Nutrition and Physical Activity in Survivorship

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Disclosures

None
Learning Objective

Understand guidelines for lifestyle behaviors that promote health after a cancer diagnosis
Cancer Process

• Acquired factors:
  – Internal factors
    • Hormones
    • Immune system
  – External factors
    – Infection
    – Environmental toxins
    – Smoking, sunlight exposure, unhealthy diet, obesity or overweight, low physical activity
Diet, nutrition, physical activity and the cancer process

Diet, nutrition and physical activity, other environmental exposures and host factors interact to affect the cancer process

Normal epithelium → Preneoplasia → Invasive cancer

CANCER PROCESS

Host Factors

Environmental Factors

Diet/Lifestyle Factors

Genetics, Epigenetics, Microbiome, Age, Gender, Metabolic state, Inflammatory state and immune function, Other host factors

Food contaminants, Viruses, UV radiation, Environmental carcinogens, Other environmental factors

Nutrients, Energy intake, Phytochemicals, Other food components, Alcohol, Physical activity, Smoking, Other lifestyle factors

wcrf.org/cancer-process
What We Know

• No single food or food component, including sugar, can cause cancer by itself.

• No single food or food component can protect you against cancer by itself.

• There is strong evidence that a diet filled with a variety of plant foods such as vegetables, fruits, whole grains, and beans can lower the risks for many cancers and increase overall health and immunity.
Diet, Nutrition, Physical Activity and Cancer: a Global Perspective

An overview of the Third Expert Report
The Third Expert Report: Online access
An overall package

OUR CANCER PREVENTION RECOMMENDATIONS

Not smoking and avoiding other exposure to tobacco and excess sun are also important in reducing cancer risk. Following these Recommendations is likely to reduce intakes of salt, saturated and trans fats, which together will help prevent other non-communicable diseases.

wcrf.org/cancer-prevention-recommendations
Keep it Simple
- Keep consumption of alcohol to a minimum

- Take any nutrients through food rather than supplements as much as possible. There is a concern that supplements might do more harm than good.

- Consume as few trans fats as possible (e.g., margarines, baked goods, snack foods with partially hydrogenated oil).

- Consumption of foods high in fiber (e.g., beans, vegetables, whole grains, nuts and fruits) is recommended.
A greater combination of vegetables and fruits has been associated with lower risk of cancer. It is unclear which compounds in fruits and vegetables are the most protective, thus it is best to eat a variety of colorful vegetables.

No studies have shown a particular benefit of a vegetarian diet. A diet full of vegetables, legumes and nuts, fruits and grains and fish is recommended.
Limit consumption of processed and red meats and discourage the practice of cooking these and other higher sources of protein at high temperatures.

Best to consume whole foods rather than processed (packaged) fast food.

Sugar intake has not been shown to directly increase the risk of progression of cancer, but limiting the consumption of foods and beverages with added sugar is recommended.
BMI Chart

Start where you are
If you need to lose or gain weight
the goal is to go down or up 1 BMI category at a time
### Body Mass Index Table

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<tr>
<th>Height (inches)</th>
<th>Normal</th>
<th>Overweight</th>
<th>Obese</th>
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**Body Weight (pounds)**

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**Source:** Adapted from Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.
**Body fatness and the hallmarks of cancer**

Potential impact of diet, nutrition, physical activity and height in increasing susceptibility to cancer

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Systemic Impact</th>
<th>Cell function</th>
<th>Hallmarks possibly affected</th>
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<td>Greater body fatness</td>
<td>Hyperinsulinaemia, increased oestradiol, inflammation</td>
<td>Increased proliferation, genomic instability</td>
<td>Reduced apoptosis, increased cell division, altered cell cycle function, etc., increased metastasis</td>
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- Several exposures are linked to more than one type of cancer
- Greater body fatness has systemic impact:
  - Hyperinsulinaemia
  - Increased oestradiol
  - Inflammation
- These systemic factors affect a wide range of cellular and molecular processes that can subsequently promote cancer development and progression
- This impacts the hallmarks of cancer via numerous mechanisms

**wcrc.org/cancer-process**
Obesity
Diet
Physical Activity
Environmental exposures
Stress
Sleep

INFLAMMATION
Non-resolving, prolonged, maladaptive response

Modifying inflammation

Cynthia Thompson PhD, RDN
FOODS THAT FIGHT INFLAMMATION

Chronic inflammation has been linked to cancer, heart disease, diabetes, arthritis, depression, and Alzheimer’s. Fight inflammation with a healthy diet.

ANTI-INFLAMMATION FOODS

- **Tomatoes**
- **Fruits**
  - Strawberries, blueberries, oranges, and cherries.
- **Nuts**
  - Almonds, walnuts, and other nuts.
- **Olive oil**
- **Leafy greens**
  - Spinach, kale, collards, and more.
- **Fatty fish**
  - Salmon, mackerel, tuna, and sardines.

