syrups, honey. This sweet-tasting form of carbohydrate makes food tasty and enjoyable but because it digests quickly it provides a short- lived source of energy to the body.

Emphasize that most of the carbohydrate at lunch should be complex carbohydrate to give the lunch more staying power. A lunch that provides complex carbohydrate ie bread in a sandwich or both types of carbohydrate (bread in a sandwich and a cookie) is okay but it's not a good idea to eat a lunch dominated by simple carbohydrate (pop and cookies) since this source of energy will be short-lived, leaving you hungry and tired much sooner than a more balanced lunch would.

Eating a Healthy Lunch

Leader Information

KEEPING PACKED LUNCHES SAFE TO EAT

People often worry about the safety of foods left in a lunch box for 3-4 hours. Generally, fresh foods that have been stored correctly and prepared with washed hands on clean surfaces will be safe to eat.

However, a few common sense precautions are worth noting:

- Food poisoning bacteria flourish in protein-rich, moist foods (meats, egg salad, soft cheeses) in warm temperatures so never leave a packed lunch in a locked-up car, near a heater or on a sunny window sill.

- If a refrigerator is unavailable, use an insulated lunch bag or container and include a small ice pack to keep foods cool

- Keep your lunch box clean - wipe it out regularly with hot soap and water.

- Wash sandwich and other containers well after using. Don’t reuse wrappings or sandwich bags.

- Always wash fruits and vegetables well

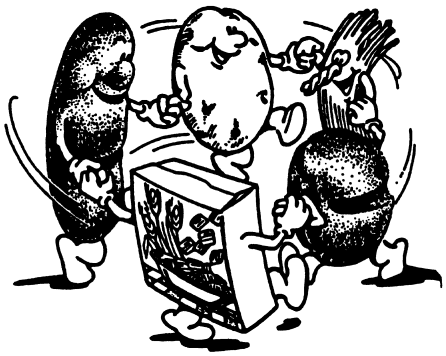
Mini - Lesson:
EATING A HEALTHY LUNCH

OBJECTIVE

This mini-lesson challenges participants to think about the types of lunches they prepare or choose and gives them the information needed to pack and choose more nutritious lunches for themselves and their families.

MATERIALS

- ❑ Canada's Food Guide to Healthy Eating (tear- sheet)
- ❑ Activity Sheets: Lunch Box 1 -12 (pages S47)
- ❑ Overhead Master: Lunchtime Checklist (page S79)
- ❑ Overhead Master: How Does this Lunch Rate? (page S81)
- ❑ Overhead Master: Handy Foods for Fast and Healthy Lunches (page 83)



Eating a Healthy Lunch

Mini-Lesson

MINI-LESSON

- Introduce this lesson with a brief discussion of the importance of lunch as part of a healthy eating pattern. Acknowledge that time and convenience are two key barriers to healthy eating and that a busy lifestyle can make lunch a hit-and-miss affair for many people. Emphasize however, that there are simple and easy ways to improve the nutritional quality of your lunch. Sometimes it may be as easy as keeping crackers and cheese and lots of fresh fruit on hand to take as you rush out the door in the morning.

- Explain that like any other meal, lunches should reflect the basic principles of healthy eating - they should be built around foods from the four food groups and factors such as fat and salt and fibre should be considered. At this point, distribute and quickly review the four food groups in Canada's Food Guide to Healthy Eating: Grain Products, Vegetables & Fruit, Milk Products, Meat & Alternatives.

- Go on to explain that a healthy lunch provides a mixture of protein, fat and carbohydrate, a combination that makes the effects of a meal last longer. A meal with a balance of these nutrients is satisfying, delays hunger for a longer time and helps prevent a tired feeling in late afternoon.

- Summarize your introductory comments, using OVERHEAD 1, Lunchtime Checklist (master page S79). Explain that as a general rule of thumb, lunch should provide foods from at least 3 of the 4 food groups and one of the three choices should be a vegetable or fruit.

Emphasize the importance of including a vegetable or fruit at lunch by telling participants that it will be easier to get the recommended 5-10 servings of vegetables & fruit daily by including at least one at lunch.

LUNCH ACTIVITY

- Organize the participants into small, working groups of 3-4 people. Distribute the Worksheets: Lunch Box 1 -12 to the small working groups in one of the following ways:

  - when time is lacking, give one Worksheet per group
  - with more time, give 2 or 3 Worksheets to each group. If you do this, mix the Lunchbox numbers (eg 1, 4 and 9) to ensure the group gets different quality lunches to evaluate.

With small groups or when time is short, consider working with just 6 of the 12 Worksheets, making sure you select Worksheets representing lunches of different nutritional quality. Suggested Worksheets if you choose only 6 lunches to evaluate: 1,3,5,7,8,11.

- Using the OVERHEAD 2, How Does this Lunch Rate ? Explain the rating system for the lunch evaluations.

A HEALTHY EATING WINNER ! To qualify a lunch must include foods from 3 of the 4 food groups from Canada's Food Guide to Healthy Eating and one of the foods must be a vegetable or fruit. If you have foods from all four food groups it's even better - an all-star lunch for sure !

EASILY MADE BETTER ! This lunch contains foods from only 2 of the 4 food groups but includes a serving of vegetables & fruit. Adding one other food from one of the food groups would upgrade this lunch into the A HEALTHY EATING WINNER! category.

COULD BE MUCH BETTER ! This lunch includes foods from 2 food groups but lacks a serving of vegetables & fruit.

A HEALTHY EATING JEOPARDY ! This lunch includes foods from 1 food group only. Improvement is definitely needed.

- Ask each group to analyze the Lunchbox menu(s) they have been given and jot down any comments or suggestions on the worksheet for discussion later. The correct rating of these lunches is provided in the Leader Information page S71 along with some extra points to use when discussing the menus with the group.

- When the task has been completed, ask each group to rate and discuss the lunch(es). Use the LunchBox Menu worksheets as overheads or have each menu written out on a flip chart so that all participants can follow along during this part of the activity.

- Summarize this learning activity with some ideas for packing quick but healthy lunches using the OVERHEAD 3, HANDY FOODS FOR PACKED LUNCHES ON THE GO (page S83). This overhead gives participants some ideas for foods to stock so that healthy lunches can be prepared in a few minutes.

- When you discuss food ideas for packed lunches you may want to discuss food safety which is a concern for some people. There are some food safety tips listed in Leader Information.

Eating a Healthy Lunch

Mini-Lesson

EVALUATION

Distribute the evaluation (page S137) for each person to complete. The feedback you get will be useful in planning future sessions.

HANDOUT MATERIAL RECOMMENDED

- Using the Food Guide - Booklet available from local Health Departments

- Fact Sheet: I Have a Hunch - It's Time for Lunch (master provided in "Healthy Eating with Vegetables and Fruit") Original From: Canadian Cancer Society

Activity
LUNCH BOX MENU 1

Bob never gets tired of sandwich lunch and this is one of his favourites!

Ham & cheese on whole grain bread
Carrot and celery Sticks
Fruit flavoured drink

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 2

A few times a week, Maria has a big salad and a few sesame bread sticks for lunch. Her salads contain mixed greens, pepper slices, cucumbers, cheese chunks, a chopped hard-boiled egg and sometimes some meat slices.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 3

Theresa has discovered that the hummus (chick pea dip) which she makes for parties and get-togethers can make a quick and tasty lunch. She eats humus with pita bread and a handful of mini-carrots.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 4

Instant soup cups are great for lunches on a cold day.

Enzo's favourite is Minestrone & Pasta soup.

