



Rising Rate of Cancer in Young Adults

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I have no financial disclosure to report.



Rising Cancer Rates Among Young Adults

Objectives:

- Examine current statistics and incidence rates
- Identify cancer types showing increased prevalence
- Explore potential contributing factors
- Discuss early detection strategies
- Promote awareness and prevention

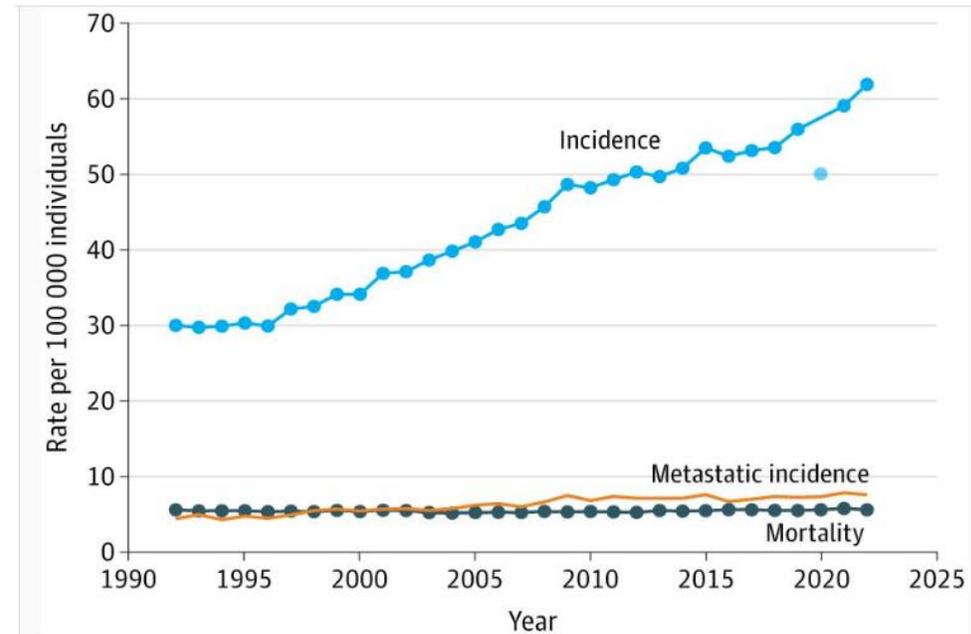


Figure 1. Combined Cancer Incidence and Mortality for the Fastest-Rising Cancers in US Adults Younger Than 50 Years

The Rise in Early-Onset Cancer in the US Population—More Apparent Than Real.

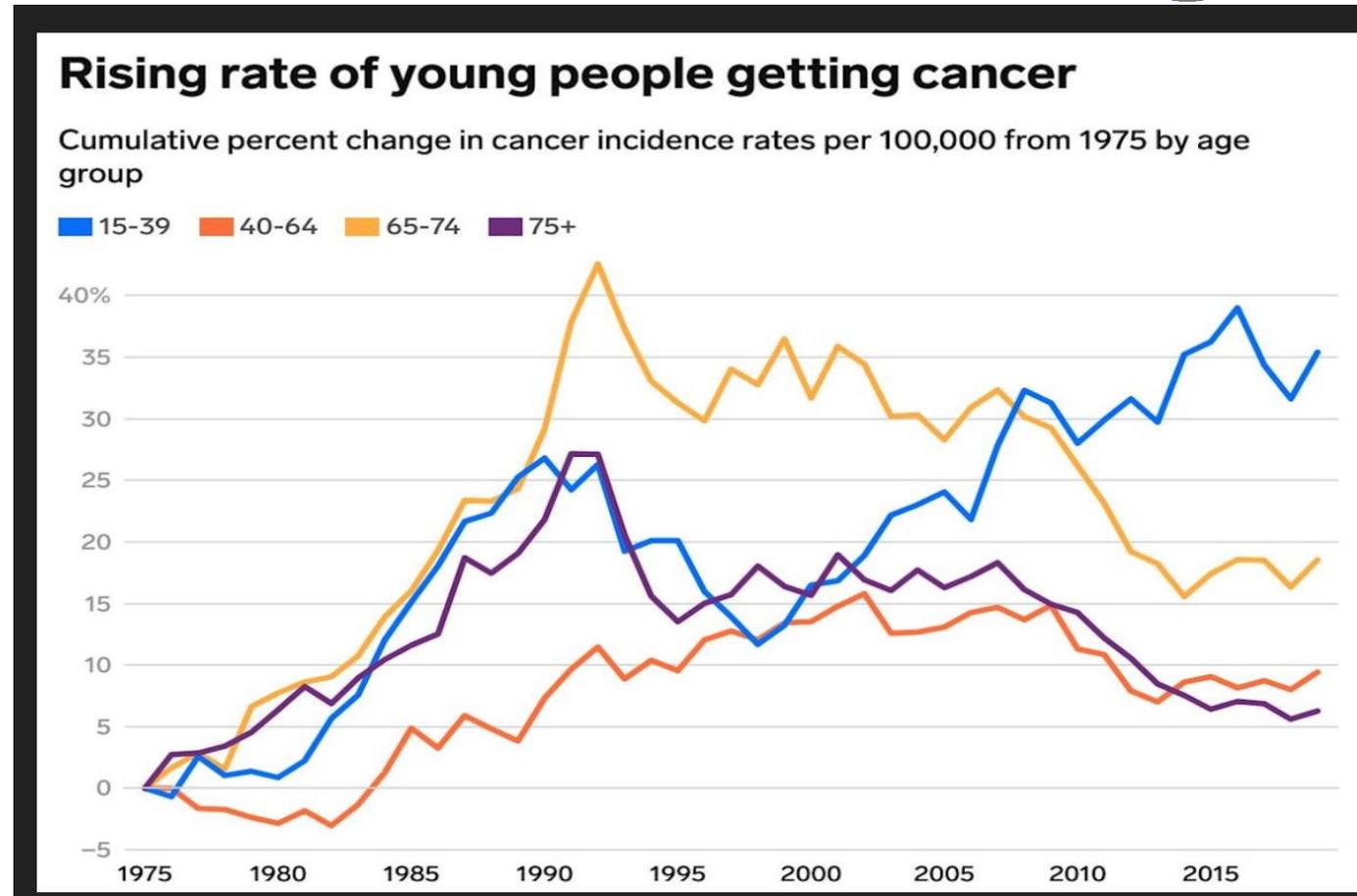
JAMA Intern Med. September 28, 2025.

