



Nutrition, Radiation Therapy and Brain Cancer

Why is nutrition important?

Eating well can help you:

- Maintain your weight, strength, and energy
- Heal wounds and repair tissues after treatment
- Support your immune system to fight infections
- Cope with treatment side effects

Treatment Side Effects

Side effects from brain radiation therapy can make eating difficult. Every patient may experience different side effects. Here are some common side effects and ways to manage:

Nausea & Vomiting

Ask your doctor about medications to relieve nausea and/or vomiting.

- Eat 5 to 6 small meals throughout the day
- **Drink fluids 30-60 min. before or after eating**
- Sip fluids throughout the day. Aim for 6-8 cups per day: ginger ale, clear soups, juice
- Try plain or dry foods: toast, cereal, crackers
- Do not lie flat immediately after eating
- If the smell of foods makes your nausea worse, choose cold foods or foods at room temperature: cheese and crackers, cottage cheese and fruit, yogurt with fruit
- If you vomit, try clear liquids first:
 - 1 teaspoonful every 10 minutes
 - 1 tablespoonful every 20 minutes
 - 2 tablespoonfuls every 30 minutes

Slowly work up to your regular diet

- Try to limit Overly sweet, spicy, fatty, greasy, or fried foods

Taste Changes

Some foods may taste metallic, while others can taste bitter. Keep trying foods you like as food will taste different from time to time.

- Use plastic eating utensils and avoid cooking in metal pots to reduce the metallic taste
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- Flavour foods with mild herbs and spices: basil, oregano, rosemary, tarragon, lemon
- Rinse your mouth before and after eating with baking soda and water (1/4 tsp. in 1 cup water) or salt and water (1/8 tsp. in 1 cup water).
- Tart foods may reduce the metallic taste and enhance flavours: oranges, lemons, pickles
- Cold foods have less smell and may taste better: chilled green salads
- Maintain good oral hygiene

Fatigue

Fatigue can be related to the cancer itself or to treatment side effects. Eating enough calories and protein, gentle exercise, and rest are all important ways to cope with fatigue.

- Eat 5 to 6 small meals throughout the day
- Nibble on healthy snacks
- Find out what makes you most tired and when you feel most tired
- When you have energy, prepare simple meals in batches and freeze them to use later
- Allow other people to cook for you

Difficulty Swallowing

This can occur with brain tumours located in the brainstem. If you experience this symptom, inform your healthcare providers. You may find blenderized foods or foods with moist, soft textures easier to swallow.

Weight Gain

Some medications, like dexamethasone, can cause unintentional weight gain. Inform your healthcare providers if you notice unusual changes in your weight.

- Incorporate vegetables, whole grains, fruits, and legumes into your diet
- Limit your intake of salt, refined sugar and fats
- Limit alcohol intake
- Exercise as tolerated and if allowed by your physician

Medication Side Effects

Steroids

Steroids may be used to manage side effects from radiation, including cerebral edema (swelling of the brain). Dexamethasone is a commonly prescribed steroid in brain radiation therapy. Long-term use or high doses can cause side effects, including:

- **Increased appetite**
This can lead to weight gain
- **Hyperglycemia (high blood glucose)**
Monitor your blood glucose levels
- **Stomach and intestinal discomfort**
Steroids can be taken with food or milk to decrease stomach discomfort
- **Weight gain**
The body can hold on to extra fluid (edema), even when you are not eating more calories

It is important to tell your healthcare providers if you notice any changes, including your appetite, weight, and blood glucose levels, before changing your diet.

Anti-Nausea

Known as antiemetics, these medications may be prescribed after surgery, radiation, or chemotherapy to prevent nausea and vomiting. Ondansetron (Zofran) is commonly prescribed and generally well-tolerated. However, some patients may experience headaches, constipation, or diarrhea.

Anti-Seizure

Seizures may occur due to the tumour or radiation therapy. Anti-seizure medications that may be prescribed include Carbamazepine and Phenytoin (Dilantin).

- Carbamazepine
 - Do not consume grapefruits or alcohol
 - If taken for more than 6 months, more Vitamin D and calcium is needed in the diet: milk, yogurt, cheese, fish, egg yolk
 - Nausea, vomiting, or diarrhea can occur
 - Take with food to decrease stomach discomfort. If taken for a long time, make sure the diet has enough folate, vitamin D, and vitamin K to prevent bone disorders, like osteoporosis
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- Phenytoin (Dilantin)
 - Do not consume grapefruits or alcohol
 - Take with food to decrease stomach discomfort

- If taken for a long time, make sure the diet has enough folate, vitamin D, and vitamin K to prevent bone disorders, like osteoporosis

Dietary modifications or supplements may be needed when taking these medications. Guidance from an oncologist or dietitian is required because some supplements can interfere with anti-seizure medications.

