Breast Cancer Awareness

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Breast Medical Oncology

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Huntington Cancer Center

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Cedars Sinai Cancer

Disclosures

- None

This presentation and/or comments will be free of any bias toward or promotion of the above referenced companies or their products and/or other business interests.

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Objectives

- Introduction to breast cancer
  - Epidemiology
  - Risk Factors
  - Diagnosis
  - Types
  - Staging
- Surveillance Guidelines
- Radnet Early Breast Cancer Diagnosis (EBCD) program

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Estimated New Cases

Male			Female		
Prostate	313,780	30%	Breast	316,950	32%
Lung & bronchus	110,680	11%	Lung & bronchus	115,970	12%
Colon & rectum	82,460	8%	Colon & rectum	71,810	7%
Urinary bladder	65,080	6%	Uterine corpus	69,120	7%
Melanoma of the skin	60,550	6%	Melanoma of the skin	44,410	4%
Kidney & renal pelvis	52,410	5%	Non-Hodgkin lymphoma	35,210	4%
Non-Hodgkin lymphoma	45,140	4%	Pancreas	32,490	3%
Oral cavity & pharynx	42,500	4%	Thyroid	31,350	3%
Leukemia	38,720	4%	Kidney & renal pelvis	28,570	3%
Pancreas	34,950	3%	Leukemia	28,170	3%
All sites	**1,053,250**		**All sites**	**988,660**	

Estimated Deaths

Male			Female		
Lung & bronchus	64,190	20%	Lung & bronchus	60,540	21%
Prostate	35,770	11%	Breast	42,170	14%
Colon & rectum	28,900	9%	Pancreas	24,930	8%
Pancreas	27,050	8%	Colon & rectum	24,000	8%
Liver & intrahepatic bile duct	19,250	6%	Uterine corpus	13,860	5%
Leukemia	13,500	4%	Ovary	12,730	4%
Esophagus	12,940	4%	Liver & intrahepatic bile duct	10,840	4%
Urinary bladder	12,640	4%	Leukemia	10,040	3%
Non-Hodgkin lymphoma	11,060	3%	Non-Hodgkin lymphoma	8,330	3%
Brain & other nervous system	10,170	3%	Brain & other nervous system	8,160	3%
All sites	**323,900**		**All sites**	**294,220**	

