Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

Diet and Nutrition During Head and Neck Cancer Treatment

This information will teach you how you can change your diet to manage your side effects during radiation therapy, chemotherapy, or both for head and neck cancer.

It's important to get enough nutrition before, during, and after your cancer treatment. Getting enough nutrition can help you:

- Maintain your strength
- Keep your weight stable
- Fight infection
- Have fewer side effects
- Heal after surgery

Read through this resource at least once before your treatment. You may also want to use it as a reference during and after your treatment. You can use the links in the "Navigate this article" area to the right to help you find the information that's most useful at different times during your treatment.

Clinical dietitian nutritionists are also available to help you plan your diet during and after treatment. They can help make sure you get enough nutrition. To make an appointment with a clinical dietitian nutritionist, call 212-639-7312 or ask a member of your healthcare team to help you.

About Your Nutrition During Treatment

It's important to follow a well-balanced diet so you get enough nutrition during your treatment. This will help keep your weight stable and maintain your muscles and strength.

Your clinical dietitian nutritionist will write down your nutritional needs in the box below. Keep them in mind when planning your meals.

- You need _____ **calories** per day
- You need _____ grams of **protein** per day
- You need _____ ounces of **fluid** per day

Tracking your weight

Tracking your weight during treatment is important. Weigh yourself about every 3 to 5 days, or as often as your clinical dietitian nutritionist asks you to. It's best to weigh yourself around the same time each day. Make sure you're wearing the same amount of clothes each time and using the same scale.

It's normal to lose weight during your treatment. Your clinical dietitian nutritionist will work with you to help keep you from losing too much weight. If you're losing too much weight, or need help with your diet, make an appointment with a clinical dietitian nutritionist.

Side Effects During Treatment

The side effects of radiation and chemotherapy treatments can make it hard to eat at times. You may need to change your diet because of your side effects. Doing this can help you get enough nutrition so you don't lose too much weight and help with your recovery.

The following table lists some common side effects you might have and when you might have them. You may have some, all, or none of these side effects. If

you have one of the side effects below, you can read the "Tips for managing common side effects" section to learn about diet changes that may help make eating easier for you.

Week of Radiation Treatment	Common Side Effects
Weeks 1 to 3	• Taste changes or lack of taste • Mouth sores • Fatigue (feeling more tired or weak than usual • Decreased appetite (not feeling hungry)
Weeks 4 to 6	• Taste changes or lack of taste • Mouth sores and painful swallowing • Fatigue • Decreased appetite • Thick mucus or phlegm • Dry mouth • Nausea (feeling like you're going to throw up)
2 weeks after treatment ends	• Same as weeks 4 to 6
1 month after treatment ends	• Taste changes or lack of taste • Painful swallowing • Thick mucus or phlegm • Dry mouth

Tips for managing common side effects

Taste changes or lack of taste

If you have taste changes or lack of taste:

- Try adding marinades, herbs, or spices to your food. Don't add these to your food if you also have mouth sores or painful swallowing.
- If you have a metallic taste in your mouth, use plastic utensils and avoid drinking out of cans.
- It's best to limit or avoid some of your favorite foods during treatment. They may not taste as you remember them. This might make you connect these foods to negative thoughts in the future.

Mouth sores and painful swallowing

If you have mouth sores, painful swallowing, or both:

- Try eating soft, bland foods. You can read about these in the “Soft and Bland Foods” section.
- Avoid steaming hot foods and drinks.
- Don’t eat acidic fruits (such as oranges, grapefruits, lemons, or limes) or drink acidic fruit juice.
- Don’t eat spicy foods.
- Don’t eat foods with rough textures, such as toast or crackers.
- Rinse your mouth every 4 to 6 hours, or more often for comfort. Use 1 of the following liquids:
    - One quart (4 cups) of water mixed with 1 teaspoon of salt and 1 teaspoon of baking soda
    - One quart of water mixed with 1 teaspoon of salt
    - One quart of water mixed with 1 teaspoon of baking soda
    - Water
    - A mouthwash with no alcohol or sugar

To rinse, swish and gargle the liquid for 15 to 30 seconds, then spit it out.

If these tips don’t help your mouth pain or painful swallowing, tell your healthcare provider. They can prescribe a medication to help.

You can also ask your healthcare provider for a referral to a swallowing specialist. They can recommend foods and liquids that are safe and easy to swallow.

For more information about painful swallowing and mouth care during treatment, read the following resources:

- *Radiation Therapy to Your Head and Neck: What You Need To Know About Swallowing* (www.mskcc.org/pe/rt_head_neck_swallowing)

- *Mouth Care During Your Cancer Treatment* (www.mskcc.org/pe/mouth-care)

Fatigue

If you feel too tired to make a whole meal, try eating foods that are ready-made or that cook quickly. You can also try single-serving items, such as yogurt, cottage cheese, hard boiled eggs, tuna salad, canned creamy soups, or a pre-cooked rotisserie chicken.