The soup contains: ribbon pasta, dehydrated vegetables, textured vegetable protein, and parmesan cheese. Enzo also adds some crackers to the soup, and afterwards he has an orange.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 5

Selena has days when work is just one run-on meeting with no time for lunch. For days like this, she keeps a few lunch supplies in her desk drawer:

A snack-size bag of peanuts (60 - 75 grams/ 1/2 cup)
A vegetable juice box

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 6

Your seven-year old son loves pre-packaged ready-to-eat luncheon combos.

His favourite lunch is ham, cheese & crackers, cookies and a fruit drink.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 7

Even though making the filling takes a little extra time, Jane loves tuna or egg salad sandwiches for lunch.

Her favourite lunch is:

Tuna salad sandwich with lettuce on whole wheat bread and a diet pop.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 8

Because he has a microwave at work, Rafe can have a hot meal instead of a sandwich. He really likes the frozen dinners that are lower in calories and fat.

This is one of his favourites:

Frozen chicken & pasta with a few vegetables, and a glass of milk.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 9

Dianne is very concerned about her weight so likes to eat a light lunch. Two or three days a week she has a Caesar salad and a diet pop. The salad is made with bacon bits and croutons.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 10

There is nothing like leftovers for the next day's lunch. Luc's favourite leftovers are cold pizza and cold chicken. Today he had 2 slices of pepperoni-cheese pizza and a cola drink.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 11

Pat's favourite lunch come from a doughnut shop. When she goes through the drive-thru, it's ready in a few minutes.

She loves having a toasted sesame bagel with light cream cheese, and a regular coffee.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

Activity
LUNCH BOX 12

Ying is a very busy student. She needs a lunch she can throw in her back-pack and eat between classes. This is a favourite:

1% french vanilla yogurt and an oatbran & blueberry muffin.

HOW DOES THIS LUNCH RATE ?

❑ A healthy eating winner ! (at least 3 food groups, and one is a vegetable or fruit)

❑ Easily made better (2 food groups, and one is a vegetable or fruit)

❑ Could be much better (2 food groups but no vegetable or fruit)

❑ A healthy eating jeopardy ! (only 1 food group)

- **Why did you give this rating ?**

- **Can you suggest any ways to improve it ?**

EATING A HEALTHY LUNCH - ACTIVITY LEADER INFORMATION

(bold type indicates right answer)

The following information provides the correct rating for each Lunch Box and gives additional points for discussion.
If participants lack ideas for improving a lunch, encourage them to think about foods that could be added by asking questions like these:

"What type of beverage would improve this lunch."
(Lunch Box 1, 3)

"What is particularly good about the grain choice in Bob's lunch?"
(Lunch Box 1)

"Which Food Group(s) is(are) missing from this lunch?"
(Lunch Box 6, 11, 12)

"Do you think there is a serving of vegetables in a frozen meal?"
(Lunch Box 8)

LUNCH BOX MENU 1 - THIS LUNCH RATES AS :

- ❑ **A HEALTHY EATING WINNER !**
- ❑ EASILY MADE BETTER
- ❑ COULD BE MUCH BETTER
- ❑ A HEALTHY EATING JEOPARDY !

Bob has included foods from all four food groups in this lunch including a serving of vegetables. He gets extra points for choosing a whole grain bread. Although his beverage is a drink not a juice, his lunch is otherwise well rounded. Of course, a juice or milk would be even better.

LUNCH BOX MENU 2 - THIS LUNCH RATES AS :

- ❑ **A HEALTHY EATING WINNER !**
- ❑ EASILY MADE BETTER
- ❑ COULD BE MUCH BETTER
- ❑ A HEALTHY EATING JEOPARDY !

This is no ordinary salad. It provides at least a serving of vegetables, maybe more, and it includes cheese (Milk Product) and an egg (Meat Alternative) or some meat. The bread sticks count as a serving of Grain Product. A low-fat dressing would be the best choice of dressing.

LUNCH BOX MENU 3 - THIS LUNCH RATES AS :

- ❑ **A HEALTHY EATING WINNER !**
- ❑ EASILY MADE BETTER
- ❑ COULD BE MUCH BETTER
- ❑ A HEALTHY EATING JEOPARDY !

Theresa is on to something. Although this may seem more like snack food there's nothing wrong with this lunch. Hummus is a Meat Alternative. As a legume it is good for fibre and usually low in fat. The mini-pitas are a Grain Product - whole wheat pitas would be even better - and of course the carrots are one of most nutritious vegetables going. This lunch would be really great if a milk or yogurt were added to it !

LUNCH BOX MENU 4 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ **EASILY MADE BETTER**
- ❑ COULD BE MUCH BETTER
- ❑ A HEALTHY EATING JEOPARDY !

This lunch contains foods from just two food groups and one of them is a fruit. Instant soups can be a good choice for lunch although they can't stand alone.

This soup is mainly pasta and provides 1-1 1/2 servings of Grain Products. It is lower in fat and sodium too, making it a good choice over the instant soups that are high in fat and sodium.

The dried vegetables, the textured vegetable protein (soy) and the

parmesan are mainly flavouring - there's likely not enough of any of them to count as a food serving. The crackers count as a Grain Product just like the pasta. To upgrade this lunch just add a glass of milk or some cheese with the crackers.

LUNCH BOX MENU 5 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ **EASILY MADE BETTER**
- ❑ COULD BE MUCH BETTER
- ❑ A HEALTHY EATING JEOPARDY !

This lunch is a good start but it needs a little extra help - by way of a cheese string, yogurt, or a lower-fat muffin - to make it a winning lunch combination. The peanuts count as a Meat Alternative and the vegetable juice is a serving from the Vegetables & Fruit group. To move this lunch into A HEALTHY EATING WINNER! rating, add some crackers (Grain Products) or a pudding cup (Milk Products).

LUNCH BOX MENU 6 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ EASILY MADE BETTER
- ❑ **COULD BE MUCH BETTER**
- ❑ A HEALTHY EATING JEOPARDY !

Pre-packaged deli snacks and lunch meals are too high in fat and sodium and lack the fibre, vitamins, minerals and phytochemicals that come from vegetables, fruit and some fruit juices. They do however provide meat or cheese and some grain product in the form of crackers, tortilla rounds, corn nachos. If you buy them to perk up a ho-hum lunch routine, choose the snack-size products and add some vegetable sticks, fruit, or fruit juice to improve the overall quality of the lunch. By doing this you could upgrade the lunch from COULD BE MUCH BETTER to A HEALTHY EATING WINNER! although the fat and sodium makes these products poor choices on a regular basis.

LUNCH BOX MENU 7 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ EASILY MADE BETTER
- ❑ **COULD BE MUCH BETTER**
- ❑ A HEALTHY EATING JEOPARDY !

Eating a Healthy Lunch

Leader Information

Jane is almost there. Her lunch includes a food from the Meat Group in the form of tuna and the whole wheat bread counts as 2 servings of Grain products. But one or two lettuce leaves in the sandwich can't count as a vegetable serving nor does the pop add anything nutritionally to the lunch. How can Jane upgrade this lunch? All she needs to do is add a vegetable (carrot sticks maybe) or a fruit and this lunch becomes A HEALTHY EATING WINNER!

LUNCH BOX MENU 8 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ EASILY MADE BETTER
- ❑ **COULD BE MUCH BETTER**
- ❑ A HEALTHY EATING JEOPARDY !

This lunch suffers mainly from a lack of vegetables or fruit. Yes there are often a few green and orange bits to be found among the pasta but there's hardly enough to count as a serving. Add a salad or include a fruit to make this COULD BE MUCH BETTER meal become A HEALTHY EATING WINNER!

