

# Case Study: Breast Cancer Treatment



## Overview - Understanding Breast Cancer

Breast cancer is the most frequently diagnosed cancer among women worldwide and a leading cause of cancer-related deaths. It occurs when cells in the breast grow uncontrollably, forming a tumor that may spread to surrounding tissues or distant parts of the body. While it affects both women and men, it is far more common in women.

The burden of breast cancer is growing globally, with over 2 million new cases reported each year. However, advances in detection, diagnosis and treatment have significantly improved survival rates—particularly when the disease is identified early.

Public awareness, routine screening (such as mammograms) and improved access to care play a critical role in reducing mortality and improving outcomes.

## Breast Cancer Incidence by Region

- Asia accounts for the highest number of cases due to its population size, not necessarily higher rates per 100,000 women.
- Europe and North America have higher incidence rates, but also better survival outcomes due to early detection.
- Sub-Saharan Africa and parts of MEA face significant challenges in early diagnosis and treatment access.

Table 1: Global Breast Cancer Incidence by Region (GLOBOCAN 2020)

Region	Estimated New Cases (2020)	% of Global Cases
Asia	911,014	41.20%
Europe	576,300	26.10%
North America	264,121	11.90%
Latin America & Caribbean	210,100	9.50%
Middle East & Africa	127,190	5.70%
Sub-Saharan Africa	99,878	4.50%

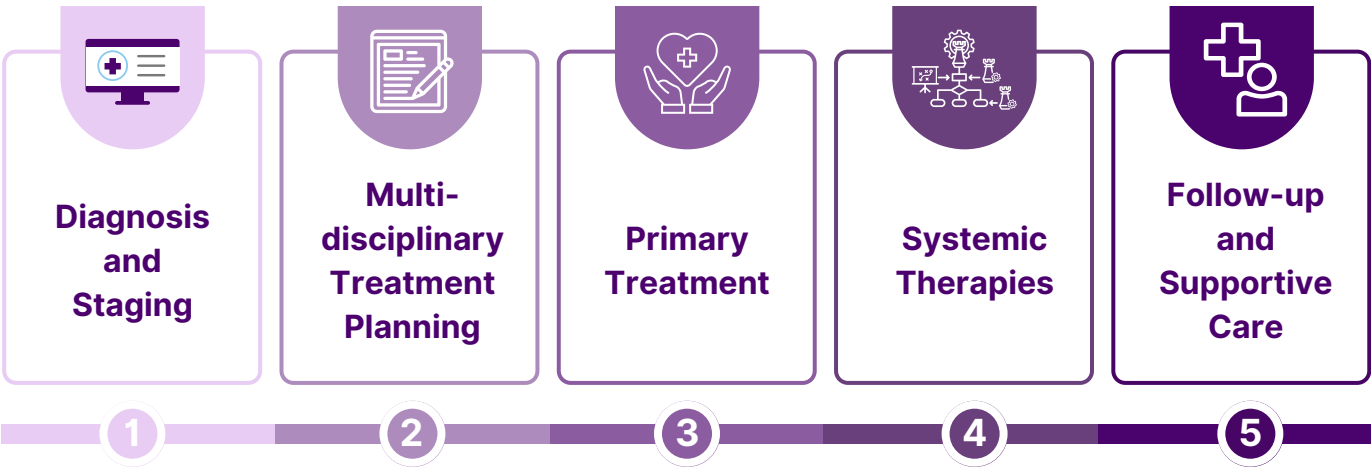
\*\*The GLOBOCAN 2020 database, published by the International Agency for Research on Cancer (IARC) under the World Health Organization (WHO).

**Note:** The GLOBOCAN updates occur every 4–5 years, GLOBOCAN 2020 remains the latest full global dataset. The next comprehensive release is expected in late 2025. However, regional cancer registries and country-specific organizations (e.g., SEER in the U.S., Cancer Research UK, National Cancer Center Japan) provide annual updates. These are not globally standardized but confirm the same patterns as GLOBOCAN 2020.

## Steps of Breast Cancer Treatment

Breast cancer treatment is tailored to each patient based on cancer stage, tumor characteristics, hormone receptor status, HER2 status and the patient’s overall health and preferences. Thus, each patient’s journey is unique. Some may start with chemotherapy (neoadjuvant) if tumors are large or locally advanced. While others may only need surgery and hormone therapy if the cancer is detected very early.

A structured outline of the typical treatment pathway is broken down into key steps from diagnosis to post-treatment care.