Decreased appetite

If you don't feel hungry, try these tips:

- Eat small meals often and avoid large, heavy meals. For example, have 6 smaller meals during the day instead of 3 large ones.
- Eat foods high in calories and protein. Read the section "Increasing Your Calorie and Protein Intake" for more information.
- Eat in a pleasant environment, such as in front of a window or another place you enjoy.
- Eat with friends and family if you find it helpful.
- Read the section "Making nutritional shakes to increase protein and calories" for ideas to get more nutrition.
- If you're having trouble eating enough, talk with a member of your healthcare team.

Thick mucus

If you have thick mucus in your throat:

- Sip on clear liquids during the day. These can include water, non-acidic fruit juice, sports drinks, broth, Ensure® Clear, or Boost® Breeze.
- Drink warm water or warm tea with honey.
- If you don't have mouth sores, try gargling with club soda.

Dry mouth

If your mouth is dry:

- Choose soft, moist foods, such as watermelon, yogurt, and pudding. For more ideas, read the “Soft and Bland Foods” section.
- Suck on ice pops.
- Add gravies, sauces, applesauce, or other liquids to your foods.
- Have a spoonful of warm soup or other liquid between mouthfuls of food.
- Try foods made with gelatin, such as mousses or Jell-O®. They tend to slide down your throat more easily.
- Always carry a bottle of water with you. You can also try carrying a small, clean spray bottle filled with water. Spray water in your mouth throughout the day to keep it moist.
- Try eating sugar-free mints or lemon drops or chewing sugar-free gum to make more saliva.
- Sip on fruit nectars such as pear, peach and apricot, and drink papaya juice.
- Talk with your healthcare provider about trying an over-the-counter (not prescription) saliva supplement.
- Avoid alcoholic drinks and drinks with caffeine.
- Avoid mouthwashes that contain alcohol.
- Avoid eating dry, starchy foods such as toast, crackers, or dry cereal.

Nausea

Most healthcare providers will prescribe medication to treat nausea or keep it from happening. If you have nausea, you can also follow the guidelines below to help manage it.

- Don’t eat spicy foods.
- Don’t eat high-fat foods, especially fried foods, such as donuts, french fries, pizza, and pastries.
- Avoid laying down right after you eat.

- If the smell of food bothers you, try eating your food at room temperature or cold. Avoid foods that are too hot. They often have a stronger smell that can make nausea worse.
- Eat small, frequent meals. For example, have 6 smaller meals during the day instead of 3 large ones.
- Take your time eating and chew your food well to make it easier to digest.
- Don't drink large amounts of liquids at once. This will keep you from getting too full. Getting too full can make nausea worse.
- Try sipping on ginger tea, ginger ale, non-alcoholic ginger beer, or sucking on candies containing real ginger. Ginger may be soothing and help with nausea.
- Try eating low-fat, starchy foods. These foods may be less likely to make you feel nauseous. For example, try rice, white toast, crackers, cheerios, melba toast, or angel food cake.
- Try eating salty foods, such as pretzels or saltine crackers.

Other treatment tips

- It's important to keep your mouth clean during your treatment. Brush your teeth regularly. Follow the guidelines in the resource *Mouth Care During Your Cancer Treatment* (www.mskcc.org/pe/mouth-care) for other ways to help you take good care of your mouth.
- If your doctor prescribed you medication for pain, nausea (feeling like you're going to throw up), or both, you should talk to your doctor about the best time to take it. Some doctors recommend taking these medications before meals.

Feeding tube placement

If your side effects are keeping you from getting enough nutrition or putting you at risk of choking, you may need to have a feeding tube placed. A feeding tube can be placed during or after your treatment.

If you have a feeding tube, work with your clinical dietitian nutritionist, or

Gastroenterology (GI) Nutrition doctor to make sure you're getting enough nutrition and fluids. They will give you a diet to follow.

Increasing Your Calorie and Protein Intake

It's important to eat enough calories and protein during your cancer treatment so you can maintain your weight. Remember that these are general tips. Everyone is different so it's important to try the tips that work best for you.