LUNCH BOX MENU 9 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ EASILY MADE BETTER
- ❑ COULD BE MUCH BETTER
- ❑ **A HEALTHY EATING JEOPARDY !**

There is only one food group to be found in this lunch and even this is a bit of a stretch ! All that counts here is the lettuce and unfortunately it is covered in a high-fat dressing. The bacon bits and croutons as used are seasonings and can't be counted for much. The diet pop adds nothing but fluid -too bad it wasn't a fruit juice or a milk. This is a poor lunch for anyone, let alone a weight watcher. Don't let the salad fool you - Caesar salad is traditionally high in calories and fat.

LUNCH BOX MENU 10 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ EASILY MADE BETTER
- ❑ **COULD BE MUCH BETTER**
- ❑ A HEALTHY EATING JEOPARDY !

You might be able to count the pepperoni-cheese pizza as counting for two food groups - Grain Products for the Crust and Milk Products for the cheese. There likely isn't enough pepperoni to count as a choice from the Meat Group and there is no vegetable or fruit. The cola drink adds nothing but calories and fluid. This lunch can be easily upgraded by choosing a juice for a beverage or including a piece of fresh fruit.

LUNCH BOX MENU 11 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ EASILY MADE BETTER
- ❑ COULD BE MUCH BETTER
- ❑ **A HEALTHY EATING JEOPARDY !**

Poor Pat - her lunch might taste good but it isn't good for her. The bagel is giving her the equivalent of 3 slices of bread and nothing else. Cream cheese doesn't count for a serving of Milk Products because its protein and calcium content are low. The coffee counts for nothing except calories. Pat could upgrade this lunch easily by choosing a fruit juice and including a yogurt or choosing milk and adding a fruit such as a pear.

LUNCH BOX MENU 12 - THIS LUNCH RATES AS :

- ❑ A HEALTHY EATING WINNER !
- ❑ EASILY MADE BETTER
- ❑ **COULD BE MUCH BETTER**
- ❑ A HEALTHY EATING JEOPARDY !

At least Ying is taking the time to include 2 healthy foods in her lunch. There aren't enough blueberries in the muffin to count as a serving of fruit but if she popped an orange or banana or fruit cup into her pack too, her lunch rating would jump from a COULD BE MUCH BETTER to A HEALTHY EATING WINNER.

Eating A Healthy Lunch

OVERHEADS

OVERHEAD 1

LUNCHTIME CHECKLIST

For a healthy lunch, you need something from at least 3 of these food groups. Make sure you include a fruit or vegetable.

✓ A fruit or vegetable: fresh, canned or dried

✓ Something made from grains: bread, pasta, crackers, tortilla wraps, muffins

✓ Something made from milk: milk, cheese, yogurt, yogurt drink

✓ Some meat or fish, or a kind of meat alternative such as egg, peanut butter, beans or lentils

OVERHEAD 2

HOW DOES THIS LUNCH RATE ?

LUNCH RATINGS	CRITERIA
A HEALTHY EATING WINNER !	Includes foods from 3 of the 4 food groups with AT LEAST one vegetable or fruit
EASILY MADE BETTER	Includes foods from 2 of the 4 food groups with AT LEAST one vegetable or fruit
COULD BE MUCH BETTER	Includes foods from 2 of 4 food groups but NO vegetable or fruit
A HEALTHY EATING JEOPARDY !	Includes foods from just 1 food group

OVERHEAD 3

HANDY FOODS FOR PACKED LUNCHES ON THE GO

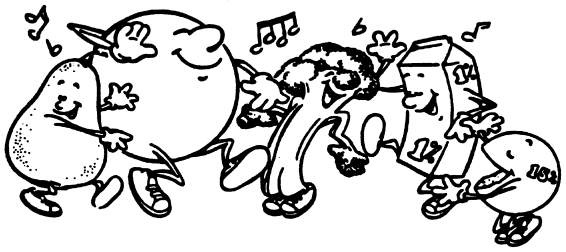
Vegetables & Fruit: Fresh fruit, fruit cups, mini-carrots, store bagged salads, real fruit leathers, dried fruits, salsa for dips

Grain Products: crackers, rice cakes, flat breads, mini-pitas and fresh bread sticks that you can freeze and use as needed

Milk Products: yogurt - cups, tubes or beverages
individual cheese packets:
mini-goudas,cheese strings, cheese & cracker snack packs

Meat & Alternatives: deli meats, canned tuna & salmon, sardines, nuts, seeds,
store-bought hummus

Healthy Eating: Getting Your Vitamins & Minerals



LEADER INFORMATION

The topic of vitamins and minerals is complex and leaders are encouraged to prepare themselves well for leading this lesson by reading this information carefully and following up with the resources recommended at the end of this section.

Leader's Note: The subject of vitamins and minerals is complex and this lesson plan is the most challenging of the lesson plans in this manual. It is also more lengthy than the other lessons as the activity alone could take approximately 30 minutes. As a pre-requisite to this lesson, consider doing the lesson plan, Healthy Eating with Vegetables & Fruit.

It is also recommended that you use this lesson plan with more knowledgeable groups.

If you want to do this lesson plan with a group but feel unsure about leading it entirely on your own, seek some help from a dietitian at your local health unit\department.

OBJECTIVE

The primary objective of this mini-lesson is to promote food as the primary source of vitamins and minerals and a healthy eating pattern as the key to obtaining them.

However, any discussion of vitamins & minerals, even one designed to promote food, is bound to come around to vitamin and mineral supplements. Although it is not the intention of this lesson plan to dwell on this subject area, this information is provided to help prepare you for the issues that are likely to come up.

FOOD FIRST

Food provides a natural mix of nutrients including vitamins and minerals as well as biologically active compounds such as phytochemicals (see sidebar) that we know promote good health - safely and without undue risk.

We know for instance that people who eat vegetables and fruit have a lower risk of cancer compared with those who don't eat these foods. No one nutrient or compound has been identified with this observation and so scientists have come to the conclusion that it is likely the mix of nutrients and compounds in vegetables and fruit that offer the health benefits.

The antioxidant vitamins, minerals and phytochemicals are really useful in reducing the harmful effects of free radicals and singlet oxygen. Antioxidants act by discouraging their formation or by neutralizing these highly reactive forms of oxygen before they reach and damage cells. (For more on this see the mini-lesson on Vegetables & Fruit)

Phytochemicals linked to reducing cancer risk:

- indoles and isothiocyanates in cruciferous vegetables - broccoli, brussels sprouts,cabbage, cauliflower, kale, bok choy, rutabaga, turnip
- isoflavones such as genistein in soybeans and soybean products such as tofu
- limonene in citrus fruits

Phytochemicals linked to better heart health:

- allicin in garlic and onions reduce blood cholesterol and blood pressure
- phytosterols in soybeans slow or prevent cholesterol absorption from foods
- lycopene in tomatoes and tomato products

VITAMIN FACTS

- Vitamins are organic compounds, meaning they come from living plants or animals that are essential for good health and indeed, life itself.

Getting your Vitamins & Minerals

Phytochemicals are natural compounds in vegetables & fruit that act as antioxidants. Antioxidant means "against oxygen". What antioxidants do is oppose harmful forms of oxygen called free radicals and singlet oxygen. We all have some of this harmful oxygen in us because it results from normal body processes. Trouble is, if these forms of oxygen are allowed to form and react in our bodies unchecked, they damage cells. These damaged cells are thought to be the first stages of heart disease and cancer.