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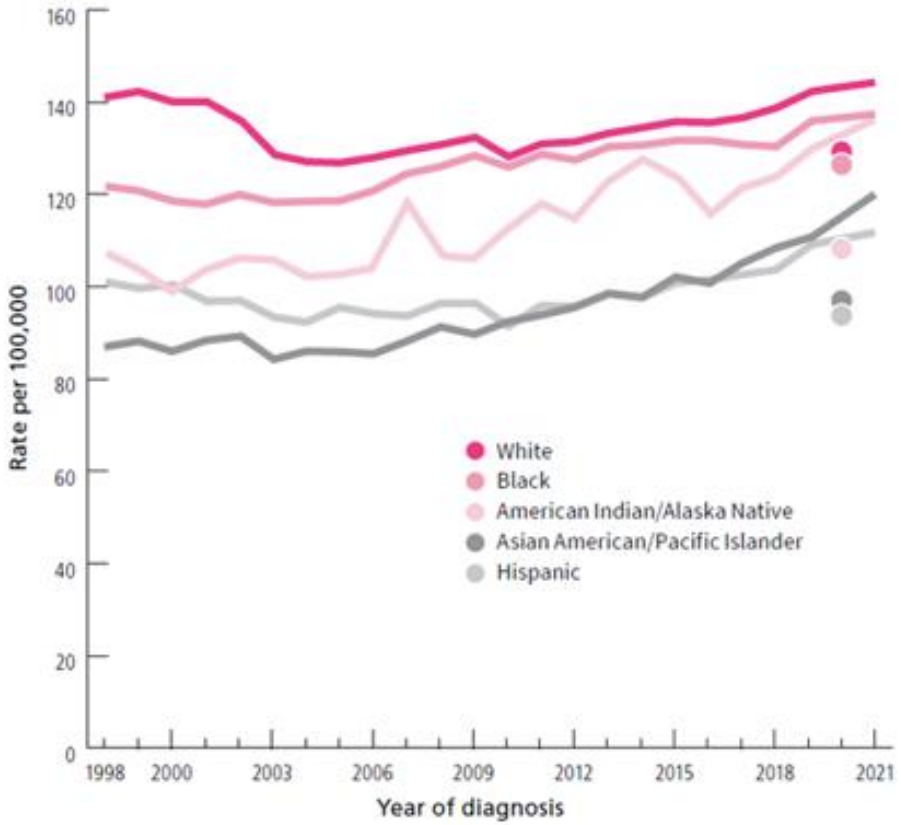
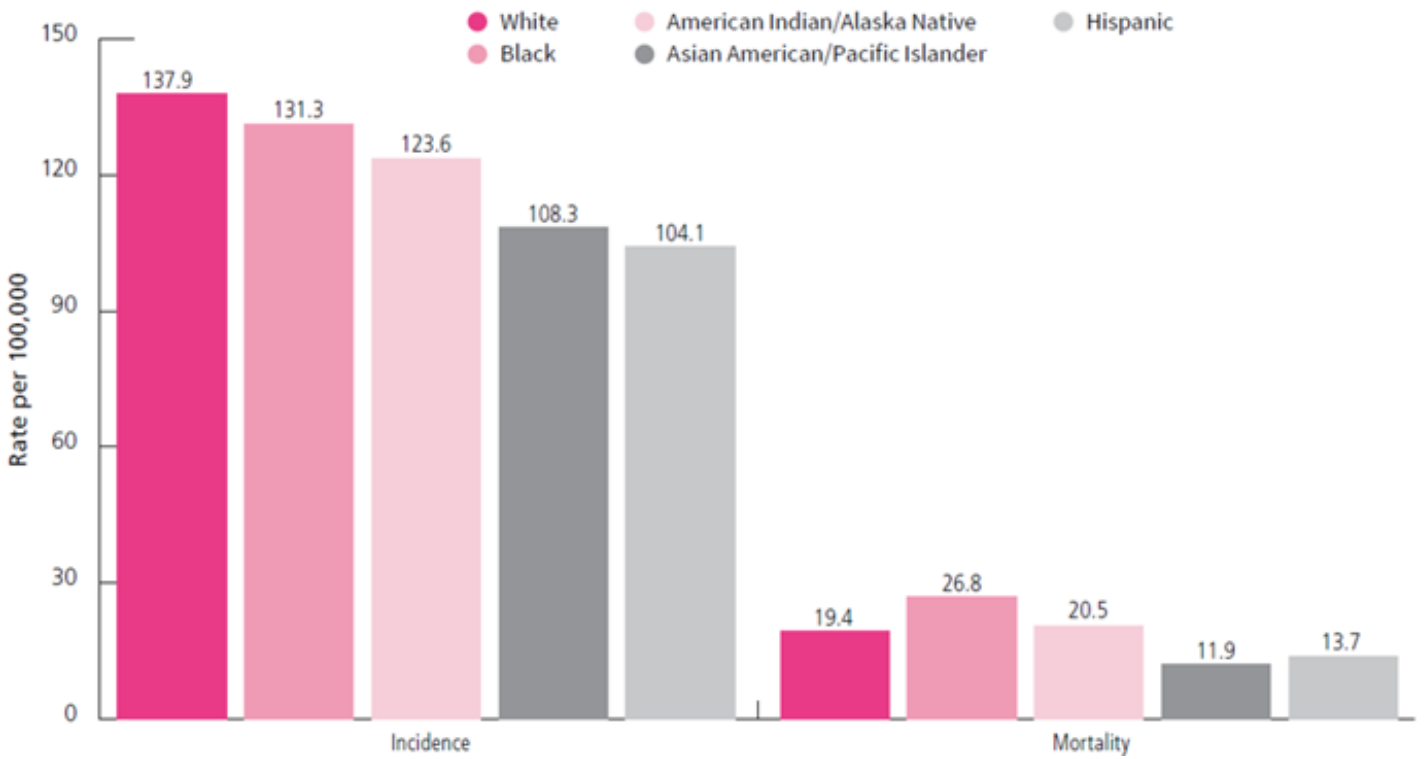
Siegel et al, CA Cancer J Clin 2025

Breast Cancer Facts & Figures

2024–2025

American Cancer Society®





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ACS Breast Cancer Facts & Figures Report 2024 - 2025

