



Cancer Prevention and Survivorship

THE GROWING ROLE OF LIFESTYLE MEDICINE

What is the role of lifestyle in...

Lowering the risk of
developing breast
cancer

(for those with a
history of breast
cancer) lowering
the risk of recurrent
breast cancer?

Spoiler Alert!

Attention to diet, exercise
and lifestyle can lower **both**

*the risk of developing breast
cancer, and*

*the risk of recurrent breast
cancer*

From Awareness to Action with Lifestyle Medicine

Prioritize Movement

From a nature walk to Zumba, every little bit counts!
Aim to get 30 minutes of physical activity daily or a 150 minutes/week of moderate intensity exercise.

Decrease your risk by taking charge of what you can control! It's the actions you commit to daily that may have the biggest impact on decreasing your future cancer risk!

Maintain a Healthy Body Weight

Eat the rainbow! A whole food plant predominant diet rich in fruits, vegetables, whole grains, and legumes can work synergistically with physical activity to help you maintain your weight, decreasing your risk of breast cancer.¹

Avoid Alcohol

Swap out your cocktail for a mocktail!
Try this at home: Infuse some citrus, or your favorite berries and fresh herbs in a fancy glass of sparkling water!

Breastfeed your baby

(if and when possible) Per the WCRF/AICR, there is strong evidence that breastfeeding decreases the risk of breast cancer.²

Get Screened

Talk to your doctor about age appropriate screening



Do you have a strong family history? Be Proactive. Know Your Risk.

- 1 Gather a good family history. Ask Who, When and What: Who had cancer? How old were they at time of diagnosis? What type of cancer? Discuss this with your medical team.
- 2 Consider genetic counseling and/or testing if appropriate.

Do you have a known genetic mutation?

- 1 Prioritize your mental & emotional health. Seek out meaningful connections (support groups, counseling, family/friends). Calming strategies include meditation, gratitude, journaling, emotional freedom technique (EFT)³ and deep breathing.
- 2 Talk to your doctor about appropriate screening and risk reducing therapies.
- 3 Stay empowered by engaging in positive lifestyle habits that will improve your overall wellbeing & quality of life.

Sources:

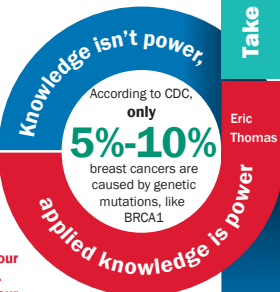
1) Body fatness, weight gain and the risk of cancer | WCRF International <https://www.wcrf.org/dietandcancer/body-fatness-and-weight-gain/>

2) Lactation (breastfeeding) and the risk of cancer | WCRF International <https://www.wcrf.org/dietandcancer/lactation-breastfeeding/>

3) breast_risk.pdf (nccn.org) https://www.nccn.org/professionals/physician_gls/pdf/breast_risk.pdf

4) What Are the Risk Factors for Breast Cancer? | CDC https://www.cdc.gov/cancer/breast/basic_info/risk_factors.htm

5) Clinical EFT (Emotional Freedom Techniques) Improves Multiple Physiological Markers of Health (nih.gov) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6381429/>



Know your body.
Know your normal.

Self-Awareness is key!
Talk to your doctor if you notice any changes with your body.



Age, ethnicity/race, dense breasts, prior history of cancer or thoracic radiation, prior history of atypical breast lesions (LCIS or atypical hyperplasia), reproductive history (no live births, late first pregnancy, early menstration, late menopause), family history and/or inherited genetic mutations^{3,4}

Helpful Resources:

- American Institute for Cancer Research: <https://www.aicr.org/cancer-prevention/>
- Centers for Disease Control and Prevention, Saving Lives. Protecting People: <https://www.cdc.gov/cancer/breast/>
- FORCE, Facing Hereditary Cancer EMPOWERED www.facingourrisk.org

Take Control

Risk Factors

Optimizing Breast Cancer Survivorship with Lifestyle Medicine



Cancer survivorship begins at the time of diagnosis and continues throughout life. These guidelines are meant to supplement (never replace) your current care plan, which differs according to how long ago you were diagnosed, but may include surgery, chemotherapy, immunotherapy, radiation therapy, and/or anti-hormonal therapy, as well as periodic imaging and bloodwork. Follow these guidelines to reduce your risk of breast cancer recurrence and improve overall health and wellness.

Plant-predominant nutrition

Enjoy a whole-food, plant-based diet consisting of a variety of vegetables, fruits, beans, legumes, whole grains, and limited nuts and seeds. These foods are rich in fiber, phytochemicals, vitamins and minerals that have anti-inflammatory and anti-oxidant activity. Minimize excess sugars, fried foods, and processed foods.