Getting your Vitamins & Minerals

Leader Information

- Vitamins function in many different ways. They help to process other nutrients (proteins, fats, carbohydrates and minerals) and are involved in the formation of blood cells, hormones, generic material and nervous-system chemicals. They also assist enzymes in carrying out various functions and are called coenzymes in this function.

- A shortage of vitamins will lead to failed health, weakness, a vitamin deficiency and can, in extreme cases, lead to death although this is unlikely in our society.

- There are only 13 vitamins and they are divided into two groups: fat soluble and water soluble.

- **Fat soluble vitamins** (A,D,E, and K) need to be with fat to be absorbed. These vitamins are stored in body fat and so don't need to be eaten everyday. But because they can be stored, they can build up to toxic levels so you have to be careful not to get too much of these vitamins.

- **Water soluble vitamins** (the 8 B vitamins and vitamin C) don't need fat to be absorbed. These vitamins are not stored in the body to any great degree and are easily lost through sweat and urine. These vitamins must be consumed every day. These are the vitamins most easily lost through poor storage and overcooking with too much water in the pot.

- **Vitamins that Aren't:** from time to time, other substances that are supposed to be health aids are promoted as vitamins by faddists. Laetrile, an unproven cancer treatment is often called B17 and pangamic acid, sometimes called B15, have no known biological role and are not vitamins.

MINERAL FACTS

- Minerals are inorganic substances, meaning they don't come from plant or animal sources as do vitamins but are nevertheless, essential to life.

- Minerals are involved in a wide range of body functions. Many are part of enzymes that are responsible for initiating all cell reactions.
  They:
  - build body tissues ie calcium and phosphorous build bones
  - activate, regulate and control body processes ie sodium and potassium control shifts in body fluids; as an essential part of hemoglobin, iron carries oxygen to all body cells; iodine is an important part of the hormone, thyroxin; cobalt forms the core of vitamin B12;
  - transmit neurological processes ie calcium is required for normal transmission of nerve impulses

- There are many minerals in our food and environment but only some of them have been definitely identified as important to good health. In years to come it is likely that other minerals will join the current list of minerals that we know are essential to life

- Minerals are not as fragile as vitamins but some can be bound up by substances in our diet and thus be unavailable. For instance, oxalates in dark green vegetables often bind iron and calcium making these two minerals unavailable.

- Minerals are classified into two groups too: Macrominerals and Trace minerals.

  Macrominerals: calcium, phosphorous, magnesium, potassium, sulphur, sodium, chloride.
  You need macro minerals in larger amounts

  Trace Minerals: iron, zinc, selenium, manganese, molybdenum, copper, iodine, chromium, fluorine.

When Supplements are needed:

While food and healthy eating are promoted as the primary source of vitamins & minerals, it is recognized that vitamin & mineral supplements are useful and necessary in certain life stages such as pregnancy and for certain medical conditions such as iron deficiency anemia. However, in these cases, supplements are taken as part of a healthy eating pattern and not used to compensate for poor dietary habits.

Dietary supplements are used to partially replace food choices only in special circumstances, such as allergy and only under the advice and ongoing guidance of a doctor.

WHEN SUPPLEMENTS ARE APPROPRIATE

Vitamin & mineral supplements are useful and necessary at certain life stages and to treat certain medical conditions, including deficiency diseases such as iron deficiency anemia.

For instance, during pregnancy, folic acid and iron supplements are routinely recommended. Calcium and vitamin D supplements are often prescribed to women at menopause. Even heart patients today find themselves on large doses of B vitamins and Vitamin E.

In all of these cases, the nutrients are needed in amounts much higher than normal nutritional requirements and can't be realistically obtained from food.

When taken in amounts above nutritional needs, vitamins & minerals can produce unpleasant side effects, they can be potentially harmful and they can upset the metabolism of other vitamins, minerals and medications.

Here are a few examples to illustrate the disadvantages and potential dangers that vitamin and mineral supplements can have:

- Vitamin A (> 10,000 IU) causes severe birth defects so pregnant women shouldn't be supplementing without guidance from a physician or Registered Dietitian (RD)
- People on the drug Accutane for acne should never take Vitamin A because this drug is a high dose derivative of Vitamin A
- Vitamin B6 (> 200 mg), often used to treat the symptoms of Premenstrual Syndrome (PMS) can lead to nerve damage in hands and feet at relatively low doses
- Niacin (2 -3 grams), used with heart patients can give people flushing in the face, rashes, fatigue, headache
- Too much calcium reduces the absorption of iron
- Iron supplements can interfere with zinc metabolism

If a vitamin & mineral supplement is taken, a multivitamin/mineral supplement is the safest way to supplement because the dosages are usually not much higher than two to three times the Recommended Dietary Intake.

Single nutrient supplements usually provide higher amounts of a nutrient (up to ten times the RDI or more) and for this reason pose a higher health risk.

BEWARE THE HARD SELL

Promoters of supplements often leave people with the impression that a particular vitamin or mineral is the solution to complex health problems such as cancer and heart disease.

Remind people that heart disease and cancer are very complex health problems with several if not more causative factors.

While vitamin and mineral supplements may form part of a strategy to treat such a disease, it is unlikely that vitamins and minerals alone will be helpful.

Another tactic used by promoters of vitamin and mineral supplements is to create the fear that food has lost its nutritional quality because soils are depleted of nutrients. Are our soils depleted? You need only look as far as your local supermarket to know that the soils growing our produce are not nutrient deficient.

Depleted soils could never produce the bounty of beautiful vegetables and fruits we buy today. Their very existence is proof that they come from fertile soils supplying the 16 basic elements needed by plants to grow to maturity and bear large, good quality flowers (ie broccoli) or fruit.

If anything, our crop lands are healthier because of improved farming practices. One example of this is that potato production lands in Prince Edward Island now have higher levels of organic matter than a decade ago.

WHAT ABOUT NUTRITION ?

We have extensive nutrient data on most vegetables and fruits and it clearly shows that these foods are significant sources of beta-carotene, folic acid, vitamin C , potassium, as well as fibre and other nutrients in smaller amounts. It may be that some produce is even more nutritious than it once was; carrots, for instance, have twice as much beta-carotene as they did in 1950 according to the US Department of Agriculture.

And what about the nutritional value of fresh produce that's picked too early? Vine ripened produce may taste better but a tomato, for example, ripened on the vine is no more nutritious that a green tomato ripened on your counter.

Mini - Lesson: Healthy Eating: Getting Your Vitamins & Minerals

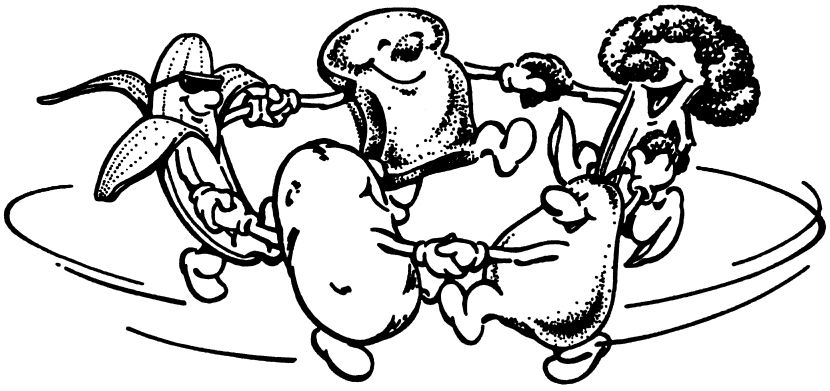
OBJECTIVE:

This mini-lesson explores the topic of vitamins & minerals and promotes healthy eating as the main source for these essential nutrients.