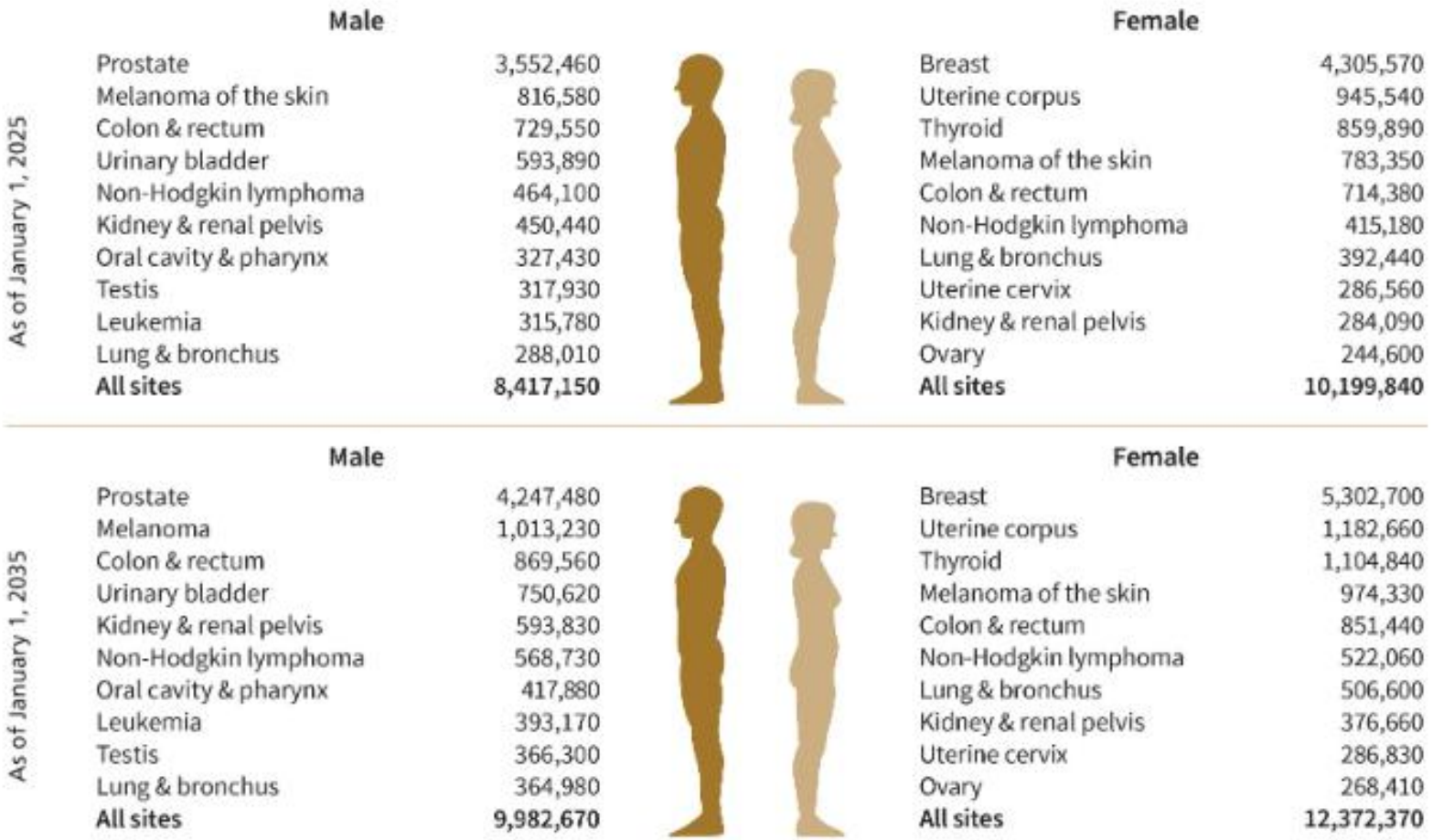

FIGURE 2 Estimated number of survivors of cancer in the United States by site. Estimates do not include in situ carcinoma of any site except the urinary bladder and do not include basal cell or squamous cell skin cancers.

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American Cancer Society, Cancer Treatment & Survivorship Statistics 2025

Some risk factors cannot be changed:

Getting older

Family history & inherited genes

Types of breast tissue

Ethnicity

While others can be changed:

1 in 4

breast cancers are thought to be preventable through lifestyle choices

- Maintaining a healthy weight
- Being physically active
- Not drinking much alcohol

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Breast cancer: Why we need to understand breast cancer risk (nihr.ac.uk)

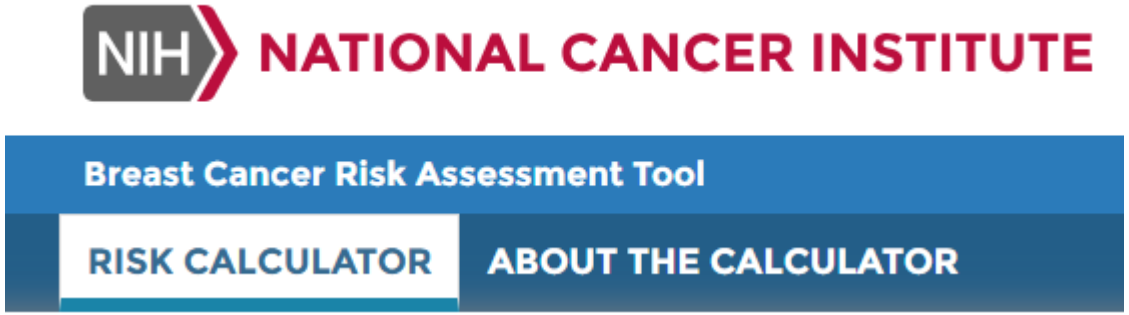
Factors that increase risk of invasive female breast cancer

Relative Risk	1.1 – 2.0	2.1 – 4.0	>4.0
Factors	• Alcohol consumption • Early age at menarche (<11 years) • Height (tall) • Late age at first full term pregnancy (>30 years) • Late age at menopause (≥55 years) • Never breastfed a child • No full-term pregnancies • One first-degree relative with breast cancer • Obesity (postmenopausal) • Personal history of endometrial or ovarian cancer • Physical inactivity • Proliferative breast cancer disease without atypia (usual ductal hyperplasia, fibroadenoma) • Recent and long-term use of menopausal hormone therapy containing estrogen and progestin • Recent hormonal contraceptive use • Type 2 diabetes • Weight gain in adulthood	• Ductal carcinoma in situ • High endogenous estrogen or testosterone levels (postmenopausal) • High-dose radiation to chest (e.g., Hodgkin lymphoma treatment) • Mammographically dense (26% or more) breasts • Personal history of breast cancer (40+ years) • Two or more first degree relatives with breast cancer	• Age (65+ versus <65 years, although risk increases across all ages until age 80) • Biopsy confirmed atypical hyperplasia • Certain inherited genetic mutations for breast cancer (i.e., *BRCA1, BRCA2, PALB2, TP53*) • Lobular neoplasia • Personal history of early onset (<40 years) breast cancer

Relative risk for some factors vary by breast cancer molecular subtype.

