

Eating Well after Transplant and CAR T-cell Therapy: Why It Matters

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Objectives



After transplant or CAR-T cell therapy...

- Learn about your nutritional needs
- Learn how to manage symptoms that impact adequate nutrition
- Learn about the American Institute for Cancer Research recommendations for eating healthier
- Learn about ways to plan healthier meals
- Learn about popular diets and if they are right for you

What are my nutritional needs after transplant or CAR-T cell therapy?

1. High protein
2. High calorie
3. Adequate fluid intake
4. Remain mindful of food safety to minimize infection risk
5. Manage symptoms that impact adequate nutrition

Ways to increase My Protein Intake

- Add high protein snacks between meals
 - Yogurt with fruit (can be non-dairy)
 - Peanut/Almond butter and crackers
 - Cheese and fruit
 - Protein shake (homemade or store-bought)
- Every meal and snack should include protein
 - Animal proteins
 - Plant proteins



Ways to Increase My Calorie Intake

- Add snacks between meals, eat every 2-3 hrs
 - Sometimes a few bites are better than none
- Add healthy fats
 - Avocado, nuts/seeds, olive oil
- Add a high-calorie and protein shake daily
 - Dairy based
 - Non-Dairy based



Ways to Increase My Fluid Intake

- Always keep a water bottle with you
 - Every sip counts, set a reminder on your phone
- Other hydrating foods
 - Fruits, gelatin, broth-based soups, popsicles
- Add fluids with electrolytes to maintain better hydration
- Add flavor to your water



Food Safety Precautions

- Wash hands and disinfect surfaces often
- Check expiration dates on food
- Avoid raw and undercooked meats
- Refrigerate all leftovers within 2 hours of cooking
- Wash fruits and vegetables thoroughly
- Follow the guidelines provided by your healthcare provider; every facility is a bit different



Symptoms That Impact Adequate Nutrition

- Nausea
- Diarrhea
- Taste changes
- Mouth sores
- Constipation
- Loss of appetite and weight loss

If You Have Nausea...

- Eat small frequent meals
- Sips of liquids all-day
- Try ginger and mint as a natural remedy in addition to medications
- Avoid strong odors
- Bland, easy to digest foods



If You Have Diarrhea...

- Low-fiber foods
- Choose fluids with electrolytes
- Avoid spicy/acidic/greasy foods
- Sips of liquids all day
- BRATT diet-Banana, Rice, Applesauce, Toast, Tea
- Limit dairy or choose lactose free/dairy-free



If You Experience Changes in Taste...

- **Metallic-** Add a little sweetener OR try adding fat
- **Too Sweet-** Add drops of lemon/lime juice as needed
- **Too Salty-** Add drops of lemon/lime juice
- **Too bitter-** Add a little sweetener
- **“Cardboard”-** Add sea salt and a spritz of fresh lemon juice
- **Too Sour-** Add a little sweetener
- **Too Spicy-** Add a little sweetener OR try adding fat



If You Have Mouth Sores

- Oral rinse
 - ¼ tsp of Salt + ¼ tsp of Baking soda + 1 quart of water
- Oil pulling – an ancient Ayurvedic practice that involves swishing oil in your mouth
 - Using coconut oil
 - Antibacterial properties and it is soothing
- Avoid spicy or acidic foods
- Choose soft and moist foods
- Use a soft toothbrush



If You Have Constipation...

- Causes
 - Low food intake, inadequate fluid intake
 - Pain and nausea medications
- High-fiber diet
- Increase fluids, choose warm liquids
- Prune juice/prunes
- Smooth Move tea



If You Have Loss of Appetite and Weight Loss

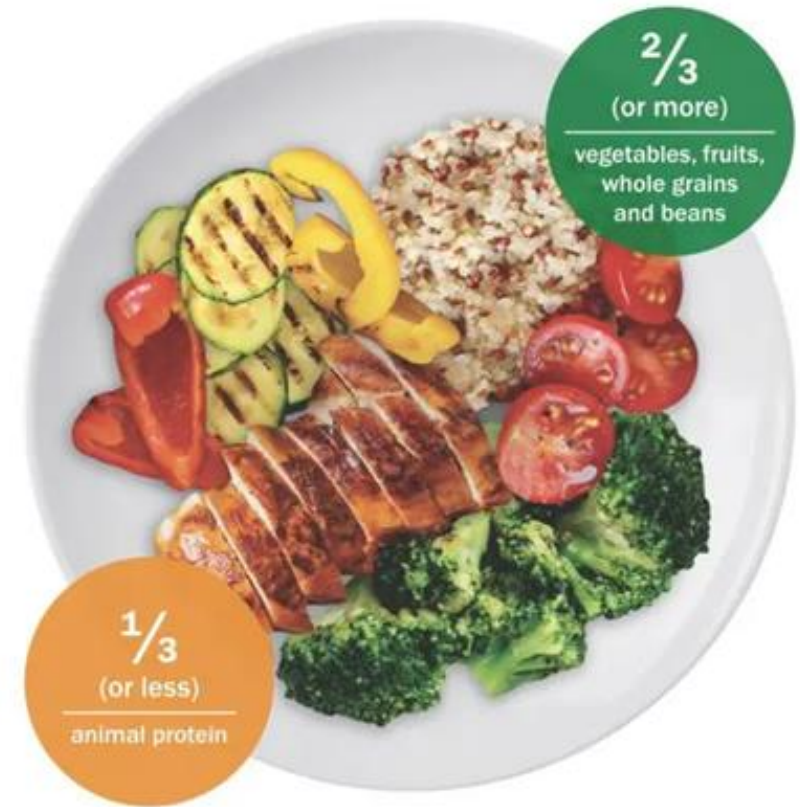
- Eat small frequent meals throughout the day
- Eat foods that are higher in calories or protein
- Try a nutritional supplement
- Try different foods
- Make mealtime special
- Eat with family and friends
- Eat what is appetizing to you (guilty pleasures allowed)