Build your plates as follows: 50% fruits and vegetables, 25% whole grains, 25% plant-based protein like beans/legumes/soy.

Soy intake is encouraged to both prevent breast cancer as well as breast cancer recurrence, regardless of age, menopausal status, BRCA gene mutation status, and/or receptor status. This is a surprise to many, and we encourage you to learn more from a reputable source like aicr.org or nutritionfacts.org.

A whole-food, plant-based diet along with appropriate sun exposure can provide adequate calcium and vitamin D, however you may have increased needs depending upon your individual levels and bone density. Your doctor will guide you in terms of any needed supplementation.

If you are over age 50, on a predominantly plant-based diet, or have had bariatric surgery, vitamin B12 supplementation is recommended in chewable, sublingual, or liquid form. Dosages are dependent upon your individual absorption and level;

however most people require at least 50 mcg (µg) of cyanocobalamin daily, or a single weekly dose of 2000 mcg (µg) cyanocobalamin. Those over age 65 may have increased daily needs approximating 1000 mcg (µg) cyanocobalamin.

Additional supplementation should be discussed with your doctor, but it is recommended to obtain nutrients from food sources rather than dietary supplements.

Physical activity

Each week obtain 150-300 total minutes of moderate intensity physical activity, or 75 minutes of vigorous intensity physical activity, including 2-3 sessions of strength training focused on major muscle groups, as well as flexibility exercises. This could consist of brisk walking, cycling, running, using a cardio machine, or rowing, coupled with strength training utilizing body weight, weights, bands, or resistance machines. Avoid prolonged sedentary behavior like sitting for more than an hour. Aside from physical functioning and bone health, physical activity can also improve anxiety, depression, fatigue, and quality of life.

Maintain a healthy body weight

Overweight and obesity are associated with increased risk of postmenopausal breast cancer, and increased risk of recurrence and death in breast cancer patients. Use an online calculator to find your body mass index (BMI), and aim to keep your BMI < 25 kg/m².

Exercise

- ▶ Movement helps us live longer and feel better
- ▶ The **CHALLENGE** trial (889 patients in 55 centers) randomized colon cancer survivors soon after completing treatment to a **3-year, coached exercise program** compared with education alone. The exercise program **improved disease-free survival** and showed a clear **overall-survival benefit**.
 - ▶ 5-yr DFS ~**80.3% vs 73.9%**,
 - ▶ 8-yr OS ~**90.3% vs 83.2%**
- ▶ **Breast cancer:** Meta-analyses show up to ~**48% lower all-cause** and ~**38% lower breast-cancer mortality** as post-diagnosis activity increases to ~**20 MET-h/week** (~150–300 min brisk walking/week).

ASCO

Exercise Guidelines

- ▶ During and after treatment, ASCO advises survivors to **avoid inactivity** and work toward **~150 minutes of moderate aerobic activity per week** plus **2 sessions of strength training**, tailored to personal limitations.
- ▶ Exercise is a **first-line therapy for cancer-related fatigue**
- ▶ The evidence that “moving more helps you live longer and feel better after cancer” is now very strong.

Diet

- ▶ **After diagnosis, higher diet quality** (Mediterranean, DASH, others) is associated with **lower all-cause and cancer-specific mortality** among survivors
- ▶ Western/unhealthy patterns are associated with higher mortality.
- ▶ These are associations, not proof of causation. (More on this later)
- ▶ ASCO's guideline for patients **in active treatment** recommends regular exercise and *general* healthy-diet principles; it **does not endorse a specific therapeutic diet** to improve cancer control during treatment and specifically advises **against “neutropenic diets”** (no raw fruits/vegetables) for infection prevention

Growing Incidence of Cancer in Younger Patients (UK)

- ▶ Colorectal Cancer: Significant increase in patients under age 50 years, primarily in the wealthiest countries worldwide
- ▶ Breast Cancer: Smaller but significant increase in patients under age 50 years, primarily in the wealthiest countries worldwide
- ▶ Uterus: General increase in all age groups in North America, with evidence of a greater increase in those age 30 – 50
- ▶ Pancreas: Recent increase in those under age 40 in North America