Are you HIGH risk? (NOT for BC patients)

aka **IBIS Model**



aka **Gail Model**

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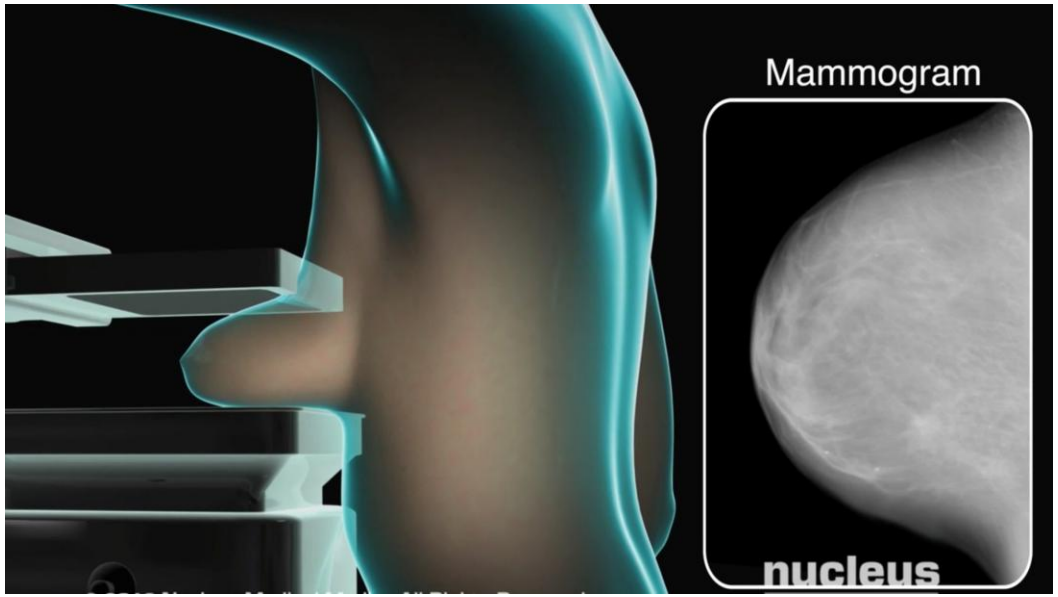
Breast Cancer Screening



Screening mammography can reduce breast cancer deaths by 40% or more in women aged 40 and older [1,3,70,71]. Women at higher-than-average risk should consider earlier and/or more intensive screening [7]. Women at higher-than-

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Google images 2021
Monticciolo et al, J Am Coll Radiol 2023

Screening Guidelines

April 30, 2024

The Task Force recommends that all women get screened for breast cancer every other year, starting at age 40 and continuing through age 74, to reduce their risk of dying from this disease. This is a **B grade**.

In this final recommendation statement, we are also urgently calling for more research that will allow us to build on our existing guidance and help all women live longer and healthier lives. Specifically, we need to know how best to address health disparities across screening and treatment experienced by Black, Hispanic, Latina, Asian, Pacific Islander, Native American, and Alaska Native women. We also need studies on what more should be done for women with dense breasts, and we need evidence on the benefits and harms of screening in older women. These are **I statements**.

Nearly half of all women have dense breasts, which increases their risk for breast cancer and means that mammograms may not work as well for them. Women are generally told that they have dense breasts after they've had a mammogram. These women deserve to know whether and how additional screening might help them stay healthy. Unfortunately, there is not yet enough evidence for the Task Force to recommend for or against additional screening with breast ultrasound or MRI. We are urgently calling for more research on whether and how additional screening might help women with dense breasts find cancers earlier.

It is important to note that all women, including those with dense breasts, should be screened starting at age 40. While we call for more research, these women should talk to their clinicians about their options for follow-up testing so that they can get the care that's right for them.

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https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening

Mammography Screening Guidelines in Average Risk Women

	Age (yrs) to Start Mammography	Age to Stop Mammography	Mammography Interval
ACR/SBI	40[a]	No age limit, tailor to individual health status	Annual
ACS	45, option to start at age 40	When life expectancy is < 10 years	Annual 45-54; Every 1 or 2 years 55+
ACOG	40	Age 75, then shared decision making	Every 1 or 2 years
AMA	40	Not Stated	Annual
ASBrS	40	When life expectancy is < 10 years	Annual
NCCN	40	Age 75, then shared decision making	Annual
USPSTF	40	74 years	Every 2 years

[a]Black, Hispanic, and Asian women have peak incidence of breast cancer in their 40s and should begin screening at least by age 40 [1, 2].