Healthy Eating for Cancer Survivors

- American Institute for Cancer Research:
 - Cut back on red meat
 - Limit processed meats
- Choose whole grains and beans
 - Increase vegetable and fruit intake
 - Limit alcohol if any
 - Aim for a healthy weight
 - Stay physically active

The New American Plate



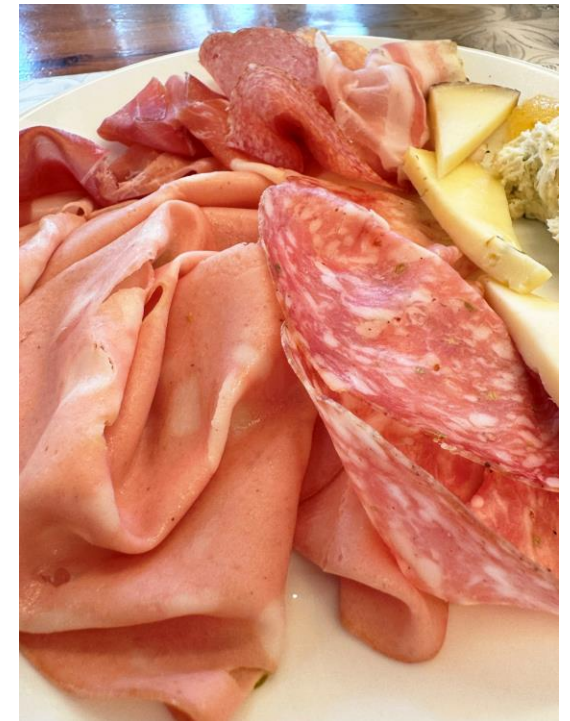
Red Meat

- Red Meat includes:
 - Beef, Veal
 - Pork, Venison, Bison
 - Recommend: less than 18oz per week, very lean
 - Cook at low to medium temperatures
- Avoid high heat and eating charred meats; these are carcinogenic



Processed Meats

- Nitrates found in processed meats are carcinogenic
 - Classified in the same carcinogenic group as tobacco smoking per the World Health Organization
- Processed Meats include:
 - Deli meats
 - Bacon, sausage, hot dogs
- Recommendations: as little as possible if any



Choose Whole Grains and Beans

- Nutrients:
 - Fiber, B vitamins, Iron, magnesium, selenium
- Sources of whole grains include
 - Barley, Oats, Quinoa, Farro, Kamut, Buckwheat, Sorghum, Barley, Wild Rice, Millet, Black Rice, Beans
- Benefits
 - Evidence suggests they reduce the risk of colon cancer, and also help regulate digestion
 - Fiber is a prebiotic that feeds probiotics and helps control blood glucose

Increase Fruit and Vegetable Intake

- 3.5 to 5+ cups of fruits and vegetables per day
- Choose deep colors - dark green, red, orange or yellow
- Add vegetables to every dish
- Example:
 - 1 cup of fruit with Breakfast
 - 2 cups of vegetables with Lunch
 - 2 cups of Vegetables with Dinner
- Hardest recommendation to follow for most people



Alcohol

- Alcohol in moderation, if at all
- Any amount of alcohol can increase your risk for cancer recurrence
- Ask your healthcare provider
- Serving size for one drink is:
 - 1.5 oz Liquor
 - 5 oz Wine
 - 12 oz Beer
- Drinking in moderation means women can have one drink per day, and men can have 2 per day



Aim for a Healthy Weight

- Excessive body fat increases the risk for cardiovascular problems
- Balanced diet
- Exercise is KEY
- BMI does not consider body composition

BMI	Weight Status
Below 18.5	Underweight
18.5 24.9	Normal
25.0 29.9	Overweight
30.0 and Above	Obese