## 1. Diagnosis and Staging

- Clinical Evaluation: Physical breast exam by a doctor.
- Imaging Tests: Mammogram, ultrasound, MRI.
- Biopsy: Core needle or surgical biopsy to confirm cancer.
- Pathology Report: Identifies cancer type (ductal, lobular), grade, hormone receptor status (ER/PR), and HER2 status.
- Staging Workup: Determines how far the cancer has spread (Stage 0 to IV) using scans like CT, PET, or bone scan.

## 2. Multidisciplinary Treatment Planning

- A team of specialists (oncologist, surgeon, radiologist, pathologist, radiation oncologist) creates a personalized treatment plan.
- Decisions depend on:
  - Tumor size and location
  - Lymph node involvement
  - Molecular subtype (e.g., hormone-positive, HER2-positive, triple-negative)

## 3. Primary Treatment

### A. Surgery

- Lumpectomy: Removes the tumor and a margin of healthy tissue.
- Mastectomy: Removes the entire breast (sometimes both for high-risk patients).
- Sentinel Node Biopsy or Axillary Dissection: Checks if cancer has spread to lymph nodes.

### B. Radiation Therapy

- Often follows surgery, especially after lumpectomy.
- Targets residual cancer cells to prevent local recurrence.
- Typically lasts 3–6 weeks, depending on the protocol.

## 4. Systemic Therapies

These are used before or after surgery (neoadjuvant or adjuvant).

### A. Chemotherapy

- Common for aggressive cancers or if lymph nodes are involved.
- Administered in cycles (e.g., every 2 or 3 weeks over several months).

### B. Hormonal Therapy

- For hormone receptor-positive cancers (ER+/PR+).
- Medications include: Tamoxifen (premenopausal women) or Aromatase inhibitors (postmenopausal women)
- Taken daily for 5–10 years.

### C. Targeted Therapy

- Used for HER2-positive cancers.
- Drugs like Trastuzumab (Herceptin) and Pertuzumab block HER2 receptors.

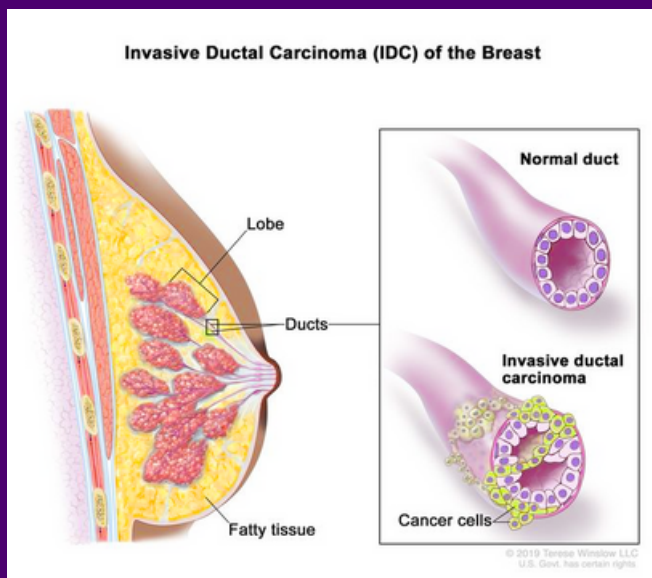
### D. Immunotherapy

- Mainly for triple-negative breast cancer (TNBC) in combination with chemotherapy.
- Drugs like Atezolizumab or Pembrolizumab (in selected patients).

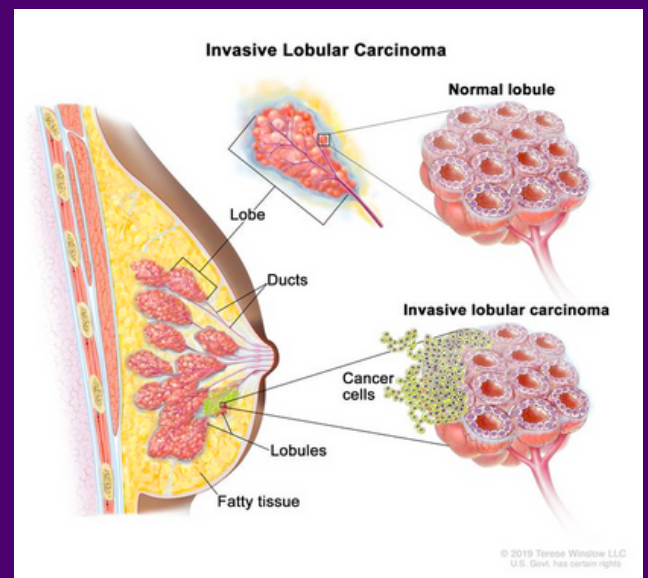
## 5. Follow-up and Supportive Care

- Surveillance: Regular exams and imaging every 3–12 months.
- Side Effect Management: Addressing fatigue, lymphedema, neuropathy, etc.
- Psychosocial Support: Counseling, support groups, survivorship programs.
- Lifestyle Recommendations: Nutrition, physical activity, stress management.