- Cancer incidence in adults aged 20-39 has increased by 1-2% annually over the past decade



McKean-Cowdin et al. :**decline in all-sites cancer incidence in 1990s** due to reductions in smoking-related cancers

2006, FDA approved Gardasil



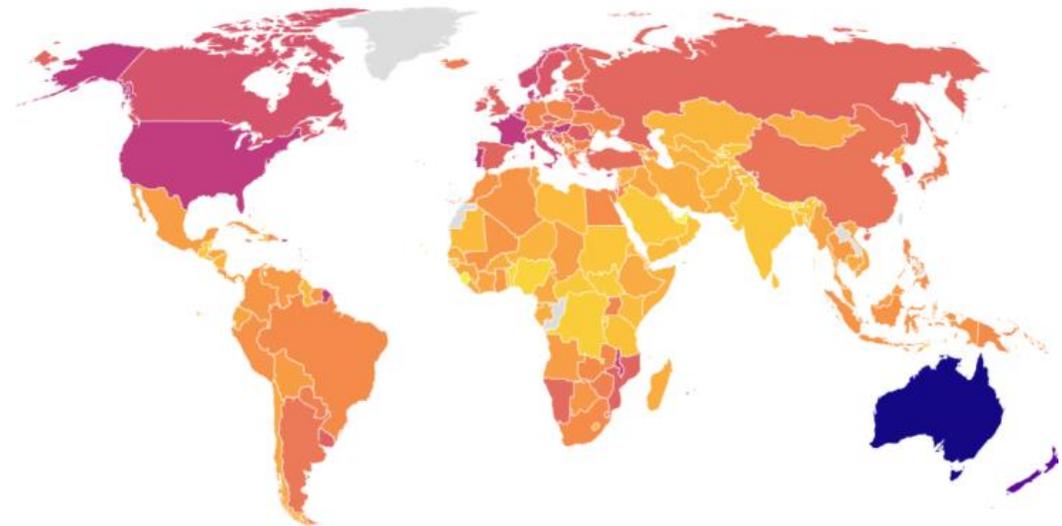
- **Cancer in AYAs is rare, but incidence is rising**
- **Adolescents and Young Adults (AYAs):15–39**
- **Annual increase:** ~1–2% over the past decade

Globally in 2021: 3.16 million new cases age 15–49

- **Notable increases:**
 - Breast cancer
 - Colorectal cancer (0.9%–1.5% in 20–39 years)
 - Gastric cancer
 - Pancreatic cancer
 - Thyroid (3%)kidney
 - Germ cell tumors
 - uterine cancers(3%)
- **Causes multifactorial, not fully understood**
- **Clinical vigilance needed for early diagnosis**

Global cancer rates in people under 50

Cases per 100,000 people



2020 United states:

89,500 new cancer cases in AYA
 9270 cancer deaths in AYAs

Breast cancer in 2020

Worldwide 2.3 million women diagnosed breast cancer
 United States 255,000 women diagnosed breast cancer (11%)
6-7% diagnosed before the age of 40

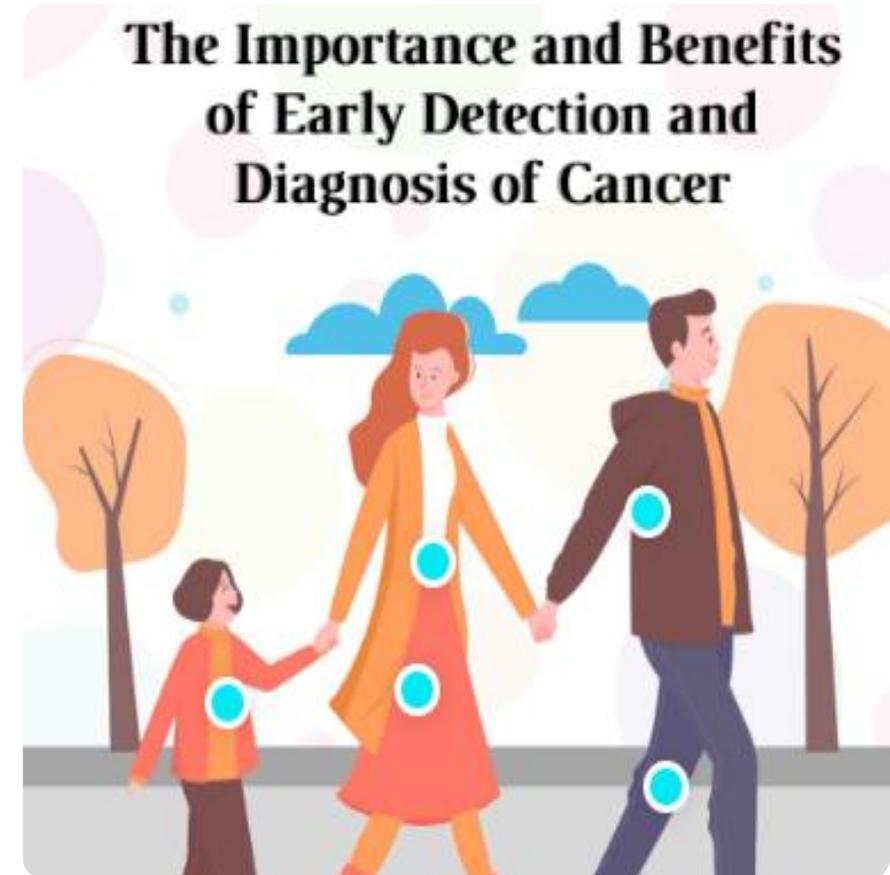
Breast cancer diagnosis in California 2020

~20,000 50 years and older
 ~ 6000 18-49 years

world population in 2020 was approximately 7.8 billion people.

total United States population in 2020 was approximately 331,449,281

4.25%





JAMA



Male
 Testicular 37597
 melanoma 20850
 Lymphoma 19532

Female
 Breast 72564
 Thyroid 46865
 Cervix and uterus 33828

Figure 1. Cancer Incidence Trends for Top 12 Disease Sites with the Highest Absolute Incidence for Male and Female Adolescents and Young Adults (AYAs) From 1973 to 2015

Trends in Cancer Incidence in US Adolescents and Young Adults, 1973-2015.
 JAMA Netw Open. November 30, 2020.



Cancer Mortality

Cancer mortality rates are steadily declining in AYAs

- across all age groups and both sexes
- Compared with adults aged ≥ 40 , AYA better survival except breast and colorectal cancers

Women (30–39 years):

- Leading cancer deaths: **Breast, cervical, and colorectal cancers**
- **Breast cancer** 22% of AYA female cancer deaths in 2017

Men:

- **Brain cancer (Glioma)** is the leading cause of cancer death (3,700 cases diagnosed in 2020)

Adolescents & Young Adults (20–29 years):

- **Leukemia** is the leading cause of cancer and cancer-related death

Ways to Reduce Your Risk for Breast Cancer



Keeping a healthy weight.



Exercising regularly.



Getting enough sleep.



Limiting alcohol intake.