- Poultry, meat, eggs, beans, nuts and nut butters, and dairy products are all good sources of protein. You should try to choose foods that are high in protein in all your meals and snacks.
- Nuts and nut butters, avocados, olive or canola oils, and whole fat dairy products are good sources of calories. Adding them to your diet can help you increase the number of calories you eat.
- If you're having trouble keeping your weight the same, choose drinks that have calories instead of water. Examples are fruit juices, fruit nectars, and liquid nutritional supplements, such as Ensure®.
    - If you have diabetes, talk with your doctor or clinical dietitian nutritionist before doing this. They may tell you to limit or avoid sugary drinks to help control your blood sugar.
- It's important to stay hydrated and drink a lot of fluids during and after your treatment. If you want to know how much fluid you should be drinking each day, talk with your clinical dietitian nutritionist.

The following is a table of foods that are high in protein, calories or both that you can add to your diet.

Food	Serving	Calories	Protein(grams)
Whole milk	8 ounces	150	8
Smooth nut butter (such as peanut or almond butter)	2 tablespoons	200	8
Premium (full-fat) ice cream	½ cup	260	4
2% fat plain Greek yogurt	1 cup	170	23

4% fat or full-fat cottage cheese	1 cup	220	23
Oil (such as olive, canola, or coconut)	1 tablespoon	100	0
Whey protein powder	Per instructions on bottle	100 to 170 (depending on brand)	15 to 30
Avocado	½ cup, cubed	120	2
Mild shredded cheese	½ cup	230	14
Heavy cream	1 tablespoon	50	0
Cream cheese	1 tablespoon	50	1
Full-fat ricotta cheese	¼ cup	100	7
Cooked beans (such as chickpeas)	1 cup	295	16
Evaporated milk	1 cup	320	16
Chicken salad with mayonnaise	1 cup	420	26
Egg salad with mayonnaise	1 cup	570	23
Tuna salad with mayonnaise	1 cup	400	22
Honey (pasteurized)	1 tablespoon	65	0
Oatmeal (made with whole milk)	1 cup	250	12
Cream of wheat (made with whole milk)	1 cup	240	12
Pasta, cooked	1 cup	220	8
Grits (made with milk)	1 cup	235	11
Macaroni and cheese	1 cup	500	19
Dry, full-fat milk powder	3 tablespoons	120	6
Apple juice	8 ounces	115	0
Grape juice	8 ounces	150	0
Peach nectar	8 ounces	135	0
Alfredo sauce	½ cup	550	10
Jelly or jam	1 tablespoon	50 to 60	0

Cliff bar®	1 bar	280 to 300	5

Homemade nutritional shakes

Making shakes or smoothies is a great way to increase the number of calories and protein you get each day. Toward the end of your treatment, you may be only drinking shakes, depending on how you're feeling.

The following chart has examples of different bases and mix-ins you can use to make shakes. You should choose one of the liquid nutritional supplements listed in the table below as a base and add in whatever mix-ins you'd like to increase your calories, if needed. If you prefer, you can drink the liquid nutritional supplements on their own.

Use this chart to keep track of how many shakes you're drinking per day. Your clinical dietitian nutritionist will tell you how many servings of each you should have per day.

Shake bases

Product Name	Serving Size	Calories	Protein (grams)	Servings Eaten
Ensure Plus®	8 ounces	350	13	
Boost Plus®	8 ounces	360	14	
Scandishake® with whole milk	8 ounces	600	12	
Muscle Milk®	10 to 17 ounces	170 to 340	18 to 34	
Boost® Very High Calorie	8 ounces	530	22	
Boost® High Protein	8 ounces	240	15	
Glucerna®	8 ounces	190	10	
Boost® Glucose Control	8 ounces	190	16	
Premier Protein®	11 ounces	160	30	
Ensure® High Protein	8 ounces	210	25	
Boost® Compact	4 ounces	240	10	

Boost Breeze®	8 ounces	250	9	
MightyShakes®	8 ½ ounces	500	23	
Soylent	14 ounces	400	20	
Orgain® (liquid)	11 ounces	255	16	

Shake mix-ins

Product Name	Serving Size	Calories	Protein (grams)	Servings Eaten
Whole milk	8 ounces	150	8	
Almond milk	8 ounces	60	1	
Heavy cream	2 ounces	200	1	
Cream of coconut	2 tablespoons	140	0	
Banana	1 medium	100	1	
Premium ice cream	½ cup	260	5	
2% plain Greek yogurt (such as Fage®)	1 cup	170	23	
Vegetable oil	1 ½ ounces	350	0	
Benecalorie®	1 ½ ounces	330	7	
Whey protein powder (such as CVS brand)	1 scoop	150	26	
Plant-based protein powder (such as Orgain® Organic Protein Powder)	4 ounces	240	10	
Peanut butter	2 tablespoons	190	8	
Powdered peanut butter (such as PB2®)	2 tablespoons	45	5	
Milk powder	½ cup	75	4	
Mixed berries	¾ cup	50	0	

Soft and Bland Foods

The following foods are soft and taste bland. They're good to eat if you have mouth sores or pain.