Stay Physically Active

- Start slow and increase as tolerated
- Consult with your healthcare provider
- Enhances quality of life
- Reduces fatigue
- Improves cardiovascular health
- Improves mental health
- Look for an exercise program for cancer survivors if possible



Tips for Planning Healthier Meals

- Plan ahead, write it down!
- Make this time enjoyable, include your family
- Look up weekly flyers/specials at your local grocery store (online/mail)
- Check your pantry and freezer
- Make a list to shop
- Plan to use leftovers



Let's Plan Breakfast

- Protein:
 - Eggs, dairy, dairy-free alternatives are ok
 - Nut/seed butter or whole nuts or seeds
- Carbs: whole grain
- Fruit: variety
- Healthy Fat:
 - may have more if trying to gain weight or omit if trying to lose weight



Let's Plan Breakfast - Examples

- 1 Egg, 1 whole wheat toast, ¼ of an avocado, 1 Orange
- 1 cup of cooked old-fashioned oats, with low-fat milk, 1 tbsp of peanut butter mixed in, and Fruit
- Protein shake - Milk, fruit, and almond butter
- Plain low-fat Greek yogurt with fruit and granola



Let's Plan Lunch

- Protein
 - Meat, Beans, lentils, high-protein grain
- Carb - whole grain
- Vegetable
 - Variety is key, at least 2 cups
- Healthy Fat
 - may have more if trying to gain weight, or omit if trying to lose weight



Let's Plan Lunch - Examples

- Salad:
 - Base of greens
 - aim for 5 different vegetables (tomato, cucumber, carrots, onion, greens)
 - add a protein (beans, chicken, tuna, quinoa)
 - olive oil-based dressing
- Sandwich:
 - Whole wheat bread
 - protein (Chicken salad, tuna salad, hummus, grilled fish/chicken)
 - avocado in place of mayo
 - lettuce, tomato

Let's Plan Dinner

- Protein- Meat, Beans, lentils, high protein grain
 - Aim for at least 1-2 meatless meals per week
 - Red meat 2 times a week or less
 - Aim for fish at least twice a week
- Carb-whole grain
- Vegetable - variety is key, at least 2 cups
- Healthy Fat-
 - may have more if trying to gain weight, or omit if trying to lose weight



Let's Plan Dinner – Examples

- Fish, brown rice, steamed broccoli
- Chicken, sweet potato, sauté vegetables using olive oil
- Beans, quinoa, side salad, avocado
- Stir-fry tofu with vegetables, high fiber noodle/pasta (soba noodles, wheat pasta)



Popular Diets

Let explore what these diets mean and if they are right for you.

- Alkaline Diet
- Ketogenic Diet
- Mediterranean Diet



Popular Diets: Alkaline

What is it?

- The theory is that an acid environment causes and promotes cancer.
- Therefore, if a person eats more fruits and vegetables and limits red meat, sugar, and white flour/rice, they create a more alkaline environment where cancer can't thrive.



Popular Diets: Alkaline

The facts:

- Our body will maintain optimal blood pH regardless of the diet.
- No clinical data show benefits in cancer, but an alkaline diet is high in fiber and plants, which is beneficial.
- You can still follow some aspects but make sure you are getting enough protein and calories.
- This diet tends to be low in calories, protein, vitamin D, and Calcium.



Popular Diets: Ketogenic

What is it?

- High fat, high protein, and low in carbohydrates.
- The hypothesis is that glucose restriction may starve cancer cells and that the ketones produced are toxic to cancer cells.



Popular Diets: Ketogenic

The facts:

- Beneficial for uncontrolled epilepsy, and some evidence with glioblastomas, but not part of the standard of care
- Very hard to follow
- May cause significant weight loss at first
- It may not be a good idea for someone who is already losing weight



Popular Diets: Mediterranean

What is it?

- Rich in olive oils, fish, nuts, leafy greens, and other vegetables, fruit, and whole grains.
- It is based on the traditional diets from Italy, Turkey, Greece, and other countries along the Mediterranean Sea.
- High in anti-inflammatory foods



Popular Diets: Mediterranean

The facts

- Proven to be beneficial for preventing heart disease, diabetes, dementia, and some types of cancer
- If you are new to this diet, make small changes at a time to prevent drastic weight loss
- Overall, it is a good diet for cancer survivors



Take Home Message

- Immediately after transplant or CAR-T cell therapy, your nutritional needs are maintaining your energy and managing symptoms.
- Once your symptoms are under control, then you can focus on eating healthier
- Plan your meals ahead of time
- Not every meal will be perfect
- Be gentle to yourself and celebrate the small wins!



References

- American Institute for Cancer Research
www.aicr.org
- Academy of Nutrition and Dietetics- Oncology Practice Group
www.oncologynutrition.org
- American Cancer Society
www.cancer.org
- Leukemia Lymphoma Society
www.lls.org
- National Cancer Institute
www.cancer.gov