Breastfeeding your babies.



www.cdc.gov/BringYourBrave
#BringYourBrave



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Breast Cancer

- **Most common cancer in AYAs (absolute numbers)**
- **Advanced stage at diagnosis more common**
 - Only 47% diagnosed at localized stage
 - 60–65% in older women
- **Risk factors:**
 - Family history (especially relatives diagnosed <50)
 - Heritable mutations (BRCA1/2, Li-Fraumeni syndrome)
 - *Most AYA cases **do not** have these risk factors*
- **Survival:**
 - 5-year relative survival rate: 86% (AYAs) vs. 91% (ages 45–64)
- **Reason for lower survival ?**
 - Routine Mammography not recommended for average-risk AYAs
 - Delays in diagnosis & more aggressive disease biology
- **Possible drivers of rising rates:**
 - Obesity ,sedentary lifestyle ,alcohol consumption , high intake of processed food
 - Changes in reproductive patterns (older age at first birth, lower fertility rate)
- **Breast feeding does reduce risk of breast cancer**

Colorectal Cancer

- **4th most common cancer** adults aged 30–39 (4,100 cases in 2020)
- **Leading cause of cancer death in men** (2017); **3rd in women**
- **Younger-onset CRC:**
 - More advanced stage at diagnosis
 - More aggressive histopathology
 - Poorer prognosis vs. older adults
- **Unique features in patients <30:**
 - More likely distal colon/rectal location
 - Higher rates: microsatellite instability, mucinous & signet ring cell histology
- **Rising incidence** relate to **obesity** and **dietary changes**; exact causes unclear





Gastrointestinal Cancers

Early-Onset Gastric Cancer (EOGC):

- Diagnosed before age 45— 10–30% of new cases
- More likely to present at advanced stage with aggressive features
- Less linkage to traditional risks (**H. pylori**, smoking, alcohol) more genetic/familial cases

Demographic Trends:

- Rising EOGC rates in young Hispanic women (U.S.)
- **Appendiceal cancer** has fastest rising incidence
- **Increases in intrahepatic bile duct and pancreatic cancers**— especially among young women

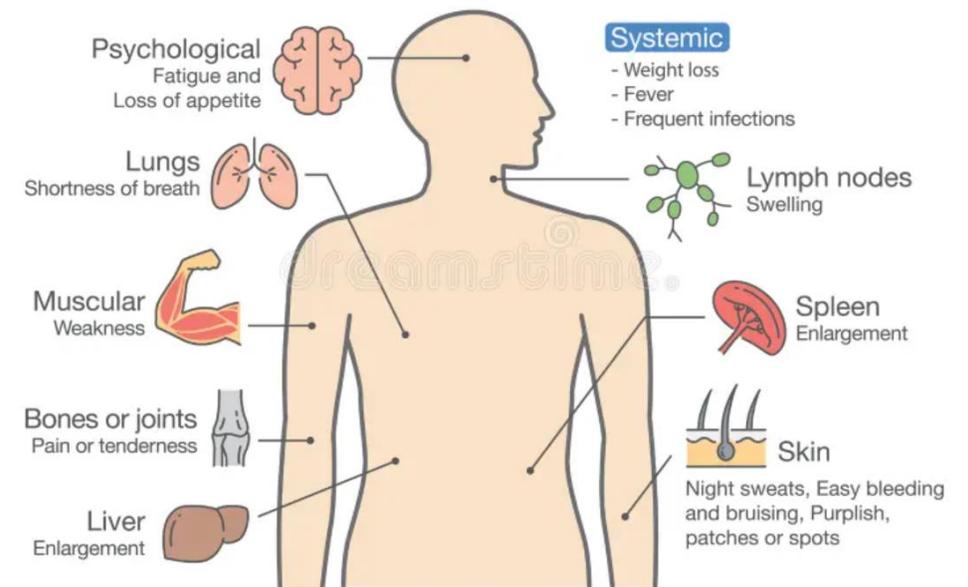
Leukemia

Similar symptoms in both adolescent and adult
 cytopenia and organ infiltration

- **ALL and AML:** Majority of AYA leukemia cases
 - ~600 cases (ALL & AML combined) in 2020
 - Leading cause of cancer death (ages 15–29)
- **Rising incidence:**
 - Possible links to increased radiation (e.g., CT scans)
 - prior chemotherapy, obesity
- **5-year relative survival rates:**

| | | |
|-------|--------------------------|-----------------------------|
| • ALL | 65% in AYAs (ages 15–39) | 87% in children (ages 0–14) |
| • AML | 43% in AYAs | 58% in children |
- **Survival gaps** might be due to care access, type of therapy,
- and disease biology and aggressiveness in older AYAs

SYMPTOMS OF LEUKEMIA





Lymphoma

•Incidence (2020 Cases):

- Hodgkin lymphoma: 4,200 cases
- Non-Hodgkin lymphoma: 4,600 cases

•Age Groups:

- Hodgkin lymphoma: most common in AYAs aged 15–29
- Non-Hodgkin lymphoma: more common in aged 30–39

•Risk Factors:

- Prior **Epstein-Barr virus (EBV)** infection (especially ages 15–24)
- Immunocompromising conditions (HIV, post-transplant)
- **Obesity** linked to diffuse large B-cell lymphoma

•Prognosis:

- 5-year relative survival rates:
 - >**94%** for Hodgkin lymphoma
 - >**83%** for non-Hodgkin lymphoma

Thyroid Cancer

- ~14,400 cases in 2020 (majority women)

•Rising Incidence:

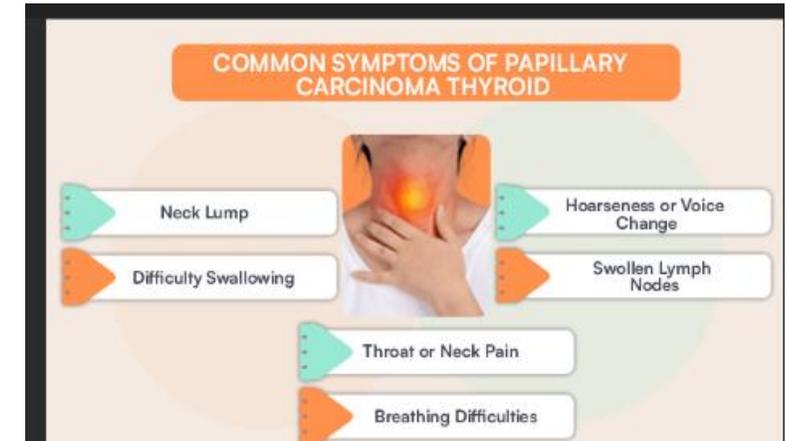
- ↑ ~3% yearly (ages 20–39)
- ↑ ~4% yearly (ages 15–19)
- Likely due to improved detection
- Papillary thyroid cancer most common type

•Risk Factors:

- Exposure to CT scans increases risk >2-fold
- **female sex, family history (multiple endocrine neoplasia), certain benign thyroid diseases**
- **obesity and environmental factors**

•Prognosis:

- 5-year survival rate >99% (ages 20–39)
- More likely to present with larger tumors or regional lymph node than older adults
- Less likely to have distant metastases; prognosis excellent



Melanoma

- **Third most common cancer** in ages 20–39

- ~7,900 cases in 2020

- **Incidence trends:**

- Declining rates (2007–2016):
 - Adolescents: ↓6.2% per year
 - Adults in their 20s: decline linked to less indoor tanning & better sun protection

- **Gender difference:**

- More common in AYA women than AYA men (opposite in older adults)

- **Clinical features:**

- Spitzoid melanomas = rare, more frequent in AYAs than older adults

- **Outcomes:**

- Mortality down ~5% per year in AYAs
- 5-year relative survival: **>94%** (80% diagnosed at early stage)

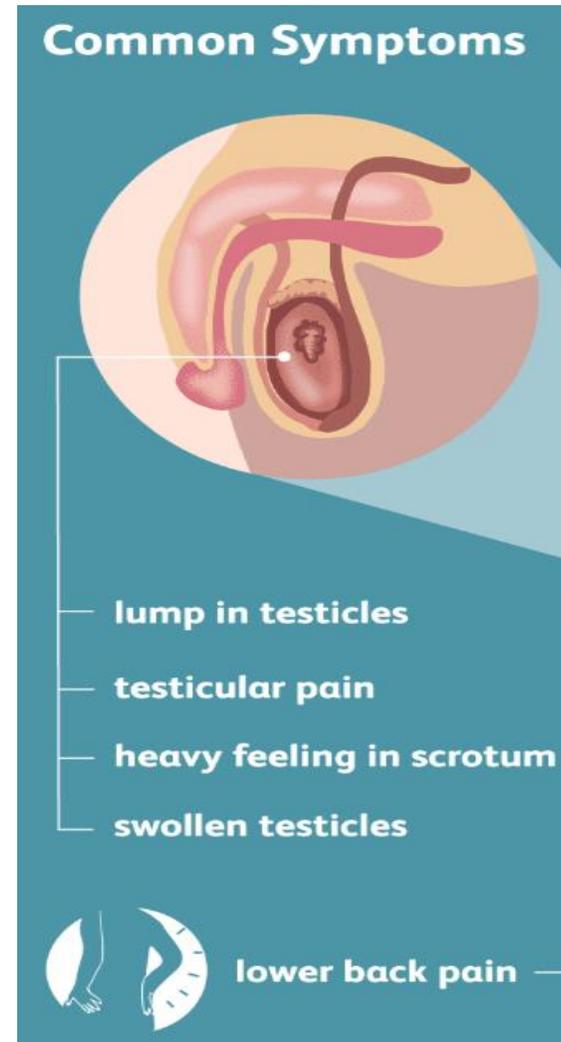
- **Risk factors:**

- Genetic susceptibility + early life UV exposure



Testicular & Germ cell Tumors

- **Higher rates in AYA men than women** (cause unknown)
- **Incidence (2020):**
 - ~6,500 new cases in AYA men
 - Most common cancer in men aged 20–39
 - ages 30–39 (13 per 100,000; 2012–2016)
- **Demographics:**
 - Highest rates in Whites > Hispanics
- **Risk Factors:**
 - Cryptorchidism (undescended testis)
 - Klinefelter syndrome
 - Family history (4× higher risk in first-degree relatives)
- **Prognosis:**
 - 5-year relative survival >**95%** in all age groups



Cervical Cancer

- **Global incidence decreasing** (screening & HPV vaccination)
- **Second leading cause of cancer death** women aged 30–39
- **Risk factors:**
 - Persistent HPV infection (primary cause)
 - Smoking & immunocompromise
 - oral contraceptive use may slightly increase risk
- **Prevention:**
 - HPV vaccination
 - Screening & removal of precancerous lesions
- **Trends:**
 - Age 20s ↓ 1.6% per year (2007–2016)
- **5-year relative survival:**
 - 82% (ages 20–29), 80% (ages 30–39)
- **Screening rates (2018):**
 - 74% (ages 21–29)
 - 90% (ages 30–39)





Obesity in young adults

colorectal

uterine (endometrial)

kidney (renal cell)

pancreatic, gallbladder, thyroid, ovarian,

multiple myeloma, esophageal

adenocarcinoma

Possibly diffuse large B-cell lymphoma

Early life obesity increase: colorectal cancer: odds ratios up to 1.88 for obesity compared to normal BMI.

endometrial cancer exceeding 2.3 for BMI ≥ 30 .

JAMA

“Of these modifiable risk factors, obesity and overweight status due to lack of exercise and healthy diet have been associated with 13 types of cancer according to the International Agency for Research on Cancer (endometrial, esophageal adenocarcinoma, gastric cardia, liver, kidney, multiple myeloma, meningioma, pancreatic, colorectal, gallbladder, breast, ovarian, and thyroid), which accounts for 40% of all cancers diagnosed in the US each year.”

— **Malcolm Seth Bevel, PhD, MSPH¹**, *et al.*, Cancer Prevention, Control and Population Health, Georgia Cancer Center, Department of Medicine, Medical College of Georgia, Augusta University, Augusta and other institutions

Association of Food Deserts and Food Swamps With Obesity-Related Cancer Mortality in the US.

JAMA Oncol. June 30, 2023.



What is causing the increased rate?

Obesity

Family History

1. Colorectal cancer
2. Breast Cancer
3. Hodgkin and some non-Hodgkin lymphomas: siblings
4. Melanoma
5. Testicular germ cell tumors, 4-fold increase first-degree relative

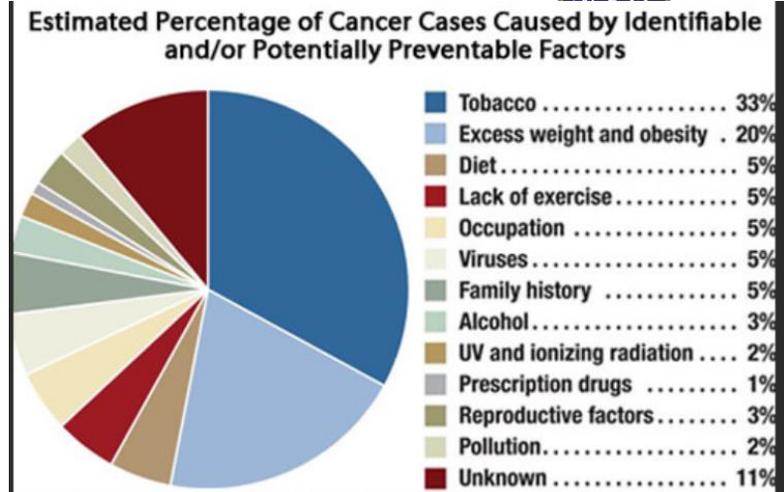
Ultraviolet Light Exposure

Melanoma: Tanning bed use before age 35: 60% higher risk

Radiation Exposure, CT scans: Linked to thyroid cancer

Processed food, Alcohol

Microplastics





Family History

- **10–30% showing a clear familial or hereditary component**

- Colorectal CA 28–30% have a family history of the disease

- breast cancer 10% of cases are related to genetic predisposition or family history

- ovarian and pancreatic cancers 10–15%.