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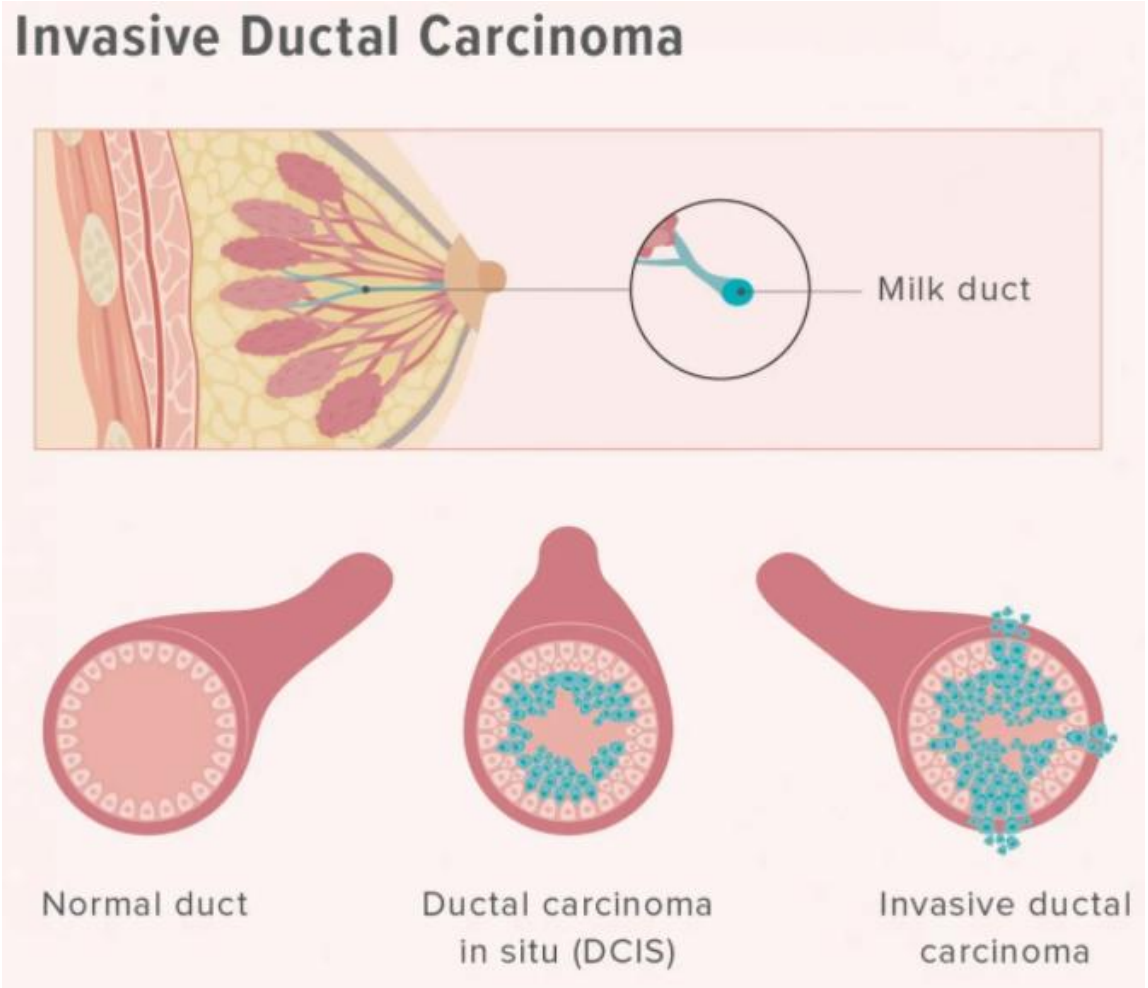
https://densebreast-info.org/for-providers/screening-guidelines-comparison/

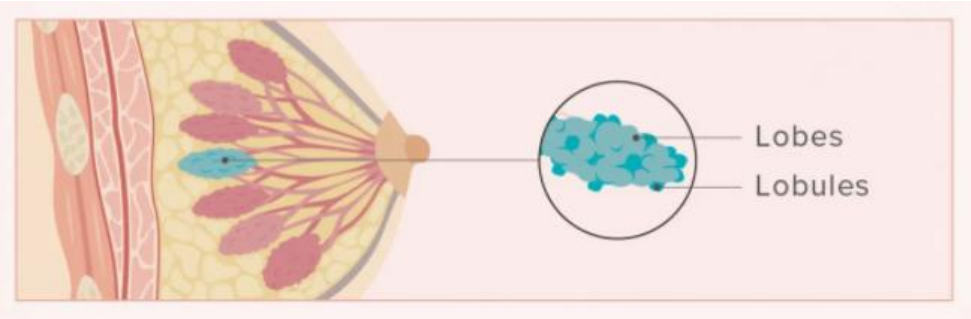
Classification

- Histologic type: ductal vs lobular
  - Grade

- Receptor type:
  - Hormone Positive (70-80%)
  - Her2 Positive (15-20%)
  - Triple Negative (10-15%)