Complementary Therapies

Complementary therapies may help to ease symptoms from cancer and its treatment, but they do not cure cancer. They are often used alongside conventional cancer treatments (surgery, radiation, and chemotherapy) to enhance the overall well-being. They include:

- Acupuncture
- Aromatherapy
- Art Therapy
- Meditation
- Massage Therapy
- Music Therapy
- Tai Chi
- Yoga

Discuss with your healthcare providers before using complementary therapies to make sure they do not interfere with the conventional treatments you are receiving.

Frequently Asked Questions

Which foods should I eat?

A well-balanced and varied diet is beneficial to recovering from cancer treatment. Canada's Food Guide is a good resource (www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php). A Registered Dietitian can answer your specific questions about food and nutrition. See page 2 to contact a Dietitian.

Will certain vitamin/minerals decrease the chances of my cancer coming back?

We encourage patients to get their vitamins and minerals by eating a wide variety of foods. Some patients may need supplements to meet their nutritional needs, but taking more than you need is not always helpful or safe. Avoid high doses because they may interfere with your cancer treatment. Please talk with your healthcare team before taking them.

Does eating/drinking sugar contribute to the growth of my cancer?

Sugar does not cause cancer, nor does it hasten the growth of cancer cells. Refined and sweetened foods tend to contribute calories but little else to the diet. You may be advised to include high calorie foods through treatment in order to maintain your body weight. If you are not struggling to maintain your weight,

eating a well balanced diet including complex carbohydrates and limiting sweetened and processed foods is recommended.

Are there certain diets that will help me cure my cancer?

Eating specific foods or following special diets has not been shown to slow down cancer, cure it, or prevent it from coming back. Patients should talk to their healthcare providers before starting a specific diet, because restrictive diets can impact cancer treatment.

Can the ketogenic diet help?

The ketogenic diet has occasionally been used to treat seizures or metabolic disorders. However, there is insufficient evidence to support using a ketogenic diet to treat brain cancer. There may be unknown side effects when following this diet during cancer treatment.

Are there any foods that will reduce the risk of cancer?

Diets high in plant-based foods and low in animal fats may reduce the risk of cancer. Here are some basic guidelines adapted from BC Cancer Agency's Nutrition and Cancer Prevention:

- Eat a variety of vegetables, fruits, and legumes
- Limit red meat and increase poultry and fish
- Season foods with herbs and spices and do not add salt at the table
- Limit foods that are high in sugar and choose whole grains
- Limit foods that are high in fat and choose lean meats
- Use lower fat cooking methods, such as broiling and steaming
- Limit alcohol to less than 2 drinks a day for men and less than 1 a day for women
- Do not smoke or chew tobacco
- Websites
 - BC Cancer Agency Brain Tumours: www.bccancer.bc.ca/PPI/copingwithcancer/pamphlets/brain.htm
 - BC Cancer Agency Information for Patients Receiving Brain Radiation: www.bccancer.bc.ca/HPI/CancerManagementGuidelines/NeuroOncology/InfoSheet.htm
 - BC Cancer Agency Nutritional Support: www.bccancer.bc.ca/PPI/copingwithcancer/nutrition
 - HealthLink BC Dietitians: www.healthlinkbc.ca/healthyeating
- BC Cancer Agency Oncology Nutrition Services Dietitians

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- BC Cancer Agency Information for Patients Receiving Brain Radiation:
www.bccancer.bc.ca/HPI/CancerManagementGuidelines/NeuroOncology/InfoSheet.htm
- BC Cancer Agency Nutritional Support:
www.bccancer.bc.ca/PPI/copingwithcancer/nutrition
- HealthLink BC Dietitians: www.healthlinkbc.ca/healthyeating
- BC Cancer Agency Oncology Nutrition Services Dietitians

Vancouver Toll free in BC	604-877-6000 ext 2013 1-800-663-3333 ext 2013
Fraser Valley Toll free in BC	604-930-4000 1-800-523-2885
Vancouver Island Toll free in BC	250-519-5525 1-800-670-3322
Southern Interior Toll free in BC	250-712-3963 1-888-563-7773
Abbotsford Toll free in BC	604-851-4733 1-877-547-3777
Center of the North	250-645-7330 1-855-775-7300 ext 687515
Library/Cancer Information Centre	604-675-8003

**Disclaimer: The information in this pamphlet is for patients with brain tumours who are or will be undergoing radiation therapy. It does not replace the medical counsel of your Oncologist or individual consultation with a Registered Dietitian.*