Mechanisms by which carcinogens cause cancer

- **Direct DNA Damage & Genetic Alterations**

Oncogenic activation: Turning on growth promoting genes

Tumor suppressor inactivation: disabling protective genes

- **Oxidative Stress & Free Radical Damage**

- **Immune System Suppression** (autoimmune disease, medications, anti cancer medications, HIV)

- **Hormonal Disruption** (estrogen, birth control)

- **Cell Cycle Dysregulation** (increased cell proliferation)

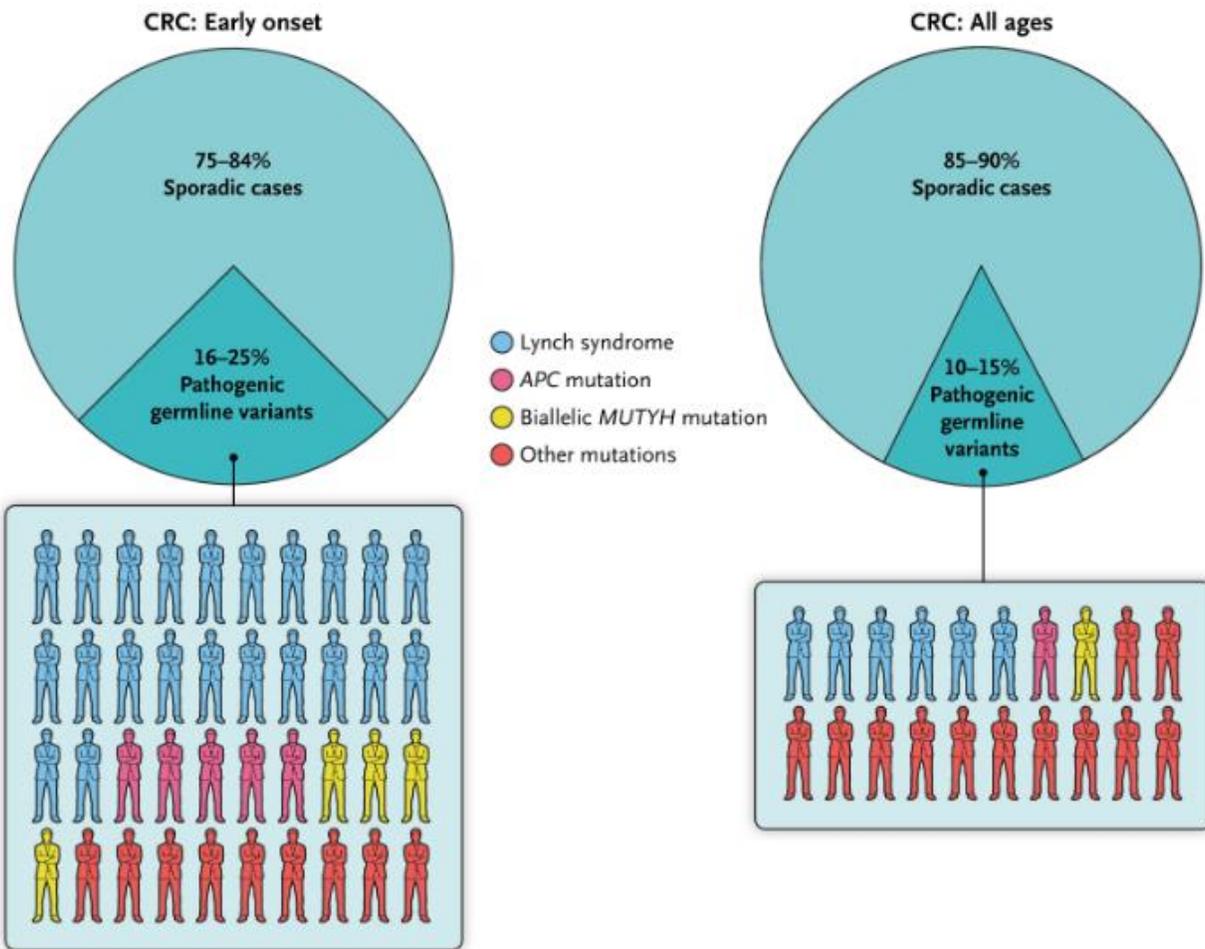


Figure 3. Prevalence of Pathogenic Germline Variants in Patients with Early-Onset Colorectal Cancer (CRC).

Increasing Incidence of Early-Onset Colorectal Cancer. N Engl J Med. April 20, 2022.



Hereditary Cancer Syndromes

BRCA1/2

Hereditary Breast & Ovarian Cancer

Early-onset Breast

Ovarian

Pancreatic

Prostate

Lynch Syndrome

MLH1, MSH2, MSH6, PMS2, EPCAM

Colorectal

Endometrial

Ovarian

Gastric

Other Cancers

Familial Adenomatous Polyposis

APC Gene

Colorectal Polyps

Colorectal Cancer

Duodenal

Li-Fraumeni Syndrome

TP53 Gene

Breast

Sarcoma

Brain

Adrenocortical

Cowden Syndrome

PTEN Hamartoma Tumor Syndrome

Breast

Thyroid

Endometrial

Peutz-Jeghers Syndrome

STK11/LKB1 Gene

GI Polyps

Breast

Colorectal

Pancreatic



Common Hereditary syndromes

- 10% of all cancers in AYA 10-25%
- hereditary breast and ovarian cancer (BRCA1/2): early-onset breast, ovarian, pancreatic, and prostate cancers
- Lynch syndrome: colorectal, endometrial, ovarian, gastric, and other cancers.
- familial adenomatous polyposis
- Li-Fraumeni syndrome: breast, sarcoma, brain, and adrenocortical carcinoma
- Cowden syndrome (PTEN hamartoma tumor syndrome): breast, thyroid, and endometrial cancers
- Peutz-Jeghers syndrome: gastrointestinal polyps, breast, colorectal, and pancreatic cancers
- Juvenile polyposis syndrome: colorectal and gastric cancers
- Multiple endocrine neoplasia (MEN)



Testing for Lynch syndrome should be considered in all patients with newly diagnosed colorectal cancer, regardless of age or family history

The New England Journal of Medicine. 2018;379(8):764-773. doi:10.1056/NEJMcp1714533.