VITAMINS & MINERALS:
A HEALTHY EATING PHILOSOPHY

This manual supports the scientific evidence that food should be the primary source of all nutrients, including vitamins and minerals. Dietary supplements are not necessary for healthy people who follow a healthy eating pattern as recommended by Canada's Food Guide to Healthy Eating, (CFGHE).

The number and size of servings for each food group (see CFGHE) were established to meet all basic nutrient requirements as outlined in Canada's Nutrition Recommendations, to promote health and reduce the risk of diet-related conditions and diseases.



MATERIALS

- ❑ 8 Overheads - Masters provided
- ❑ Worksheet - Quiz: Food Finds
- ❑ Vitamin & Mineral Primer
- ❑ Food Chart: Some Vitamins & Minerals in Common Foods
- ❑ Optional: Quiz Answer Sheet (may want to give to participants)
- ❑ Pencils
- ❑ Calculator
- ❑ Flip chart or blackboard to help illustrate the calculations

Getting your Vitamins & Minerals

MINI-LESSON

- Introduce the topic of vitamins & minerals, using the points listed on OVERHEAD 1 as cues for the following discussion points.

  - Vitamins and minerals, particularly supplements are a topic of great interest these days. This interest is partly fuelled by more recent discoveries that certain vitamins & minerals may play a bigger role in overall health than just for good nutrition. For instance, it's now common to use certain vitamin supplements (eg vitamin E, folic acid, Vitamins B6 and B12) to treat heart patients. And supplements of folic acid are routinely recommended before conception and in the early weeks of a pregnancy to reduce the risk of neural tube defects in the unborn child.

  - There is also a growing lack of confidence in the nutritional quality of our food. Many people think food isn't as nutritious as it once was.

  - What's more, eating has become a haphazard effort for busy, stressed- out people that are juggling jobs and family responsibilities.
    No wonder then that almost 45 % of Canadians use dietary supplements of some type to promote health and to compensate for poor eating habits.*

- Go on to pose the question: "Should you be taking vitamin & mineral supplements for good health ? " Are they necessary ? Is our food lacking nutrients ? "

Use OVERHEAD 2 - ARE SUPPLEMENTS NECESSARY ? to guide your discussion on supplements.

*** 1999 Gallup Survey**

- Use OVERHEAD 3 to follow up on the last bullet point on OVERHEAD 2 - that healthy people following a healthy eating pattern don't need vitamin and mineral supplements.

  - Explain that the number and size of servings recommended for each food group (see Canada's Food Guide to Healthy Eating) were established to meet your basic nutrient requirements which are determined by Canada's Nutrition Recommendations.

  - Point out how the nutrients provided by each food group work together to provide a complete set of nutrients. Emphasize that at the end of the day, if you have eaten foods from all food groups, in the amounts recommended, you should have received the full range of nutrients in adequate amounts.

  - Also add that food has several advantages over supplements:

    • there is virtually no risk of getting too much of a vitamin or mineral.
    • other nutrients and food components may help absorption of the vitamin or mineral eg the milk sugar, lactose and vitamin D improve the absorption of calcium; non-heme iron from produce, grains and legumes is better absorbed in the presence of meat, poultry or fish
    • food gives you other benefits such as the thousands of phytochemicals abundant in vegetables and fruit that can't be provided by a pill

- At this point, when OVERHEAD 3 is still up, respond to the concern about food lacking nutrients. Tell participants that we have nutrient data on food that dispels this myth completely. Tell participants that they are going to be working with some of this data in a few minutes and they'll find out, first hand, just how nutritious food can be.

- Briefly explain what vitamins and minerals are and the roles they perform using OVERHEADS 4, 5 and 6 as cues.

Since people hear so much about antioxidants these days, this is a good point at which to mention the vitamins and minerals that act as antioxidants. Use OVERHEAD 7 to explain this.
Antioxidant means " against oxygen" and what antioxidants do is oppose harmful forms of oxygen.

Getting your Vitamins & Minerals

Mini-Lesson

Although we can't live without oxygen, some forms of oxygen called free radicals and singlet oxygen can be very damaging.

We all have some of this harmful oxygen in us because it results from normal body processes. The trouble is, if these forms of oxygen are allowed to form and react in our bodies unchecked, they damage cells. These damaged cells are thought to be the first stages of heart disease and cancer.

The antioxidants vitamins, minerals and phytochemicals (natural plant chemicals abundant in vegetables and fruit) are really useful in reducing the harmful effects of free radicals and singlet oxygen. Antioxidants act by discouraging their formation or by neutralizing these highly reactive forms of oxygen before they reach and damage cells.

Anti-oxidant Vitamins: beta-carotene, C and E

Anti-oxidant mineral: selenium

- Next, explain that you have an activity to do (individually or as a group) that will let participants discover for themselves just how well food can deliver the vitamins & minerals that are so good for health.

Distribute to each person:

Quiz Sheet: Food Finds
Vitamin & Mineral Primer
Chart: Some Vitamins & Minerals in Common Foods

- Prepare participants for the activity by explaining that the vitamin and mineral primer gives the main functions and food sources of the key vitamins and minerals. Consider making the first page of the primer an overhead.

  Tell Participants you're not going to review each vitamin & mineral in the workshop but this handout can be taken home as a reference.

  Draw attention to the third column and explain that the RDI stands for the Recommended Daily Intake. Tell participants that this number is a general guide for how much of a nutrient they need each day and they'll need to look at this column to complete the quiz.

- Next, explain that the handout "Some Vitamins & Minerals in Common Foods" gives data on foods in each of the food groups.

Using Bread as an example go across the row, highlighting each vitamin and mineral.

Explain that folate - also called folic acid and folacin - is given in milligrams as well as micrograms because it's reported both ways.

- Using OVERHEAD 8, work through question 1 of the Food Finds quiz as a group to make sure everyone knows how to use both worksheets to get the answer. Tell them it's okay to round off numbers - exact math is not needed.

- Allow participants to finish the task either individually or as small groups. Review the answers using the Leader's Answer sheet to add to the discussion.

- End the mini-lesson with a quick summary using OVERHEAD 9.

The points to be made:

- Our foods are nutritious and can supply the nutrients needed for good health if we follow a healthy eating pattern as outlined by Canada's Food Guide to Healthy Eating.
- Vitamins & minerals in food always come in safe amounts and don't put us at risk of getting toxic amounts. Often the vitamins and minerals in food are better absorbed because of other nutrients or components in food.
- Dietary supplements are useful at certain life stages and in certain circumstances but are not necessary for healthy people eating a healthy diet.

HANDOUT MATERIAL RECOMMENDED

To obtain materials not provided, see ordering information in the Original Healthy Eating Manual, Section 6: Resources.

- Vitamin and Mineral Primer (master provided for copying)

- Chart - Some Vitamins & Minerals in Common Foods (master provided for copying)

Worksheet:
Food Finds Quiz

Food, not pills, is your best source of vitamins and minerals. This exercise will show you why. You have two worksheets to help you:

Vitamin And Mineral Primer
Some Vitamins & Minerals In Common Foods

Scientists have figured out how much of each vitamin we need each day. This amount is called the recommended daily intake, or, in the short-from, the RDI.

---

1. How many carrots would you need to eat to meet the recommended daily intake (RDI) for Vitamin A ?

   _____

2. How many strawberries would give you the RDI for Vitamin C ?

   _____

3. Popeye liked his spinach because of the iron it contained. Would you eat spinach if you needed more iron?

   Yes ❑ No ❑

   Why ? _____

   Is spinach a good food for any other reason? Does it contain any other vitamins and minerals?