- Stage:
  - I/II: limited to breast/armpit
  - III: big, skin, more lymph nodes
  - IV: outside breast and regional LNs





https://www.healthline.com/health/breast-cancer/invasive-breast-cancer#types

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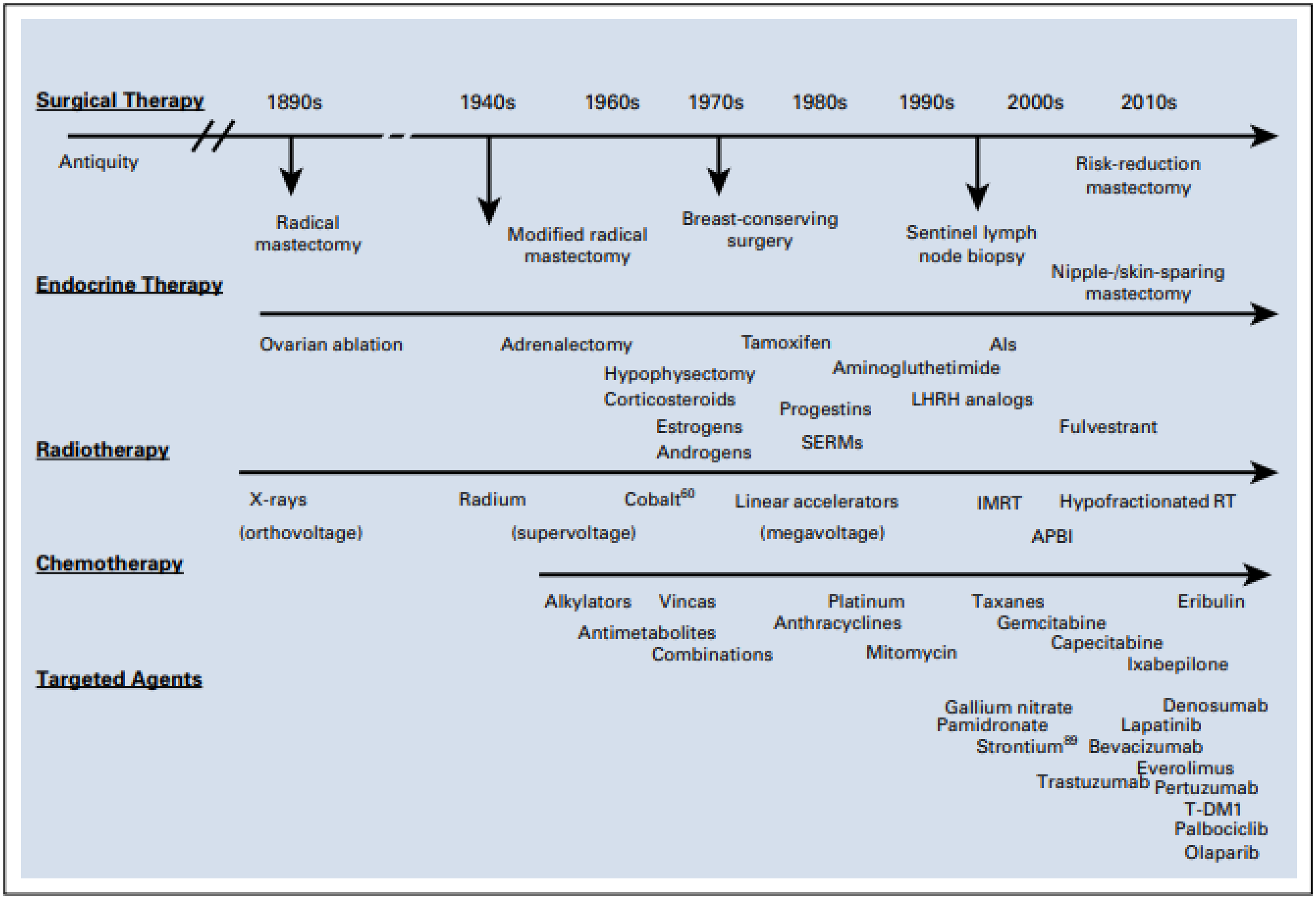


2020s

Neratinib
Tucatinib
T-DXd (Enhertu)
Sacituzumab govitecan (Trodelvy)
Ribo/Abemaciclib
Alpelisib
Capivasertib
Elacestrant/ Camizestrant
Pembrolizumab
Talazoparib
Inavolisib

Hortobagyi, JCO 2020

Breast Cancer Surveillance

National Comprehensive Cancer Network®

NCCN Guidelines Version 4.2025
Invasive Breast Cancer

NCCN Guidelines Index
Table of Contents
Discussion

SURVEILLANCE/FOLLOW-UP

Exam:
- History and physical exam 1–4 times per year as clinically appropriate for 5 years, then annually

Genetic screening:
- Periodic screening for changes in family history and genetic testing indications and referral to genetic counseling as indicated, see NCCN Guidelines for Genetic/Familial High-Risk Assessment: Breast, Ovarian, Pancreatic, and Prostate

Postsurgical management:
- Educate, monitor, and refer for lymphedema management, see NCCN Guidelines for Survivorship: Lymphedema

Breast imaging:
- Mammography every 12 months, beginning 6 months or more after completion of breast-conserving therapy (BCT)[ddd]
- Routine imaging of reconstructed breast is not indicated
- For patients with germline mutations or family history of breast cancer, please refer to NCCN Guidelines for Genetic/Familial High-Risk Assessment: Breast, Ovarian, Pancreatic, and Prostate

Fertility, birth control, and sexual health see BINV-C

Screening for metastases:
- In the absence of clinical signs and symptoms suggestive of recurrent disease, there is no indication for laboratory or imaging studies for metastases screening.