Breast/Ovarian Cancer Syndrome

- ≥ 1 close relative with breast cancer ≤ 45 years
- ≥ 1 close relative with ovarian cancer
- ≥ 2 close relatives with breast cancer
- Male relative with breast cancer
- Known BRCA1/2 mutation in family

Lynch Syndrome (Colorectal)

- ≥ 3 relatives with colorectal cancer
- ≥ 2 generations affected
- ≥ 1 diagnosis before age 50
- Endometrial cancer before 50
- Multiple Lynch-associated cancers

Li-Fraumeni Syndrome

- Sarcoma before age 45
- Close relative with cancer before 45
- Another close relative with cancer before 45 or sarcoma at any age



Consider Genetic testing

Family History Red Flags



Multiple Relatives Affected

Same or related cancers in multiple family members



Cancer Clusters

Cancers on one side of the family (maternal or paternal)



Young Age at Diagnosis

Close relatives diagnosed at unusually young ages



Rare Cancers

Uncommon cancer types present in family history



Ashkenazi Jewish Ancestry

With breast or ovarian cancer in family

High-Risk Cancer Types



Breast Cancer

Especially early-onset (before age 50) or triple-negative breast cancer



Ovarian Cancer

All ovarian cancers warrant genetic evaluation



Colorectal Cancer

Particularly when diagnosed before age 50



Multiple Primary Cancers

Two or more different cancer types in same person



Bilateral Cancers

Cancer in both breasts, kidneys, or paired organs

Current guidelines

- **Genetic testing for cancer predisposition individuals with a personal or family history suggestive of hereditary cancer syndromes**
- **Routine testing of healthy individuals without risk factors not advised**
- **Genetic counseling is essential before and after testing**
- **Ethical and practical considerations include**
 1. **genetic discrimination**
 2. **confidentiality**
 3. **periodic reassessment as guidelines and family histories evolve**



Carcinogens

- **Direct DNA Damage & Genetic Alterations**

Oncogenic activation: Turning on growth promoting genes

Tumor suppressor inactivation: disabling protective genes

- **Oxidative Stress & Free Radical Damage**
- **Immune System Suppression** (autoimmune disease, medications, anti cancer medications, HIV)
- **Hormonal Disruption** (estrogen, birth control)
- **Cell Cycle Dysregulation** (increased cell proliferation)

International Agency for Research on Cancer (IARC)

US National Toxicology Program (NTP)

classify agents as carcinogens evidence from human, animal, mechanistic

2024, IARC

130 agents as Group 1 carcinogens



Healthy Microbiome: Beneficial Gut Bacteria & Cancer Prevention

☀️ Key Beneficial Bacteria

🌿 Lactobacillus

🌿 Bifidobacterium

🌿 Faecalibacterium prausnitzii

These bacteria produce:

🧪 **BUTYRATE** 🧪

Short-Chain Fatty Acids (SCFAs)

🛡️ Anti-Cancer Benefits



Anti-Inflammatory

Reduces chronic inflammation that can lead to cancer development



Anti-Carcinogenic

Directly prevents cancer cell formation and growth



Promotes Apoptosis

Triggers programmed death of malignant cancer cells



Barrier Integrity

Maintains strong intestinal lining to prevent harmful substances from entering bloodstream



Immune Modulation

Regulates immune responses to suppress tumor development



Microbial Balance

Prevents overgrowth of harmful bacteria species



Plant-Based Foods



Dietary Fiber



Fermented Foods

🌿 ❌ Protects Against Harmful Bacteria

⚠️ Fusobacterium nucleatum

⚠️ Enterotoxigenic Bacteroides fragilis

⚠️ Other pro-inflammatory species

Healthy Microbiome

Fermented foods:
Yogurt, Kefir,
Sauerkraut,
vinegar

High-fiber: Whole
grains, Legumes,
fruits, vegetables

Prebiotic foods:
Garlic, onions,
leek, bananas

Polyphenol-rich
foods: dark
chocolate, green
tea, olive, berries

Omega-3 rich
foods: salmon,
Flaxseeds, chia
seeds, walnuts

Diverse plant-
based fruits,
vegetables, nuts,
and seeds

Stay hydrated

Limit processed
foods, artificial
sweeteners, sugar

Avoid
unnecessary
antibiotic

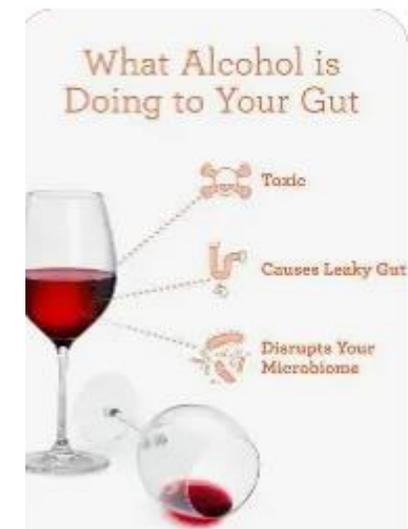
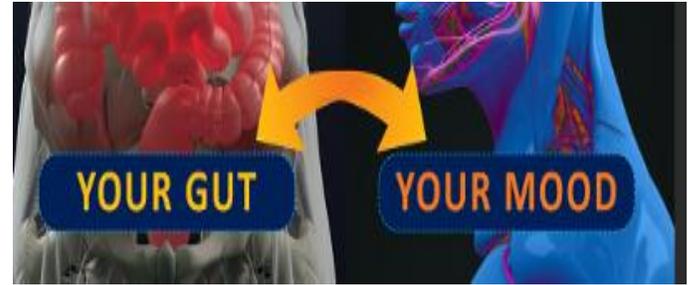
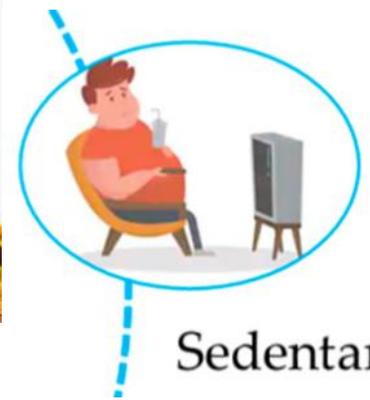
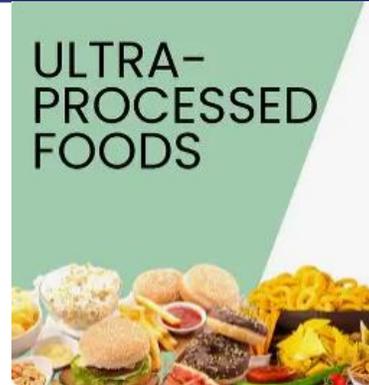
Manage stress