## Types of Breast Cancer



**Figure 1**



**Figure 2**

**Fig. 1:** Invasive ductal carcinoma (IDC) of the breast begins in the lining of a breast duct (milk duct) and spreads outside the duct to other tissues in the breast. It can also spread through the blood and lymph system to other parts of the body. IDC is the most common type of invasive breast cancer.

**Fig. 2:** Invasive lobular carcinoma begins in the lobules (milk glands) of the breast and spreads outside the lobules to other tissues in the breast. It can also spread through the blood and lymph systems to other parts of the body.

## How Patients Are Impacted by Breast Cancer?

### 1. Physical Impact

#### A. Side Effects of Treatment

- Surgery: Pain, scarring, reduced mobility (especially after lymph node dissection)
- Radiation Therapy: Fatigue, skin changes, breast swelling
- Chemotherapy: Hair loss, nausea, weakened immunity, neuropathy
- Hormonal Therapy: Hot flashes, joint pain, bone thinning

#### B. Long-term Physical Changes

- Lymphedema (arm swelling due to lymph node removal)
- Early menopause (induced by chemo or hormone therapy)
- Body image issues following mastectomy or reconstructive surgery

## 2. Emotional and Psychological Impact

### A. Mental Health Challenges

- Anxiety and depression are common, especially at diagnosis and during treatment.
- Fear of recurrence persists even after remission.

### B. Identity and Self-Esteem

- Changes in appearance (hair loss, breast surgery) can affect body image and confidence.
- Feelings of loss, grief, or altered femininity may arise.

### C. Social Isolation

- Some patients withdraw due to fatigue, emotional stress, or feeling misunderstood.
- Support systems are crucial but not always available.

## 3. Financial Impact

### A. Cost of Care

- Even with insurance, patients may face high out-of-pocket expenses for surgery, medications, imaging, and follow-up care.
- Costs of transportation, wigs, prostheses, or reconstructive surgery can add up.

### B. Employment Disruption

- Many patients take extended time off work or reduce hours, leading to income loss.
- Job insecurity and fear of discrimination can add to stress.

**Table 2: Average Estimated Cost (First Year of Treatment – according to US treatment)**

Treatment Component	Estimated Cost (USD)
Surgery	\$15,000–\$25,000
Chemotherapy (6 months)	\$20,000–\$60,000
Radiation Therapy (6 weeks)	\$10,000–\$20,000
Hormonal Therapy (per year)	\$1,200–\$5,000
Total (1st Year Estimate)	\$50,000–\$100,000+

*Source: American Cancer Society, 2023 estimates*

## 4. Social and Family Impact

- Family dynamics often shift — patients may need caregiving support or feel guilty about burdening loved ones.
- Intimacy and relationships can be affected by body image changes and hormonal side effects.
- Parenting stress is significant, particularly for mothers managing care while raising children.

## 5. Lifestyle and Daily Functioning

- Fatigue and physical limitations may reduce a patient's ability to engage in normal activities.
- Dietary adjustments, exercise routines, and avoiding infection become part of daily life.
- Some patients become long-term survivors managing chronic side effects.

## 6. Positive Outcomes for Some Patients

Despite the challenges, many patients experience personal growth:

- Stronger relationships and support networks
- Advocacy roles in raising awareness
- Increased health consciousness and lifestyle changes
- Emotional resilience and a new perspective on life

## Breast Cancer Prevention

While not all breast cancer cases can be prevented, there is strong evidence that lifestyle choices, early screening and risk management can significantly reduce the chances of developing the disease. We have the knowledge and tools to reduce the risk for millions of women and men worldwide. Prevention goes beyond individual effort—it includes public health strategy, policy-making and community-level education. When prevention becomes part of everyday choices and national healthcare strategies, we move closer to a world where fewer lives are lost to breast cancer.

## Understanding Prevention vs. Early Detection

### **Prevention:**

Actions taken to reduce the likelihood of developing breast cancer.

### **Early Detection:**

Strategies used to identify breast cancer as early as possible, improving treatment outcomes. Though not technically prevention, early detection significantly lowers mortality.





### Primary Prevention

Focused on reducing the risk before cancer develops through lifestyle and environmental changes.

### Secondary Prevention

Emphasizes early screening and intervention to catch the disease in its earliest, most treatable stage.

### Tertiary Prevention

Aimed at preventing recurrence and managing long-term side effects for those already diagnosed.