   _____

4. Talk about 2 for 1! Some vegetables and fruit provide both vitamin A and vitamin C, as well as other vitamins and minerals. Which one food would give you the RDI for both vitamin A and vitamin C?

   _____

5. Zinc is useful because it helps to keep the immune system healthy. Which three foods will each give you at least one-third of the RDI for zinc ?

   _____ _____

   _____

6. If your doctor said that your potassium levels were too low because of your blood pressure medication, which 5 foods would give you more potassium? Be careful; this is not as easy as it looks. If you have high blood pressure, you need to avoid too much sodium. Therefore, you need to find foods that are high in potassium, but not high in sodium.

   _____ _____

   _____ _____

   _____

7. Mmmmmm.....pumpkin pie. The average pie (cut in 8 pieces) has about 1/4 cup (50 mL) of pumpkin per slice. Is pumpkin pie just good-tasting, or is it a nutritious dessert? Why do you think so?

   _____

   _____

8. You probably know that milk products are good sources of calcium. Did you also know that they are also one of the best sources of a B vitamin. Which B vitamin is in milk?

   _____

   _____

   Which other foods on this list are excellent sources of this same B vitamin ?

   _____ _____

9. Processed cheese slices have 5 times more of this mineral than a glass of milk does. What mineral is it? Is it good to have this much of this mineral?

   _____

   _____

10. Red meat contains lots of iron, but another food on the list provides even more. Which food is this? Do you have any ideas why it contains so much iron ?

    _____

    _____

ANSWER SHEET for QUIZ: Food Finds

1. Just 1/4 of a medium-size carrot would give you all the vitamin A you need for a day. (5500 ¸ 23,000). Carrots and other orange and dark green vegetables are loaded with beta-carotene which is converted to vitamin A by your body.

2. Just 10 strawberries would do the trick - that's not hard to swallow!

3. If Popeye only knew ! There is some iron in spinach but it's very hard for the body to use. Although spinach does not contain much usable iron, and not much calcium, there are lots of other good reasons to eat spinach. It's an excellent source of potassium, vitamin A (in the form of beta-carotene), folic acid and vitamin C .

4. Lots of foods contain both vitamins A and C.
   The only one on this list that will give you the RDI for both these vitamins is cantaloup (8,608 IU vitamin A and 113 mg vitamin C).

   - Other foods rich in vitamin A and vitamin C:
     1 sweet red pepper (9348 IU of A, 312 mg C)
     1 papaya (6267 IU of vitamin A. 192 mg of vitamin C)

   - Other good sources of vitamin A and vitamin C:
     mango
     sweet potato
     oranges
     PLUS, beet greens, brussels sprouts, cabbage, kale, green pepper, tomato, turnip greens, pink grapefruit.

5. The answer is beef (4.4 mg), baked beans (3.8 mg) and nuts (3.8 mg).

6. The best sources of potassium are:
   baked potato (610 mg)
   banana (454 mg)
   cantaloup (825 mg)
   salmon (967 mg)
   spinach (330 mg)
   mango (323 mg)

Vegetables and fruit are good sources of potassium and they are low in sodium.

Please note: beans and nuts are high in potassium but they are also high in sodium if they are salted.

7. There's no need to say " no thanks" to pumpkin pie. One slice gives you over twice your daily vitamin A needs as well as a little potassium and iron. Just go light on the whipped cream topping.

8. The answer is B2 - riboflavin. One serving of milk or yogurt provides one-quarter of the RDI for riboflavin. Cheese is not a good source of riboflavin.

   Other Good Sources:
   - corn flakes, because the cereal is fortified
   - salmon.

9. Processed cheese has approximately five times more sodium than milk does. Sodium is important but most of us get too much. Processed, canned and convenience foods are some of the key sources of sodium.

All cheese is relatively high in sodium compared to other milk products, but processed cheese is very high. If you are on a lower salt or low sodium diet, avoid processed cheese.

10. Corn flakes provide 3.5 mg of iron. Most ready-to-eat breakfast cereals are fortified with many vitamins and minerals including iron. However, even though there is lots of iron in plant foods such as cereals and fruit, it is not easily used by the body. On the other hand, the iron which is found in meat and poultry is much easier to use.

To make it easy for your body to use the iron from the food you eat,

- wait an hour after a meal before you have your tea or coffee. These drinks make it harder for your body to absorb iron.
- vitamin C makes it easier for your body to use the iron from plant foods:
  - ❑ have juice with your cereal
  - ❑ have 1/2 a grapefruit with your breakfast egg
  - ❑ have an orange with your peanut butter on toast

Getting Your Vitamins and Minerals

OVERHEADS

OVERHEAD 1

Vitamins & Minerals: The Current Situation

- Lots of people are interested in vitamins and minerals.

- In fact, nearly half of all Canadians take a vitamin or mineral supplement – that is, they take vitamins or minerals in pills or powder form.

- Why?
  - they want to improve their health
  - they want to feel better
  - they want to make up for poor eating habits
  - they are afraid their food lacks nutrients

OVERHEAD 2

Are Vitamin And Mineral Supplements Necessary ?

- **Yes** – for certain people at certain times of life.

  For example:

  - iron and folic acid are important before and during pregnancy
  - calcium and vitamin D are important at menopause
  - Vitamin B12 is important for vegans.

- **Yes** – for the prevention and treatment of certain medical problems. For example:

  - iron is needed to prevent iron-deficiency anemia
  - calcium is needed to prevent osteoporosis
  - B vitamins AND vitamin E are needed for people with heart disease
  - Folic acid during pregnancy is needed to reduce the risk of certain birth defects

- **No** – for healthy people who eat a well-balanced diet. People who eat a good diet (as outlined by **Canada's Food Guide to Healthy Eating**) do not need to take vitamin and mineral supplements.

OVERHEAD 3

Key Nutrients in Canada's Food Guide To Healthy Eating

Each food group provides a different set of nutrients.

Follow **Canada's Food Guide to Healthy Eating** to get all the nutrients you need for good health.

Grain Products	+ Vegetables and Fruit	+ Milk Products	+ Meat and Alternatives	= The Food Guide
protein		protein	protein	protein
		fat	fat	fat
carbohydrate	carbohydrate			carbohydrate
fibre	fibre			fibre
thiamin	thiamin		thiamin	thiamin
riboflavin		riboflavin	riboflavin	riboflavin
niacin			niacin	niacin
folacin	folacin		folacin	folacin
		vitamin B_{12}	vitamin B_{12}	vitamin B_{12}
	vitamin C			vitamin C
	vitamin A	vitamin A		vitamin A
		vitamin D		vitamin D
		calcium		calcium
iron	iron		iron	iron
zinc		zinc	zinc	zinc
magnesium	magnesium	magnesium	magnesium	magnesium

Source: Health Canada *Using the Food Guide* 1992

OVERHEAD 4

Vitamin Facts

- **What Are Vitamins?**

Vitamins are natural compounds that come from plants or animals

- **What Do They Do?**
  - Vitamins help your body use the food you eat
  - Vitamins are needed for making red blood cells, hormones, genetic material, and the chemicals that control your nervous-system.
  - Vitamins help enzymes do their job

- There are two kinds of vitamins:
  - **Fat Soluble**
  - **Water Soluble**

OVERHEAD 5

Vitamin Facts (Cont'd)

Fat Soluble Vitamins: Vitamins A, D, E, and K

- ❏ These vitamins need fat in order to be absorbed.
- ❏ These vitamins can be stored in the body fat, so we don't need them every day.
- ❏ These vitamins are more likely to be toxic than water soluble vitamins if you take large amounts.

