

THE FULL SCOOP

The Full Scoop Healthcare Team Risk Assessment

Use this information as a helpful guide to support informed and shared decision-making beyond risk-model predictions.

Risk

High Risk Factors: Strong, well-established associations with substantial risk increases (RR/OR ≥ 3.0 or lifetime risk $> 30\%$)

Gender	☐	Being biologically female is the strongest risk factor, with an average lifetime risk of $\sim 13\%$. This risk is increasing by about 1% globally each year. (2)
Some Genetic Mutation factors	☐	Mutations in BRCA1, BRCA2, PALB2, and other genes, along with polygenic risk scores, significantly affect breast cancer risk. (6)
Breast Density	☐	Women with dense breast tissue have a significantly higher risk of breast cancer, estimated at 1.4 to 6 times that of women with low breast density. (19,20)
Prior biopsy	☐	Previous biopsies, especially those showing atypical hyperplasia or lobular carcinoma in situ (LCIS), raise risk. (21)

Moderate Risk Factors: Well-established associations with moderate risk increases (RR/OR 1.5-3.0)

Alcohol	☐	Alcohol is a known carcinogen. Even low levels can increase breast cancer risk. (24)
Age	☐	Most breast cancers occur in women over age 50, but those with high-risk factors may begin screening earlier, sometimes in their 20s. (1)
Age at 1 st birth	☐	Breast cancer risk increases by 3% for each year older a woman is when she first gives birth. (9)
Age at menarche, 1 st birth	☐	Starting your period before age 12 is linked to a modestly higher breast cancer risk, due to longer lifetime exposure to estrogen. (10)

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		A collaborative meta-analysis of nearly 120,000 women found a 5%–9% increase in risk per year younger at menarche. (11)
BMI	☐	A high BMI postmenopause is an increased risk factor. (25)
Family history 1 st degree	☐	A first-degree relative (parent, sibling, child) with breast, ovarian, prostate (especially aggressive), or colon cancer increases your risk. (4)
Family history 2 nd degree	☐	Second-degree relatives (grandparents, aunts/uncles) can also contribute, especially when multiple family members are affected. (5)
Hormonal Contraceptives	☐	Using hormonal contraceptives slightly increases breast cancer risk while in use; however, risk returns to baseline about 10 years after stopping. (13)
HRT	☐	The WHI study showed a possible link between combined estrogen and medroxyprogesterone acetate (MPA) use and increased breast cancer risk, but its findings may not apply to all women. While the risk may be real for some, newer evidence suggests it could be lower or even absent for others, depending on timing, type, and duration of use. (14,15,16,17)
Menopause	☐	Late menopause (after ~55) increases risk due to prolonged hormone exposure. (18)
Nulliparity	☐	Increase risk with nulliparity (12)
Physical inactivity	☐	Sedentary behavior increases risk via estrogen metabolism, inflammatory markers, and insulin resistance. (29)
Race/ethnicity	☐	Black women under age 40 have higher rates of aggressive breast cancers. (7) Ashkenazi Jewish ancestry carries a higher prevalence of BRCA mutations. (8)

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Lower Risk Factors: Established but modest associations (RR/OR 1.1-1.5)

BMI	☐	A low BMI in premenopause (25)
DES	☐	Diethylstilbestrol maternal use during pregnancy and in-utero exposure (35)
Diabetes	☐	Type 2 diabetes and insulin resistance are associated with increased breast cancer risk. (22)
Height	☐	Cancer incidence increases with increasing adult (~16% per 10 cm of height) (3)
Poor nutrition	☐	Diets high in processed foods and saturated fats are linked to increased risk through inflammation and weight gain. (30)
Occupation	☐	Night shift work (26)
Radiation	☐	Medical or environmental radiation exposure, especially during childhood or adolescence, increases long-term risk. (34)
Smoking	☐	Tobacco use increases breast cancer risk by promoting DNA damage and inflammation. (31)

Emerging Risk Factors: Suggestive evidence but inconsistent or limited data

Chemicals	☐	Some endocrine-disrupting chemicals may be linked to increased breast cancer risk, particularly when exposure happens during vulnerable life stages and when the chemicals mimic estrogen or interfere with hormonal signaling. (32)
Pollutants	☐	Exposure to some air pollutants have been linked to increased breast cancer risk through mechanisms like systemic inflammation, oxidative stress, and hormone disruption. (33)
Occupation	☐	Occupational exposure to chemicals (organic solvents (27), petroleum, etc. is associated with a higher risk (28).
Thyroid	☐	Some studies link thyroid dysfunction (particularly hypothyroidism or autoimmune thyroiditis) with breast cancer risk, though evidence is still evolving. (23)

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Protective Factors: Risk Reduction

Breastfeeding	☐	Breastfeeding offers protective benefits: about a 4.3% reduction in risk for each 12 months breastfed, plus an additional 7% reduction per child. (12)
Healthy diet patterns	☐	Modest protective effects
Menopause	☐	Early menopause (before ~45) is linked to a lower risk
Physical inactivity	☐	Physical activity reduces postmenopausal breast cancer risk. (29)

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⚠ This categorization is intended as a clinical discussion guide only and should not replace individualized risk assessment

Shared Decision-Making Resource

Some of the risk factors included in this resource are not currently part of standard clinical risk assessment models or formal screening guidelines but are supported by evidence-based research. They are presented to support clinical awareness, guide more personalized risk discussions, and inform shared decision-making. This resource may also be helpful for patients who seek a more detailed understanding of their potential risk factors, particularly when such risks may be cumulative or interact with other known factors.

Population-Based Risk Estimates

- Risk factors shown are based on **population-level studies** and may not apply to individual patients
- Individual risk is **highly complex** and depends on the interaction of multiple factors
- **Absolute risk** varies significantly based on baseline population characteristics, age, and risk factor combinations

Clinical Use Guidelines

- Use this framework to **initiate conversations** about breast cancer risk factors with patients
- Always consider **individual patient context**, family history details, and personal medical history
- Recommend **formal risk assessment tools** (Tyrer-Cuzick, etc.) for quantitative risk estimation, but keep in mind that these are population-based tools and have limitations.
- Consider **genetic counseling** for patients with concerns about family history or multiple risk factors

Evidence Limitations

- Risk estimates derived from **observational studies** with inherent limitations
- **Confidence intervals** around risk estimates can be wide
- The risk factors may have **population-specific effects** (race, ethnicity, geography)
- **Emerging evidence** may modify these risk estimates over time

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Risk Categorization Framework

Note: The following categorization represents a synthesis of published literature and commonly used epidemiological interpretations, not original research findings.

Based on a review of available literature, risk factors have been grouped as follows:

- **High Risk:** Factors showing relative risks ≥ 3.0 or lifetime risks $>30\%$ in published studies
- **Moderate Risk:** Factors with RR 1.5-3.0 and consistent evidence across multiple studies
- **Lower Risk:** Factors with RR 1.1-1.5 with established evidence in the literature
- **Emerging:** Factors with suggestive but inconsistent evidence

Recent 2024 systematic reviews confirm that breast cancer risk factors vary significantly in their evidence quality and risk magnitude.

This literature-based categorization is compiled from published studies and provides a framework for clinical discussion but should always be supplemented with individualized risk assessment tools, validated risk calculators, and clinical judgment.