Post-treatment monitoring:
- Cardiotoxicity monitoring for patients who received left-sided radiation therapy, anthracyclines, or HER2-targeted therapy. For anthracycline-induced toxicity, see NCCN Guidelines for Survivorship
- Provide guidance on risk of comorbidities

Endocrine therapy:
- Assess and encourage adherence to adjuvant endocrine therapy
- Patients on tamoxifen:
  - Age-appropriate gynecologic screening
  - Routine annual pelvis ultrasound is not recommended
- Patients on an aromatase inhibitor or who experience ovarian failure secondary to treatment should have monitoring of bone health with a bone mineral density determination at baseline and periodically thereafter[eee]

Lifestyle:
- Evidence suggests that active lifestyle, healthy diet, limited alcohol intake, and achieving and maintaining an ideal body weight (20–25 body mass index [BMI]) may lead to optimal breast cancer outcomes. See NCCN Guidelines for Breast Cancer Risk Reduction.

Psychosocial support:
- Survivors are at elevated risk for fear of recurrence, distress, anxiety, and depression that may persist for many years after diagnosis. Periodic screening and referral to mental health professionals if needed are recommended. See NCCN Guidelines for Survivorship.

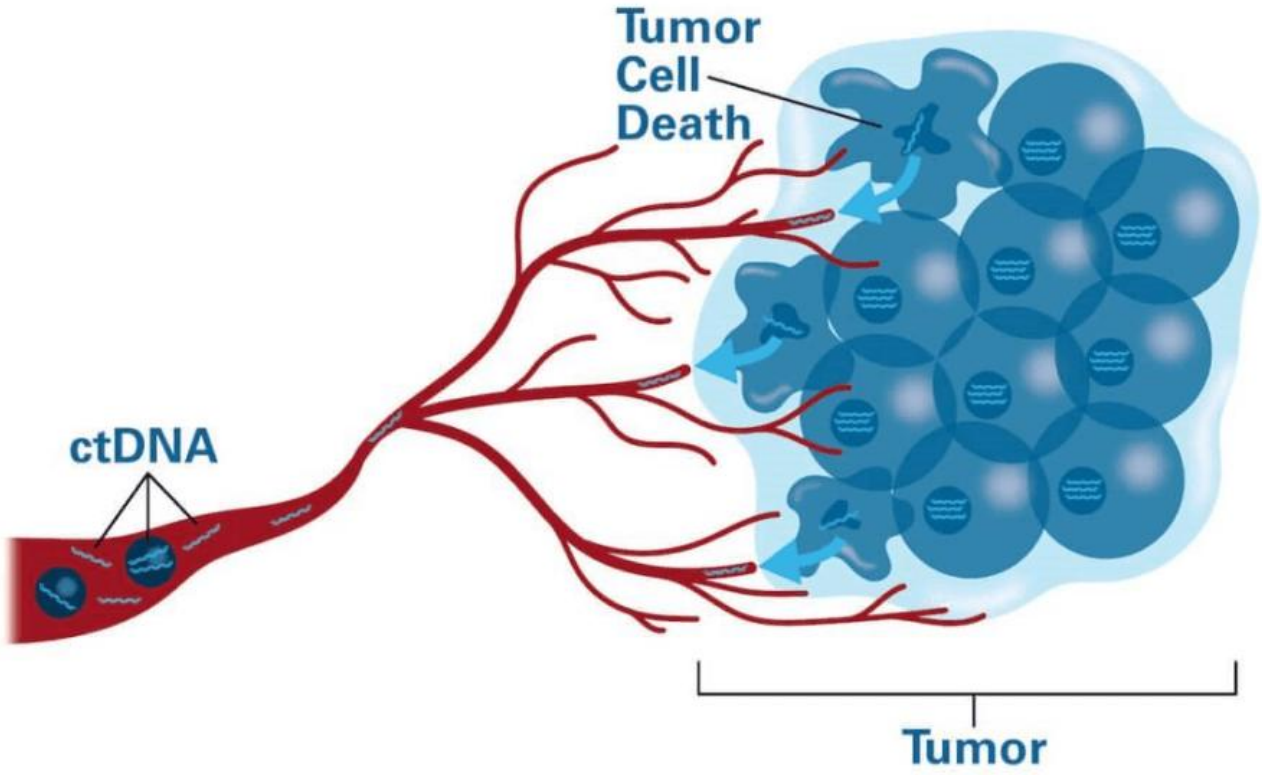
Communication:
- Coordination of care between the primary care physician (PCP) and specialists is encouraged. Additionally, a personalized survivorship treatment plan including personalized treatment summary of possible long-term toxicity and clear follow-up recommendations is recommended. See NCCN Guidelines for Survivorship

Engagement:
- Patients frequently require follow-up encouragement in order to improve adherence to ongoing screening and medication adherence. See NCCN Guidelines for Patients

→ Recurrent Disease (BINV-18)

https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf

The Future: Circulating Tumor DNA Assays?