British Journal of Cancer, 2022

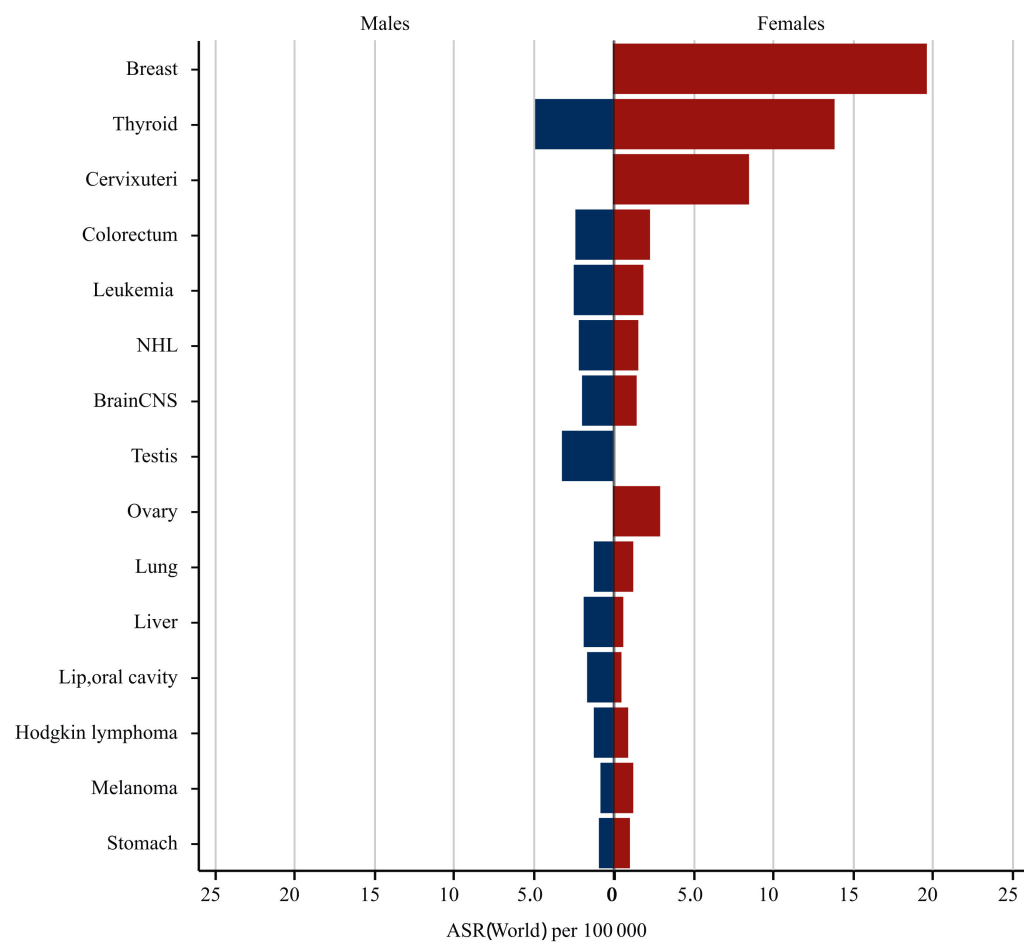
► JAMA 2020:

In this US population-based study, cancer in Adolescents and Young Adults was shown to be a growing health concern, with many cancer subtypes having increased in incidence from 1973 to 2015.

The rate of cancer in adolescents and young adults increased by 29.6% from 1973 to 2015,

Growing Incidence of Cancer in Younger Patients (US)

Young Adults: Estimated number of new cancer cases in 2022 (ESMO 2025)



Growing
Incidence of
Cancer in
Younger
Patients

What is causing
this
phenomenon?



AACR Special Conference in
Cancer Research: The Rise in
Early-Onset Cancers—
Knowledge Gaps and
Research Opportunities

December 10 - 13, 2025,
Montreal, Canada

Lifestyle- related cancers

- Esophageal
- Colorectal
- Gallbladder
- Stomach
- Liver
- Pancreatic
- **Breast Cancer**
- Uterine Cancer
- Ovarian Cancer
- Thyroid Cancer
- Kidney Cancer
- Multiple Myeloma
- Meningioma

Ultraprocessed Foods (UPFs)

The Lancet 2023
(eClinicalMedicine)

- ▶ The mean UPF consumption was 22.9% of the total diet in a study of about 200,000 people (50% - 60% of calories)
- ▶ During a 10 year follow up period, about 16,000 developed cancer and about 4000 died of cancer.
- ▶ Every 10 percentage points increment in UPF consumption was associated with an increased incidence of cancer, especially ovarian cancer.
- ▶ Every 10 percentage points increment in UPF consumption was associated with an increased risk of cancer – related death, especially from ovarian and breast cancer.