Get regular
exercise



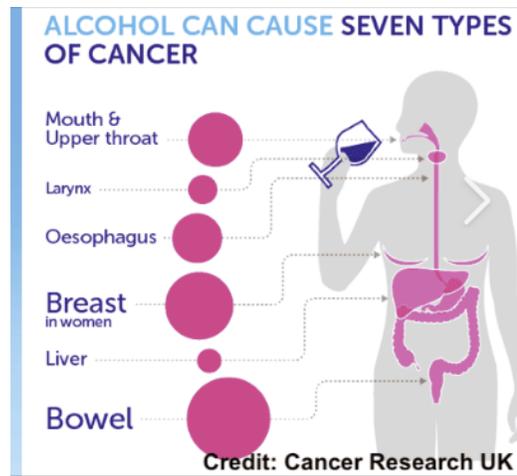
Causes of Dysbiosis:

- Antibiotic use
- Diet: animal protein, saturated fat, sugars, ultra-processed foods
- Environmental Toxins, pesticides
- Stress
- Alcohol
- Sedentary lifestyle



The American Cancer Society highlights that alcohol consumption significantly increases the risk of various cancers, making it one of the most important preventable risk factors.

approximately 5% of all cancers and 4% of all cancer deaths in the United States. The more alcohol consumed, the higher the risk of developing certain types of cancer, including mouth, throat, esophagus, liver, breast, and colorectal cancer.



How Does Alcohol Contribute to Causing Cancer?

1. DNA Damage
2. Impaired DNA Repair
3. Increased Inflammation
4. Oxidative Stress
5. Weakened Immune System



[American Cancer Society Guideline for Diet and Physical Activity for Cancer Prevention](#). Rock CL, Thomson C, Gansler T, et al.

- CA: A Cancer Journal for Clinicians. 2020;70(4):245-271. doi:10.3322/caac.21591.



Microplastics

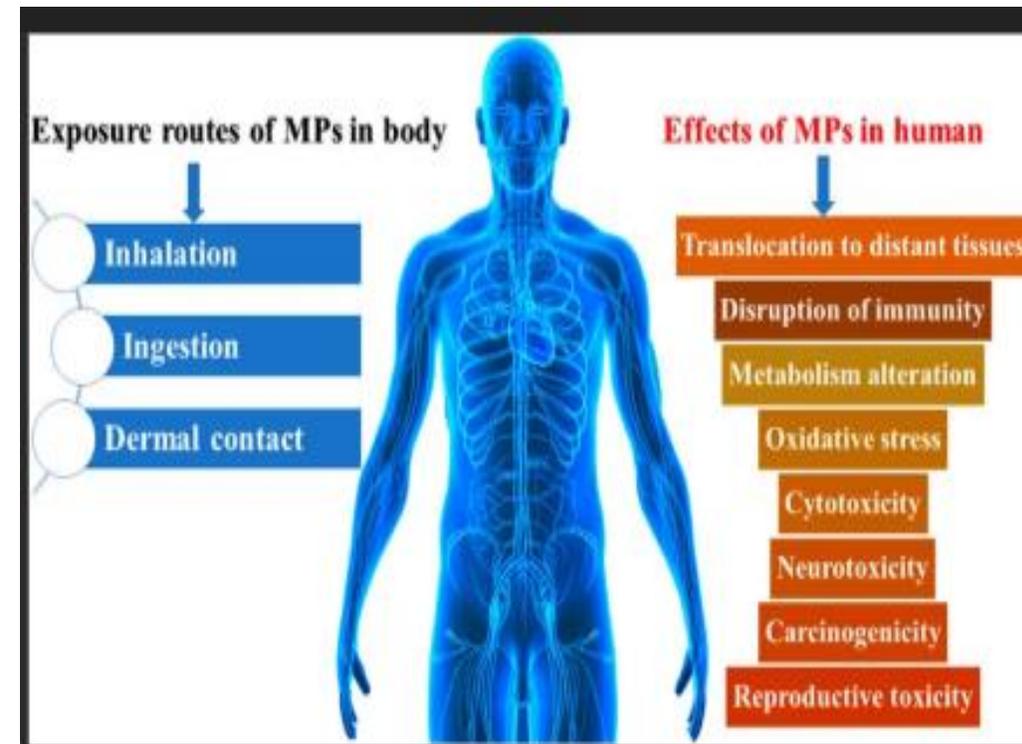
relationship between microplastics and the rising risk of cancer in young adults under active investigation

exposure via ingestion, inhalation, dermal contact
chronic inflammation, oxidative stress, DNA damage, genotoxicity

Epidemiologically, increase early-onset cancers—
colorectal

disrupt the colonic mucus barrier, alter the gut
microbiome, facilitate carcinogenesis

direct causal evidence in humans remains limited





Radiation

while the relative risk increases with multiple scans, the absolute risk remains low

JAMA

“The study by Pearce et al reported that the cumulative ionizing radiation doses from 2 to 3 head CTs could increase the risk of brain tumors nearly 3-fold, while 5 to 10 head CTs could increase the risk of leukemia 3-fold.”

— **Jae-Young Hong, MD, PhD**, *et al.*, Division of Spinal Surgery, Department of Orthopedics, College of Medicine, Korea University, Seoul, South Korea and other institutions
Association of Exposure to Diagnostic Low-Dose Ionizing Radiation With Risk of Cancer Among Youths in South Korea.

JAMA Netw Open. September 3, 2019.



Updated Guidelines



Starting age for colorectal cancer screening lowered from 50 to 45

American Cancer Society made the change in 2018

US Preventive Services Task Force (USPSTF) in 2021

Routine biennial mammography at age 40, rather than age 50, for women at average risk. (2024)



Average vs High Risk Patient Colon Rectal Cancer

High risk patients

- One first-degree relative diagnosed with CRC or advanced adenoma before age 60, or with two first-degree relatives affected at any age: colonoscopy at age 40, or 10 years before the age at diagnosis of the youngest affected relative, whichever comes first
- hereditary syndromes: Lynch syndrome, familial adenomatous polyposis colonoscopy as early as age 20–25, or 2–5 years younger than the youngest diagnosis in the family, with intervals of 1–2 years.
For familial adenomatous polyposis, screening may begin as early as age 10–15 years
- Patient with inflammatory bowel disease
8 years after the onset of symptoms in patients with inflammatory bowel disease (IBD) involving the colon