Centers for Medicare & Medicaid Services approved coverage reimbursement for the **Signatera** assay for recurrence monitoring **in stage IIB to III breast cancers**, and Blue Shield of California provides coverage for the **RaDa**R assay for the monitoring of relapse or progression **of stage I to IV** cancers and for detection of actionable mutations.

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https://blog.dana-farber.org/insight/2023/06/what-is-ctdna-and-do-i-need-mine-tested/

Jim & Eleanor Randall Breast Center

ebcd
ENHANCED BREAST CANCER DETECTION
Powered by DeepHealth

Beverly Radiology Medical Group

RadNet
Leading Radiology Forward

EBCD
Enhanced Breast Cancer Detection

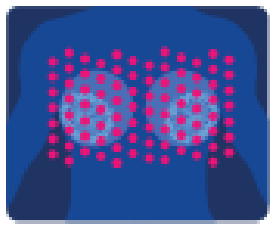
- Clinical protocol unique to Radnet
- FDA – registered and cleared for use with 3D Tomo Screening exams
- No additional time or additional radiation to the patient
- $40 out of pocket cost for enrollment of EBCD (not the AI powered CAD)
  - Radnet is actively seeking national insurance coverage so all patients can benefit.
    - Regal has just agreed to cover EBCD for all of their patients
  - Similar to the additional out of pocket cost when 3d tomo was first rolled out.

EBCD Process takes it one step further...

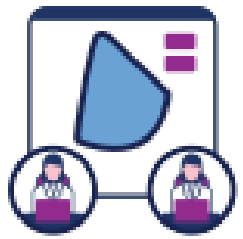
This is the EBCD Process for enrolled patients:

1. 

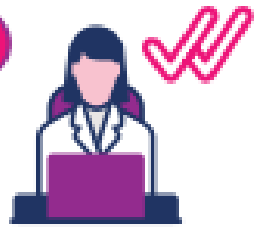
A radiologist reviews the mammogram using an FDA-cleared AI software tool that aids in cancer detection.

2. 

AI software is again used to review the initial assessment made by the radiologist.

3. 

If the AI makes an alternate conclusion than the radiologist, a second expert radiologist reviews the exam.

4. 

The result is finalized by the radiologist after all steps are completed.

EBCD Benefits

- “Multiple sets of eyes” on every single screening mammogram.
  - 3 mammo reader – first interpreting rad, AI, 2nd interpreting rad
  - Adds level of confidence in the result of the exam.
- Since its inception in January 2023
  - Over 1.5 Million patients have received AI evaluation
  - 500+ breast cancers detected through the EBCD additional review process
    - 23% more cancers detected in dense breast tissue
    - 21% increase in detection of breast cancer for all women
  - 21% reduction in recall rate
  - NPV 99.6% -99.86% compared to 95% without AI

Thank you!

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Breast Cancer Screening

These guidelines are for women at **average risk** for breast cancer. For screening purposes, a woman is considered to be at average risk if she doesn't have a personal history of breast cancer, a strong family history of breast cancer, or a genetic mutation known to increase risk of breast cancer (such as in a *BRCA* gene), and has not had chest radiation therapy before the age of 30. (See below for guidelines for women at high risk.)

- **Women between 40 and 44** have the option to start screening with a mammogram every year.
- **Women 45 to 54** should get mammograms every year.
- **Women 55 and older** can switch to a mammogram every other year, or they can choose to continue yearly mammograms. Screening should continue as long as a woman is in good health and is expected to live at least 10 more years.
- **All women** should understand what to expect when getting a mammogram for breast cancer screening – what the test can and cannot do.

Clinical breast exams (physical exams done by a health professional) are not recommended for breast cancer screening among average-risk women at any age.

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ACS Breast Cancer Screening Guidelines | American Cancer Society

Breast Cancer Screening

Women who are at **high risk** for breast cancer based on certain factors should get a breast MRI and a mammogram every year, typically starting at age 30. This includes women who:

- Have a lifetime risk of breast cancer of about 20% to 25% or greater, according to risk assessment tools that are based mainly on family history (see below)
- Have a known *BRCA1* or *BRCA2* gene mutation (based on having had genetic testing)
- Have a first-degree relative (parent, brother, sister, or child) with a *BRCA1* or *BRCA2* gene mutation, and have not had genetic testing themselves
- Had radiation therapy to the chest before they were 30 years old
- Have Li-Fraumeni syndrome, Cowden syndrome, or Bannayan-Riley-Ruvalcaba syndrome, or have first-degree relatives with one of these syndromes

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