Ultraprocessed Foods (UPFs)

- ▶ Ultra-processed foods make up more than 50% of calories consumed by adults
- ▶ Ultra-processed foods make up more than 60% of calories consumed by children
- ▶ California has passed legislation
- ▶ **The Real Food, Healthy Kids Act**
- ▶ California Department of Public Health will have until June 2028 to determine which foods are the most concerning, targeting those to phase out from school cafeterias by 2035.



Two important Caveats:

**Correlation is not
causation.**

Diet and
Cancer Risk

Defining ultra-processed
food

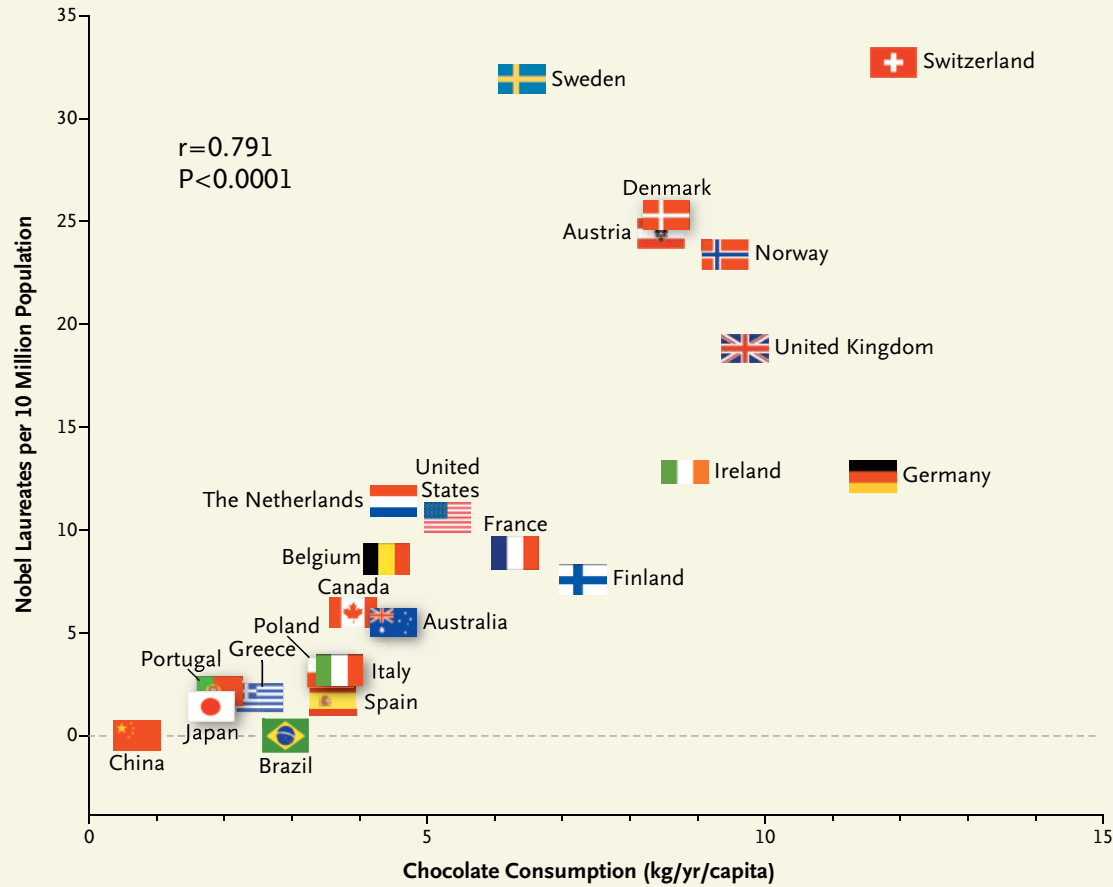


Figure 1. Correlation between Countries' Annual Per Capita Chocolate Consumption and the Number of Nobel Laureates per 10 Million Population.

Correlation is not Causation



Two important Caveats:

Correlation is not causation.

Defining ultra-processed food

Diet and
Cancer Risk

PROCESSED FOOD GUIDE

@djblatner

Based on the "NOVA system" that puts food into 4 groups based on how processed it is

GROUP 1 UNPROCESSED or MINIMALLY PROCESSED FOODS

1

GOAL: Eat these the most

EXAMPLES: fruits, veggies, nuts, seeds, poultry, fish

GROUP 2 PROCESSED CULINARY INGREDIENTS

2

GOAL: Use small amounts

EXAMPLES: olive oil, butter, honey, maple syrup, salt

GROUP 3 PROCESSED FOODS

3

GOAL: Part of healthy diet in small amounts

EXAMPLES: canned food w/ salt, cheese, wine, beer

GROUP 4 ULTRA-PROCESSED FOODS

4

GOAL: Avoid when possible

EXAMPLES: soda, candy, chips, hot dogs, frozen pizza

Defining UPFs: NOVA Food Classification

Nutrient
Overlap in
Various
Approaches

But it is more complicated...