Water Soluble Vitamins: B vitamins and Vitamin C

- ❏ They don't need fat in order to be absorbed.
- ❏ They are not stored in body tissues so we need them every day
- ❏ They are easily lost in the sweat and the urine
- ❏ These can easily be lost if foods are not properly stored or cooked.

OVERHEAD 6

Mineral Facts

- **What Are Minerals?**
  Minerals, which come from the earth, are needed in small amounts.

- **What Do They Do?**
  - Minerals are used throughout the body
  - They help build the body; e.g. calcium and phosphorous build bone
  - They regulate and control processes in the body
    e.g.: - iron is needed to make haemoglobin
    - sodium and potassium control fluid balance
    - iodine is needed to produce thyroxin
    - calcium is needed to transmit nerve impulses

- There are two kinds of minerals:

Macrominerals:
calcium, phosphorous, magnesium, potassium, sulphur, sodium, chloride.

Trace Minerals:
iron, zinc, selenium, manganese, molybdenum, copper, iodine, chromium, fluorine.

OVERHEAD 7

Antioxidants

- Harmful forms of oxygen can damage cells in the body.
- Scientists believe that these damaged cells are the very first stages of cancer and heart disease.
- Antioxidants are compounds that are found in food and can neutralize these harmful forms of oxygen.
- Some antioxidants:
  - vitamin A, vitamin C and vitamin E
  - selenium
  - phytochemicals

OVERHEAD 8

FOOD FINDS QUIZ QUESTION 1

- Look at the **Vitamin & Mineral Primer.**

  The RDI for Vitamin A is 5,500 IU.

- Look at the chart called **Some Vitamins & Minerals in Common Foods.**

  There are 22,644 IU of Vitamin A in one carrot. (Round off the 22,644 to 23,000 IU.)

- If 23,000 IU are in 1 carrot, then how many carrots would you need to eat to get only 5,500 IU?
  5,500 / 23,000 = 0.239 or about 1/4 of a carrot.

➔➔ You only need 1/4 of a carrot to get your recommended daily intake of vitamin A.

OVERHEAD 9

MINI-LESSON SUMMARY

- If you eat well, your food can give you all the vitamins and minerals you need for good health.
- The vitamins and minerals found in food are in safe amounts. There is no danger of taking the wrong amount and they come packaged with other useful nutrients.
- Only some people need vitamin & mineral supplements.

VITAMIN & MINERAL PRIMER

LEGEND: RE -Retinol Equivalents IU -International Units mg- milligrams mcg-micrograms NE -Niacin Equivalents

*VITAMIN **	*MAIN ROLE*	*RDI**	*KEY FOOD SOURCES*
Vitamin A	- helps maintain normal bone and tooth development; important for night vision; maintains health of skin, hair and mucous membranes	**1000 RE (approx 5500 IU)**	- dark green and yellow-orange vegetables & fruit; milk; cheese; butter; margarine; egg
Beta-carotene - precursor to vitamin A found in plants	- as an anti-oxidant, beta-carotene neutralizes cell-damaging, unstable oxygen molecules and free radicals	**No separate RDI - included in RDI for Vitamin A. Four to five servings of dark green and orange vegetables daily provide 6-10 milligrams (mg) or 10,000 -16,600 IU**	- dark green and yellow-orange vegetables & fruit; milk; cheese; butter; margarine; egg
Vitamin D	- enhances calcium and phosphorous absorption and so is crucial for formation and maintenance of bones and teeth	**5 mcg (200 IU)**	- in very few foods: salmon, egg yolk, fortified milk, margarine
Vitamin E	- as an anti-oxidant, vitamin E protects the fat in body tissues from the damaging effects of unstable oxygen molecules and free radicals	**10 mg (16 IU)**	- vegetable oils and margarine; wheat germ; nuts; seeds; whole grains; spinach; Swiss chard
Vitamin C	- factor in the development and maintenance of bones, cartilage, teeth and gums - also an antioxidant vitamin that neutralizes harmful free radicals - helps iron to be absorbed	**60 mg**	- citrus fruit; papaya; cantaloup; kiwi; strawberries ; broccoli ; brussels sprouts; peppers ; potatoes; all juices
Vitamin B1 - Thiamin	- releases energy from carbohydrate - maintains healthy nervous system	**1.3 mg**	- meat; whole grain bread and cereals; fortified breads, cereals, pasta, flour
Vitamin B2 - Riboflavin	- helps release energy from protein, carbohydrate and fat; - needed for good vision and smooth skin	**1.6 mg**	- milk products; eggs; meat; fortified breads, cereals, pasta, flour

VITAMIN & MINERAL PRIMER

LEGEND: RE -Retinol Equivalents IU -International Units mg- milligrams mcg-micrograms NE -Niacin Equivalents

*VITAMIN **	*MAIN ROLE*	*RDI**	*KEY FOOD SOURCES*
Vitamin B3 - Niacin	- aids in normal growth and development - works with thiamin and riboflavin to produce energy in cells	**23 NE or 23 mg**	- meat; fish; nuts; legumes; milk; fortified breads, cereals, pastas, flour
Vitamin B6- pyridoxine	- helps in absorption and metabolism of protein; - helps body use fat - involved in red blood cell formation	**1.8 mg**	- meat; fish; nuts; bread; corn; whole grain cereal; fortified cereals
folacin (folic acid; folate)	- aids in red blood cell formation - intakes greater than the RDI reduce risk of neural tube defects in unborn child if taken before conception and in early weeks of pregnancy	**220 mcg or 0.2 mg**	- spinach; broccoli; asparagus; green peas; brussels sprouts; beets, Romaine lettuce; orange & pineapple juice; sunflower seeds; legumes; lima beans, corn; cantaloup, eggs, all-bran cereal
Vitamin B12 - cyanocobalamin	- aids in red blood cell formation and maintaining a healthy nervous system; helps build genetic material; helps the functioning of nervous system	**2 mcg**	- meat; fish; poultry; dairy products; fortified cereals (not in plant foods at all; difficult for vegans to get)
Pantothenic Acid	- helps release energy from protein, fat and carbohydrate - aids in formation of hormones and nerve-regulating substances	**7 mg**	- in most foods - eggs, meat, milk, vegetables, whole grains; nuts; fortified cereals
Biotin	- necessary for normal growth and development of nervous tissue, skin, hair, blood cells - helps release energy from carbohydrates	**No RDI** **USA recommendation -25 -30 mcg**	- in most foods: egg, soy beans; sardines; salmon; chicken; cereals, nuts, vegetables; fortified cereals

VITAMIN & MINERAL PRIMER

LEGEND: RE -Retinol Equivalents IU -International Units mg- milligrams mcg-micrograms NE -Niacin Equivalents