INFLAMMATION FOODS

- Fried foods
- Sodas
- Refined carbs
- Lard
- Processed meats
• Beans (lentils, pea beans, chickpeas etc.) at least 2x/week (1 1/2 cups)

• 2-3 servings of lowfat dairy products/day

• Fish at least 2x/week (size of deck of cards)

• nuts (in small amounts if avoiding weight gain)

• Use caution with vitamin supplements and herbal
Guidelines for Healthy Eating

• 5 servings vegetables/day (size of ~3 baseballs)

• 2-3 servings fruit/day (~2 baseballs)

• 4-6 ounces protein/day
  • 3 ounces is about a deck of cards
Protein Portions

• 4-6 ounces of chicken, fish, meat (28 g protein)
  or
• 1 ½ cup of cooked beans (black, lentils, kidney beans etc) (22 g protein)
  or
• 1 ½ cup cottage cheese (16 gram protein)
  or
• 3 eggs (18 g protein)

Goal is 4-6 ounces/day
(28-42 grams protein day)
Protein at Each Meal

• 2-3 ounces at each meal

• 1 oz at each snack

• include plant proteins: beans & lentils; nuts seeds
Fruit Portions

- 1 medium apple
- 1/2 cup of chopped cooked or canned fruit
- 3/4 cup of fruit juice

Goal is 2-3 pieces of fresh fruit/day
Vegetable Portions

• 1 cup of raw leafy vegetables

• 1/2 cup of other cooked or raw vegetables, chopped

• 3/4 cup vegetable juice

Goal is 5 servings/day
Avoid or limit processed meats

- Sausage
- Bacon
- Ham
- Hot dogs
- Pepperoni

- Salami
- Pastrami
- Bologna
- Corned beef
- Deli/luncheon meats
Tips for Grilling and Broiling meats, poultry and fish

• Cook smaller portions so they spend less time on the grill, turn frequently
• Marinate before grilling/broiling
• Pre-cook in microwave
• Remove all charred or burnt portions before eating
HEALTHY EATING PLATE

Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

The more veggies – and the greater the variety – the better. Potatoes and French fries don’t count.

Eat plenty of fruits of all colors.

Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.

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The Nutrition Source
www.hsph.harvard.edu/nutritionsource

Harvard Medical School
Harvard Health Publications
www.health.harvard.edu
Organic or Not?

• The benefits of increasing fruits and veggies far outweigh any potential risks associated with pesticides

• Look for organic veggies and fruit that have been shown to be lowest in pesticides
EWG’S 2019 SHOPPER’S GUIDE TO PESTICIDES IN PRODUCE

INSTRUCTIONS:
1. Cut along outside line.
2. Fold along middle line.

For more information visit EWG.ORG/FOODNEWS
1. AVOCADOS
2. SWEET CORN
3. PINEAPPLES
4. SWEET PEAS FROZEN
5. ONIONS
6. PAPAYAS
7. EGGPLANTS
8. ASPARAGUS
9. KIWIS
10. CABBAGE
11. CAULIFLOWER
12. CANTALOUPES
13. BROCCOLI
14. MUSHROOMS
15. HONEYDEW MELONS
EWG'S 2019 DIRTY 12™

1. STRAWBERRIES
2. SPINACH
3. KALE
4.nectarines
5. APPLES
6. GRAPES
7. PEACHES
8. CHERRIES
9. PEARS
10. TOMATOES
11. CELERY
12. POTATOES
+ HOT PEPPERS
Plastic Food Containers And Flexible Wraps

- Use glass to heat foods instead of shrink wraps or cling-type plastic wrap

How to Avoid Phthalates and BPA:

- Do not microwave food/beverages in plastic
- Do not microwave or heat plastic cling wraps
- Do not place plastics in the dishwasher
- If using hard polycarbonate plastics (water bottles/baby bottles/sippy cups), do not use for warm/hot liquids
- Use safe alternatives such as glass or polyethylene plastic (symbol #1)
- Avoid canned foods when possible (BPA may be used in can linings)
- Look for labels on products that say “phthalate-free” or “BPA-free.”
What about Soy?

• Soy supplements and powders contain very concentrated amounts of soy.

• You lose some of the other beneficial nutrients of soy when consuming processed versions.

• Consume whole soy foods.

• Soy lecithin, soybean oil and soy sauce do not contain concentrated soy.
DOES SUGAR FEED CANCER?

- Cells use sugar (glucose) the way cars use gas. Normal cells use a reasonable amount of gas, but cancer cells are gas guzzlers.

- Cancer cells are like cars with the accelerator stuck to the floor, using glucose at high rates, because they are dividing at much faster rates than normal cells.

- Avoid excess added sugars; simple sugars that we add to our foods like coffee or tea, or they are added to processed and prepared foods by food manufacturers.
Exercise and Health
• Public Health recommendations: 30 minutes of moderate intensity activity 5 or more days per week – 150 minutes/week of moderate activity

• Moderate = breathing, heart rate increased

• At the beginning, do short sessions, as brief as 5-10 minutes, and build up

• Start with small changes

• If you’re doing MODERATE intensity activity, you should be able to talk but not sing!
Calories In = Calories Out

If you walk leisurely for 1 hour and 10 minutes you will burn approximately 400 calories.*

*Based on 160-pound person

Cynthia Thompson PhD, RDN
What is the best activity?

• Be creative
• Enjoyment
• It’s about movement
• Activity does not just mean planned, structured activity.
  – For example gardening is a unique form of exercise that is calming and fun and uses the whole body.

Cynthia Thompson PhD,RDN
Food Safety
Ensuring food safety at home

• Wash hands often
• Wash produce before cutting, cooking or eating
• Wash utensils and cutting boards after each use
• Keep kitchen surfaces clean
• Keep raw meat and ready-to-eat foods separate
• Cook food to proper temperatures
• Refrigerate food promptly to below 40°F
• Pay close attention to use-by dates
Every journey is different - start where you are when it comes to diet and exercise

If individual nutrition counseling would be helpful, please talk to your oncologist for a referral to the oncology dietitian