- ▶ Mechanical processing affects carbohydrates more than proteins and fats
- ▶ Unprocessed carbohydrates are digested slowly, provide fiber and don't spike blood sugar and insulin levels
- ▶ Disrupting structure often strips away needed fiber, accelerates digestion and spikes blood sugar and insulin levels
- ▶ Whole kernel grains (wheat berries or old-fashioned oatmeal) are healthier than highly processed grains (white bread, instant oatmeal)
- ▶ Whole fruits are healthier sweeteners than sugar
- ▶ But those distinctions are less important when we compare steak and ground beef, soybeans and tofu, olives and olive oil, peanuts and peanut butter, or cacao and dark chocolate.

- ▶ Soft drinks and energy drinks
- ▶ Packaged snacks and chips
- ▶ Instant noodles or soups
- ▶ Processed meats like hot dogs
- ▶ Sweetened breakfast cereals
- ▶ Candy bars and ready-to-eat frozen meals
- ▶ Processing methods that involve *multiple industrial techniques* (extrusion, molding, hydrogenation, chemical flavoring) and include *additives* for color, flavor, emulsification, and texture.
- ▶ UPFs are typically high in calories, sugars, fats, and salt, and low in fiber and nutrients.

Ultra
Processed
Foods
To
Minimize

What should we do?

- Check the list of ingredients – Follow Michael Pollan
 - “Eat Food, Not Too Much, Mostly Plants”
 - “Don’t eat anything your great-grandmother wouldn’t recognize as food.”
 - “If it’s a plant eat it; if it was made from a plant, don’t.”
- Look for food substances that are never or rarely used in kitchens
- Additives are often designed to make the food
 - Inexpensive to manufacture with long shelf life
 - Convenient
 - Highly palatable (e.g., too sweet)
- Examples:
 - high-fructose corn syrup
 - flavor enhancers
 - food coloring
 - Emulsifiers (e.g., palm oil in “no stir” peanut butter)

Impossible Burger

- ▶ Water
- ▶ soy protein concentrate
- ▶ sunflower oil
- ▶ coconut oil
- ▶ natural flavors
- ▶ potato protein
- ▶ Methylcellulose
- ▶ yeast extract
- ▶ cultured dextrose
- ▶ modified food starch
- ▶ soy leghemoglobin (a genetically engineered ingredient derived from soy and yeast that contains heme, iron compound of blood)



Impossible Burger vs Beef (80% lean)

- ▶ Slightly lower in calories (240 c vs 287 calories)
- ▶ Less fat content (14 g vs 23 g)
- ▶ Similar saturated fat content (8 g vs 9 g)
- ▶ No cholesterol (vs 80 mg cholesterol)
- ▶ Much more sodium (370 mg vs 70 mg)
- ▶ Contains some carbohydrate and fiber (9 g and 3 g)
- ▶ Contains not as much protein (19 g vs 26 g)
- ▶ Ultra-processed ingredients vs mechanical processing



Why healthy diets can work:

- ▶ Anti-inflammatory foods (fruits, vegetables, omeg-3 fats, fiber).
- ▶ Fat tissue is inflammatory
- ▶ The aromatase enzyme in fat tissues contributes to post-menopausal estrogen production
- ▶ Insulin signaling may promote tumor growth
 - ▶ Lifestyle interventions designed to decrease insulin resistance
- ▶ There are unhealthy versions of every diet
 - ▶ Ultra processed plant-based foods
- ▶ Alcohol
 - ▶ Known risk factor for breast cancer
 - ▶ Moderate consumption is associated with a higher risk of breast cancer than no consumption
 - ▶ Watch for daily alcohol as self-medication

Lifestyle Goals

- ▶ Focus on diet and exercise
- ▶ Be aware of risks for weight gain
 - ▶ Cancer Treatment can be associated with weight gain not weight loss
 - ▶ Transition from pre-menopausal to post-menopausal state associated with a decrease in basal metabolic rate
- ▶ Higher Diet Quality help no matter which diet is right for you
 - ▶ Mediterranean Diet
 - ▶ Plant-based Diet
 - ▶ DASH (Dietary Approaches to Stop Hypertension)
 - ▶ Fruits, vegetables, whole grains, lean proteins, healthy fats
- ▶ There are unhealthy versions of every diet
 - ▶ Ultra processed plant-based foods
- ▶ Move as much as possible