Optimizing Nutrition after Transplant

Celebrating a Second Chance at Life Survivorship Symposium

July 11-17, 2020

Paula Charuhas Macris, MS, RD, CSO, FAND
Seattle Cancer Care Alliance
Optimizing Nutrition After Transplant
Paula Charuhas Macris, MS, RD, CSO, FAND
Nutrition Education Coordinator
Objectives

• Understand the long-term nutritional consequences associated with stem cell transplantation.
• Gain practical skills and tools to maintain a healthy diet post-transplant.
• Describe common myths associated with nutrition and cancer.
Long-term nutritional consequences associated with stem cell transplantation
• Survival rates have increased

• Therefore, long-term and late effects are of growing importance

• Chronic graft-vs-host disease (GVHD) and metabolic syndrome are common and impact life expectancy and quality of life
Chronic GVHD

• An immune mediated disorder that occurs between the patient and donor

• May affect many body organs including mouth, stomach, and gastrointestinal tract
Chronic GVHD may change the amount of needed calories:

- Increased needs to repair damaged body tissues and help regain weight and strength

- Body may digest food less efficiently, thus requiring increased nutrient intake to maintain weight
  - Focus on small, frequent meals and snacks
  - Consume adequate protein
  - Use nutrient-dense healthy fats, such as extra virgin olive oil or avocados

- Some medications may increase appetite and cause weight gain
  - Monitor portions consumed
  - Avoid processed foods high in added sugar, salt, and fat
Protein

• Increased needs with chronic GVHD
• Important for growth and rebuilding tissue

• Sources
  - Animal: lean meats, poultry, fish, eggs, dairy products
  - Plant: legumes (lentils, black beans, etc.), nuts or nut butters, soy-based foods
Fluids

Increased needs due to:
• Immunosuppressive medications (cyclosporine; tacrolimus)
• Increased losses due to fever, sweat, diarrhea, vomiting, or rapid breathing

Good sources:
- Water
- Broth
- Smoothies
- Milk  
  (including soy, almond, or coconut milk)
- Yogurt
- Soups
- Vegetable juice
- Limit caffeine and alcohol
Long-term nutritional consequences associated with stem-cell transplantation: Metabolic Syndrome
Metabolic Syndrome

- Metabolic factors associated with increased risk for diabetes and cardiovascular disease
- Over 50 million Americans have metabolic syndrome; transplant patients are at higher risk of developing
Metabolic Syndrome

Definition:
Presence of at least 3 of the 5 defining characteristics:

- Apple vs. pear fat distribution
- High blood fats
- Low HDL (“good”) cholesterol
- High blood pressure or on medications
- High fasting blood sugar or on medications
How does diet effect the development of metabolic syndrome after transplantation?
How does diet effect the development of metabolic syndrome after transplantation?
Studies have shown that both pediatric and adult transplant patients are more likely to develop diabetes and high blood pressure than the general population.
What *lifestyle changes* can be made to *reduce* the incidence of developing metabolic syndrome as well as maintain a healthy diet post-transplant?
Practical skills and tools to maintain a healthy diet post-transplant:

American Institute for Cancer Research (AICR) Dietary Guidelines
Lifestyle changes

- Be a healthy weight
- Be physically active
- Eat a diet rich in plant foods
- Limit consumption of “fast foods” and other processed foods high in fat, starches, or sugars
- Limit consumption of red and processed meat
- Limit consumption of sugar-sweetened drinks
- Limit alcohol consumption
- Do not use supplements for cancer prevention
Be a healthy weight

• Keep your weight within the healthy range and avoid weight gain in adult life

• Aim to be at the healthy body mass index (BMI) range:

\[
\text{BMI} = \frac{\text{weight in kilograms}}{\text{height in m}^2}
\]

Underweight = <18.5
Normal weight = 18.5-24.9
Overweight = 25-29.9
Obesity = 30 or greater
Be physically active

- Physical activity helps to lower cancer risk by helping to promote weight maintenance and help to achieve physical and cardiovascular fitness
- Strive to build more activity into your daily routine
- Aim for at least 150 minutes of moderate or 75 minutes of vigorous, physical activity per week
- Work toward achieving 45-60 minutes of moderate-intensity daily physical activity
Eat a diet rich in plant foods such as whole grains, vegetables, fruits, and legumes

• Base diet around plant foods which contain fiber and other nutrients to reduce cancer risk

• Consumption of plant foods (lower in calories) also help maintain a healthy weight
• 2/3 of plate should include plant-based foods

• Consume at least 4 cups (raw and cooked) daily

“Rainbow of colors”
- Myriad of phytonutrients
- Green leafy, cabbage family
- Berries, citrus fruits

Legumes:
Garbanzo beans, kidney beans, black beans, dried peas rich in antioxidants, fiber, vitamins, and minerals
Limit consumption of “fast foods” and other processed foods high in fat, starches, or sugars:

Choose whole foods
What is a whole food?