*MINERAL***	*MAIN ROLE*	*RDI**	*KEY FOOD SOURCES*
Calcium	- essential for formation and maintenance of bones and teeth - involved in muscle contraction - maintaining cell membranes - activates enzymes - aids blood clotting	**1100 mg**	- all milk products; tofu set with calcium sulphate; sardines; salmon with bones; scallops; bok choy; kale; green cabbage; broccoli; brussels sprouts; legumes; nuts; seeds; calcium-fortified juices
Phosphorous	- essential for formation and maintenance of bones and teeth - used by enzymes that store and release energy in all cells	**1100 mg**	- meat; milk products; eggs; whole grains; legumes; nuts
Magnesium	- helps to build bones, manufacture proteins, release energy from muscle glycogen; conducts nerve impulses to muscles	**250 mg**	- meat; milk products; sea food; whole grains; legumes; nuts
Sodium and Potassium	- these minerals work together to maintain fluid balance and regulate transmission of nerve impulses and muscle contractions	**No RDI - intakes are more than adequate, often excessive in case of sodium**	- potassium rich foods* : dried apricots; avocados, bananas; lima beans; brussels sprouts; carrots; spinach; tomatoes; oranges; potatoes * needed when taking some diuretic medication for high blood pressure
Zinc	- essential component of enzymes that regulate cell division, growth, wound healing and proper functioning of the immune system	**9 mg**	- red meat; shell fish, particularly oysters; nuts; legumes; whole grains; milk and egg yolk
Selenium	- works with vitamin E in an antioxidant role	**No RDI- estimates put need at about 50 mcg daily. The Canadian diet is estimated to provide 2 to 5 times this amount.**	- whole grain cereals; meat; poultry; dairy products
Iodine	- factor in the normal function of thyroid gland	**160 mcg**	- Iodized salt; milk;
Iron	- component of hemoglobin in red blood and myoglobin in muscle cells which carry oxygen to all cells - part of some enzymes and proteins	**14 mg**	- meat; poultry; fish; ready-to-eat cereals; enriched pasta; legumes; nuts; seeds; whole grains. **Note: dark green vegetables such as spinach are not good sources of available iron**

VITAMIN & MINERAL PRIMER

* RDI is the Recommended Daily Intake. It's used here to give you an approximate idea of how much of any one nutrient you need on a daily basis.

You can also use the RDI as a benchmark against which nutrient supplements can be compared. The RDI is usually used as a standard for the nutrition labeling of foods so that a food manufacturer can calculate the percentage nutrient contribution of a food serving. For instance, a label on a juice box might state: provides 100 % of RDI for Vitamin C.

The RDI doesn't reflect the exact recommendation for any one age group. To establish the RDI for a nutrient, Health Canada selects the Recommended Nutrient Intake from the age group with the highest needs. It's often the Recommended Nutrient Intake for adolescent males that gets chosen as the RDI. Since adults don't need as much of most nutrients as growing teenage boys, they won't need quite as much as the RDI suggests.

* Other vitamins: Vitamin K helps blood to clot; it is found in some foods - vegetables mostly - but is also made by bacteria in the gastrointestinal system.

** Other minerals of importance to human health: sulphur; chloride; copper; fluorine; chromium; manganese; molybdenum

Healthy Eating Manual 2000

SOME VITAMINS & MINERALS IN COMMON FOODS

The foods in this list represent the major food groupings - grain products, vegetables & fruit, milk products meat and meat alternatives such as legumes, eggs and nuts. Foods are generally grouped together because they provide similar types of nutrients although the amounts are not always equal. Although you don't get a full range of foods here, the vitamins and minerals found in these examples are likely found in other foods within the same group of foods.

Legend: mg -milligrams mcg - micrograms IU -International Units NE -Niacin Equivalents Tr- trace N\A -not available

Food	*Serving Size*	*Calcium mg*	*Iron mg*	*Zinc mg*	*Sodium mg*	*Potassium mg*	*Vitamin A IU*	*Vitamin C IU*	*Vitamin B6 mg*	*Folate meg/mg*	*Thiamin mg*	*Riboflavin mg*	*Niacin NE*
Bread - Whole Wheat	1 slice	20	0.9	0.5	149	71	0	0	0.05	14 \ 0.014	0.10	0.06	1.7
Cereal - Corn Flakes	1 cup 250mL	1	3.5	0.1	255	29	0	0	0.16	16 \ 0.016	0.52	0.71	1.6
Pasta- Spaghetti cooked	1 cup 250 mL	10	2.1	0.8	1.5	46	N\A	0	0.05	10 \ 0.010	0.30	0.15	4.0
Broccoli- fresh 3 spears	or 1/2 cup \ 125mL chopped	45	0.8	0.4	25	302	1434	87	0.15	66 \ 0.066	0.06	0.11	1.0
Carrot Raw	1 medium	22	0.4	0.2	28	260	22,644	7	0.12	11 \ 0.011	0.08	0.05	0.9
Potato Baked, flesh only	1 - 12 cm long	8	0.5	0.5	8	610	0	20	0.47	14 \ 0.014	0.16	0.03	3.0
Pumpkin Canned	1/2 cup 125 mL	34	1.8	0.2	6	267	28,549	5	0.07	16 \ 0.016	0.03	0.07	0.8
Spinach Chopped Raw	1 cup 250 mL	59	1.6	0.3	47	330	3,973	17	0.12	115 \ 0.115	0.05	0.11	0.8
Sweet Potato Boiled, mashed	1/3 cup 75 mL	22	0.6	0.3	14	191	17,732	18	0.25	12 \ 0.012	0.06	0.15	1.0
Mixed Frozen vegetables Cooked	1/2 cup 125 mL	24	0.8	0.5	34	163	4,113	3	0.07	18 \ 0.018	0.07	0.12	1.3
Banana	1 medium	7	0.4	0.2	1	454	93	10	0.66	22 \ 0.022	0.05	0.11	0.8
Cantaloup	1/2 cantaloup	29	0.6	0.4	24	825	8,608	113	0.31	45 \ 0.045	0.10	0.06	2.0

SOME VITAMINS & MINERALS IN COMMON FOODS

Legend: mg -milligrams mcg - micrograms IU -International Units NE -Niacin Equivalents Tr- trace N\A -not available

Food	*Serving Size*	*Calcium mg*	*Iron mg*	*Zinc mg*	*Sodium mg*	*Potassium mg*	*Vitamin A IU*	*Vitamin C IU*	*Vitamin B6 mg*	*Folate meg/mg*	*Thiamin mg*	*Riboflavin mg*	*Niacin NE*
Mango	1 medium	21	0.3	0.1	4	323	8061	57	0.28	2 \ 0.002	0.12	0.12	1.5
Orange	1 medium	52	0.1	0.1	0	237	269	70	0.08	40	0.11	0.05	0.6
Straw-berries	5 medium	8	0.2	0.1	1	100	16	34	0.04	11 \ 0.011	0.01	0.04	0.2
Milk 2 %	1 cup 250mL	314	0.1	1.0	129	398	529	2	0.11	13 \ 0.013	0.10	0.43	2.2
Cheddar Cheese Slices	2 thin slices	239	0.3	1.2	664	116	380	0	0.06	3 \ 0.003	0.01	0.18	2.0
Egg Large Poached	1 egg	24	0.7	0.6	140	60	316	0	0.06	18 \ 0.018	0.02	0.22	1.3
Salmon Atlantic Baked or Broiled	5 oz. 154 grams	23	1.6	1.3	86	967	68	0	1.45	45 \ 0.045	0.42	0.75	22.8
Beef Steak Inside Round	3 oz. 90 grams	5	2.4	4.4	44	346	0	0	0.48	10 \ 0.010	0.10	0.23	10.1
Chicken Roasted	1/2 breast 3 oz. 90 grams	5	0.6	1.0	73	395	21	0	5.9	4 \ 0.004	0.07	0.11	19.7
Baked beans Canned, no pork	1 cup 250 mL	134	0.8	3.8	1,065	794	459	8	0.36	64 \ 0.064	0.41	0.16	3.7
Mixed nuts salted, oil roasted	1/2 cup 125 mL	81	2.4	3.8	489	436	14	0	0.18	62 \ 0.062	0.37	0.17	6.9

Source: Nutrient Value of Some Common Foods 1999

Evaluation Form:
Tell us what you think

TELL US...	*YES*	*NO*
1. Did you enjoy yourself today?		
2. Did you learn something new?		
3. Will you make any changes in your diet as a result of today s session?		
4. Is there anything else you would like to say about today s session?		

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