Food group	Recommended Foods
Milk and Dairy	• Whole milk • Plain or well-blended yogurt without fruit pieces • Pasteurized eggnog • Soft cheese (such as cottage cheese or thin ricotta cheese) • Mild or processed cheese melted into a sauce
Vegetables	• Vegetable juices (such as carrot juice) • All well-cooked, diced vegetables (such as carrots, peas, green beans, beets, butternut squash, wax beans) • Chopped or creamed spinach
Fruits	• Non-acidic fruit juices and nectars (such as apple and pear) • Smooth applesauce • Any canned fruits, as tolerated • Any cooked fruits without the skin • Ripe bananas
Starches	• Cooked cereals, cream of wheat, farina, cream of rice, oatmeal, hominy grits • Whipped or smooth masked white or sweet potatoes • Well-cooked pasta • White or brown rice • Soft whole grains (such as barley and farro) • Soft breads (such as soft rolls, muffins, soft French toast, pancakes) • Dry cereal soaked in a small amount of milk
Fats and Oils	• Butter or margarine • Sour cream • Cooking fats or oils • Gravy • Whipped toppings or heavy cream • Creamy-style salad dressings. Avoid acidic dressings. • Avocado

Meat and Meat Substitutes	• Tender cooked meat, fish, and poultry • Chicken salad, tuna salad, egg salad (without celery or onion) • Meatloaf or meatballs • Salmon loaf or croquettes • Casseroles • Baked or broiled fish (such as filet of sole, roughy, flounder, or salmon) • Scrambled eggs or soufflé • Plain cheese quiche • Hummus • Well-cooked beans • Tofu
Soups	• Broth or bouillon • Soups with puréed or strained vegetables • Cream soups • Chicken noodle or rice soup
Sweets and Desserts	• Plain custards or puddings • Sherbet, ice cream, frozen yogurt, milkshakes • Jell-O® • Flavored fruit ices, popsicles, fruit whips, flavored gelatins • Seedless jelly • Honey, maple syrup, sugar, or sugar substitutes • Chocolate syrup • Pies without crust, pastries and cakes without seeds or nuts, soft cookies
Drinks	• All drinks (watered down, as needed)
Miscellaneous	• Herbs, syrups, and gravies

Nutrition Guidelines After Treatment

Even when your treatment ends, your side effects may get worse or continue for some time. To help with this, keep changing your diet as needed to make eating and drinking easier. It's important to eat well and stay hydrated so your body can heal. To heal properly, your body will need more calories and protein. Some people will need to be on a liquid diet, soft diet, or both to get the nutrition they need. Keep drinking your homemade shakes or liquid nutritional

supplements to help you meet your nutrition needs.

Start adding pureed or soft solid foods to your diet 1 month after your treatment has finished. You can start adding them earlier if you feel ready, and if your doctor tells you it's okay. You can start by eating ¼ cup soft solid or puréed food at least 3 times per day. You should also take nutritional supplements to meet the rest of your nutrition needs. Talk with your clinical dietitian nutritionist if needed.

You can also continue to meet with your clinical dietitian nutritionist once your treatment is over.

Daily Food and Drink Log

Try keeping track of all the foods and drinks you have to help make sure you eat and drink enough during your treatment. You can use the log below to start tracking your food.

If you prefer to track your food on your phone, you can download an app (such as MyFitnessPal) to help with this.

Day of the Week	Meal/Snack 1	Meal/Snack 2	Meal/Snack 3	Meal/Snack 4	Meal/Snack 5
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					

Additional Resources

The following resources may provide support and other information for during and after your treatment.

American Institute for Cancer Research
www.aicr.org
800-843-8114
Provides information on diet and cancer prevention, research, and education.

Memorial Sloan Kettering (MSK) Nutrition
www.mskcc.org/nutrition
Provides recipes, diet guides, and additional information about nutrition services offered at MSK.

Support for People with Oral and Head and Neck Cancer (SPOHNC)
www.spohnc.org
800-377-0928
SPOHNC is a self-help organization that gives support to people with head and neck cancer. They send out a monthly newsletter and offer support through a survivor-to-survivor network. There are local chapters in New York State.

For more information, watch the following videos on nutrition before, during, and after treatment for head and neck cancer:

- *Nutrition Before and During Treatment for Head and Neck Cancer* (www.mskcc.org/pe/hn-nutrition-before-radiation)
- *Nutrition During and After Treatment for Head and Neck Cancer* (www.mskcc.org/pe/hn-nutrition-after-radiation)

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Diet and Nutrition During Head and Neck Cancer Treatment - Last updated on April 17, 2023
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