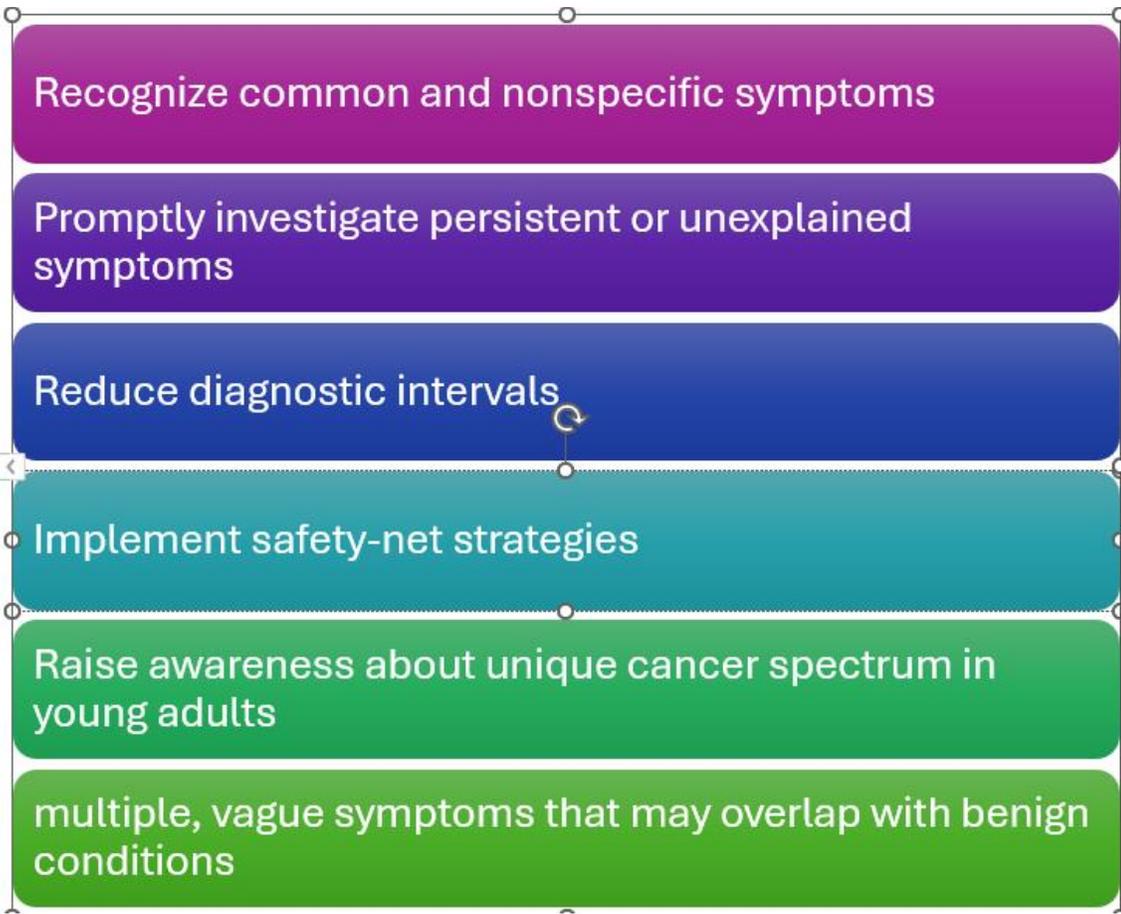
High risk for breast cancer

- BRCA1 or BRCA2
- History of chest radiation therapy (e.g., for Hodgkin lymphoma) before age 30
- ≥ 1 first-degree relative with breast cancer, **diagnosed before age 50**
- First-degree relative with bilateral breast cancer
- Ashkenazi Jewish ancestry with a family history of breast or ovarian cancer
- Personal history of high-risk breast lesions, atypical ductal hyperplasia, atypical lobular hyperplasia
- Calculated 5-year risk of $\geq 3\%$, or a lifetime risk of $\geq 20\%$. (Gail models)

- Age
- Age at first menstrual period
- Age at first live birth (or nulliparity)
- Number of first-degree relatives with breast cancer
- Number of previous breast biopsies
- Presence of atypical hyperplasia in any previous breast biopsy
- Race/ethnicity



Improving early detection of cancer in young adults



WARNING SIGNS & SYMPTOMS OF CANCER



- Unusual lump, swelling, especially in the neck, breast, belly, or testicle
- Unexplained tiredness and loss of energy
- Easy bruising
- Abnormal bleeding
- Ongoing pain in one part of the body
- Unexplained fever or illness that doesn't go away
- Frequent headaches, sometimes along with vomiting
- Sudden eye pain or vision changes
- New onset seizure



| Lymphoma (n=260) | |
|---------------------------|-----------|
| Lump/swelling | 157 (60%) |
| Lymphadenopathy | 144 (55%) |
| Extreme tiredness | 125 (48%) |
| Night sweats | 113 (43%) |
| Weight loss | 94 (36%) |
| Unexplained pain | 68 (26%) |
| Rash/itching | 61 (23%) |
| Dizziness | 41 (16%) |
| Headaches | 34 (13%) |
| Limping/mobility problems | 21 (8%) |

| CNS (n=31) | |
|---------------------------|----------|
| Headaches | 22 (71%) |
| Extreme tiredness | 13 (42%) |
| Dizziness | 11 (35%) |
| Fits/seizures | 10 (32%) |
| Loss of vision | 9 (29%) |
| Unexplained pain | 7 (23%) |
| Weight loss | 7 (23%) |
| Night sweats | 4 (13%) |
| Other symptoms | 4 (13%) |
| Limping/mobility problems | 2 (6%) |

| CNS (n=31) | |
|---------------------------|----------|
| Headaches | 22 (71%) |
| Extreme tiredness | 13 (42%) |
| Dizziness | 11 (35%) |
| Fits/seizures | 10 (32%) |
| Loss of vision | 9 (29%) |
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| Weight loss | 7 (23%) |
| Night sweats | 4 (13%) |
| Other symptoms | 4 (13%) |
| Limping/mobility problems | 2 (6%) |

JAMA Netw Open. 2020 Sep 3;3(9):e2015437. doi: [10.1001/jamanetworkopen.2020.15437](https://doi.org/10.1001/jamanetworkopen.2020.15437)

Addressing the unique needs of AYA cancer survivors



14% of AYA cancer survivors develop a subsequent cancer within 30 years

Most common subsequent cancers:
Melanoma, Breast,
Gastrointestinal,
Genitourinary

Psychosocial challenges: Difficulty coping during early life transitions

Physical and emotional impact:
Fertility issues, sexual dysfunction, body image concerns

Financial burden:
Higher out-of-pocket costs, increased uninsured rates



-  **Key Takeaways:**
- Cancer rates in young adults are genuinely increasing
- Multiple factors contribute to this trend
- Early detection saves lives
- Prevention strategies can make a difference
-  **Recommended Actions:**
- **Healthcare Providers:** Maintain high index of suspicion
- **Public Health:** Update screening guidelines and awareness campaigns
- **Individuals:** Know family history, maintain healthy lifestyle
- **Research:** Continue investigating causes and prevention



Please don't forget to fill out the evaluation form.