• Contains all or most of the original edible parts
  - Whole grain bread vs. white bread
  - Brown rice vs. white rice

• It has had very little done to it

• It has not been fortified, enriched, bleached, refined, injected, hydrogenated, irradiated, or dehydrated
• “Fast foods” and a “Western-type” of diet are causes for:
  - Weight gain
  - Overweight and obesity
  - These conditions linked to the development of at least 12 cancers

• Limiting these foods helps control calorie intake and maintain a healthy weight

• Processed and refined foods contain many artificial ingredients
Monitor intake of:
- Cookies
- “Health bars”
- Candy
- Commercial condiments
- Sweetened yogurt
Limit consumption of red and processed meat

Eat no more than 12-18 ounces of cooked red meat per week
  • Beef, Lamb, Pork

Eat little, if any processed meats
  • Ham, Bacon, Hot dogs, Sausage
Limit consumption of sugar-sweetened drinks

Strong evidence that consuming sugar-sweetened beverages causes:

- Weight gain
- Overweight
- Obesity

Limit consumption of:

- Sodas
- Sweetened teas
- Coffee drinks
- Sweetened vitamin/energy/electrolyte beverages

Drink mostly water and unsweetened fluids
Limit alcohol consumption

For cancer prevention, it is best not to drink alcohol, which is a known carcinogen.

If you do choose to drink alcohol, limit your consumption to:

- **Women**: one drink/day
- **Men**: two drinks/day
Do not use supplements for cancer prevention

Aim to meet nutritional needs through diet alone by consuming a variety of foods each day.

Instead, choose:
• Lean protein sources
• Low fat or non-fat dairy products
• Whole grains
• Fruits
• Vegetables
Additional diet suggestions to supplement AICR recommendations

- Add chopped ground flaxseeds to oatmeal or yogurt
- Add chopped kale or dark greens to soups, salads, or smoothies
- Vary hummus: use white beans, edamame, or lentils
- Snack on roasted pumpkin seeds
- Add chopped walnuts to salad or hot cereal
- Make salad dressing with olive or flaxseed oils
- For meat-eaters, choose grass-fed meats and wild fish
- Load up on herbs and spices that contain cancer fighting compounds
  - Ginger, turmeric, curry, cinnamon, rosemary, basil, garlic
Common Myths Associated with Nutrition and Cancer
Nutritional Myths

1. Does sugar feed cancer?

2. Do I need to follow an Alkaline Diet?

3. Is a Ketogenic Diet safe?
 DOES SUGAR CAUSE CANCER? 

The relationship between sugar and cancer is about obesity and insulin resistance vs. sugar as fuel for cancer cells.
• Our bodies can make the glucose to “feed” both cancer cells and healthy cells regardless of diet, by breaking down fat and muscle protein

• Cancer risk is more about each individual’s metabolism and response to food, over time

• Eating sugar has no health benefit other than providing a well-absorbed energy source

Summary:
• Too much daily sugar intake can cause weight gain; unhealthy weight gain and a lack of exercise can increase cancer risk.
Common myths associated with nutrition and cancer:
Do I need to follow an Alkaline Diet?
Acid/Alkaline Diet – eating to manage your pH

• **Hypothesis** – tumors cannot grow in an alkaline environment

What are acid/alkaline foods?

• **Acidic**: Meat, poultry, fish, dairy, eggs, grains, beans, alcohol
• **Neutral**: Natural fats, starches, sugars
• **Alkaline**: Fruits, nuts, lentils, vegetables
You can influence your urine pH, but food **cannot** influence your blood pH.

Alkaline water filters cost over $1,000!

Diet supports consuming lots of fruits and vegetables, and limits processed foods, however, may over-restrict protein, calcium, and vitamin D.

**Summary:**
Promotion of Alkaline Diet/Alkaline Water for cancer prevention or treatment is not justified.
Is a Ketogenic Diet safe?

**Definition:** Very low carbohydrate diet.

**Hypothesis:** Tumors rely on glucose to meet their energy demands and thus starve a tumor and reduce growth.

**Based on this hypothesis:** *Sugar feeds cancer*
• Premise: evidence-based therapy for epilepsy
• Current clinical trials for brain tumors
• Nutritionally unbalanced diet that promotes very low carbohydrate intake
• Reported side effects include:
  - Constipation, anemia
  - Cardiac abnormalities, dehydration

Summary:
Lack of consistency and efficacy in current literature along with a host of adverse effects make the ketogenic diet not recommended as a therapeutic approach in the cancer setting.
Summary

• Eat real (whole) food; mostly plant-based
• Regular aerobic exercise
• Maintain a healthy weight

• Seek a registered dietitian nutritionist board certified in oncology nutrition
Internet resources

• American Institute for Cancer Research:  www.aicr.org

• The Cancer Fighting Kitchen:  www.rebeccakatz.com

• Cook For Your Life:  www.cookforyourlife.org

• Oncology Nutrition Dietetic Practice Group:  www.oncologynutrition.org

• Seattle Cancer Care Alliance:  https://www.seattlecca.org/emotional-and-spiritual-support/medical-support-services/nutrition

• The World’s Healthiest Foods:  www.whfoods.com
Thank you.

If you have any questions please contact me:
Paula Charuhas Macris

pcharuha@seattlecca.org
Questions?

Celebrating a Second Chance at Life Survivorship Symposium

July 11-17, 2020

bmtinfonet.org  ➤  help@bmtinfonet.org  ➤  847-433-3313