## Key Risk Factors to Address

### Lifestyle-related risk factors:

#### 1. Obesity or Being Overweight

Especially after menopause, excess body fat increases estrogen levels, raising the risk.

#### 2. Physical Inactivity

Regular physical activity reduces risk by regulating hormones and supporting immune health.

#### 3. Alcohol Consumption

Even moderate drinking increases estrogen and other hormone levels linked to breast cancer.

#### 4. Smoking

Tobacco is a known carcinogen and increases risk, particularly in younger women.

#### 5. Poor Diet

Diets high in processed foods, red meat, and sugar contribute to inflammation and hormonal imbalances.

## Hormonal and Reproductive Factors:

- Late pregnancy (after age 35) or no full-term pregnancies
- Not breastfeeding
- Early menstruation (before age 12) and late menopause (after age 55)
- Long-term use of hormone replacement therapy (HRT)

## Genetic & Family History (Non-Modifiable but Monitorable):

- BRCA1 and BRCA2 gene mutations
- Strong family history of breast or ovarian cancer
- Personal history of breast lesions or previous breast cancer

## Breast Cancer Awareness

Breast cancer awareness is not only about understanding the disease—it's about empowering people with knowledge, promoting early detection and reducing stigma.

Over the past two decades, global efforts have dramatically expanded public education, support systems and community-level intervention strategies. Breast cancer awareness is no longer limited to one month of campaigns. It's a year-round necessity—especially in countries with limited health infrastructure.

## Why Breast Cancer Awareness Matters

### 1. Early Detection Saves Lives

Breast cancer has a much higher survival rate when caught early. Awareness leads to:

- Increased rates of self-examinations
- More frequent clinical screenings
- Earlier diagnosis, which allows for more effective treatment

### 2. Reduces Stigma

- In many regions, especially in low- and middle-income countries, cultural taboos discourage women from seeking help.



- Awareness campaigns play a vital role in normalizing conversations around breast health.

### 3. Promotes Access to Resources

Helps women and families understand available:

- Screening services
- Treatment options
- Support groups and survivorship networks

## Global Breast Cancer Awareness Campaigns

### 1. Breast Cancer Awareness Month (October – Global)

Launched: 1985

Purpose: Promote mammography, early detection, and raise funds for research

Key Features:

- Cities and landmarks around the world are lit in pink
- Widespread media coverage and social media campaigns using hashtags like #BreastCancerAwareness, #ThinkPink, #PinkOctober
- Community runs, fundraisers and hospital outreach programs
- Participating Countries: USA, UK, India, Australia, Brazil, and many more

### 2. Think Pink (Europe & Middle East)

Launched: 2007

Headquarters: Belgium

Support for patients and survivors through:

- Financial help for screenings
- Post-operative care programs
- Awareness events across Europe, with local ambassadors

### 3. Pink Ribbon Campaign (International)

Origin: USA (early 1990s)

Global Reach: Symbol now recognized worldwide

Mission:

- Raise funds for research
- Spread awareness in partnership with governments and NGOs
- Encourage businesses and brands to participate through CSR activities

#### **4. The Pink Drive (South Africa)**

Type: Non-profit

Unique Initiative:

- Mobile mammography units for rural and underserved communities
- Offers clinical breast exams, education talks, and cancer counseling

#### **5. India's 'Usha Silai Schools' & Local NGO Collaborations**

Partners: Usha International, local NGOs

Focus:

- Training women in rural India to act as peer educators
- Awareness through community tailoring centers
- Promotes low-cost screening in partnership with district hospitals

#### **6. Avon Breast Cancer Promise (Global)**

NGO Arm of Avon Foundation

Reach: Latin America, UK, Asia

- Focuses on access to care and early detection
- Conducts thousands of clinical checkups and screenings in low-income regions

#### **7. WHO Global Breast Cancer Initiative (GBCI)**

Launched: 2021

To reduce global breast cancer mortality by 2.5% annually until 2040 through:

- Health promotion
- Early detection
- Timely diagnosis and treatment

#### **8. UICC – Prevention is Better Than Cure (Global)**

Union for International Cancer Control promotes:

- Tobacco control
- Diet and physical activity programs
- Policy advocacy in LMICs (Low and Middle-Income Countries)

#### **9. PHC Integration Models in Africa & Asia**

Community health workers are trained to:

- Educate women about risk factors
- Provide basic clinical screening
- Refer high-risk patients for follow-up care

# Breast Cancer Fighters

*"Cancer tried to break me, but I found strength I didn't know I had."* – Sarah Miles

Sarah, a marketing executive and mother of two, faced an aggressive form of breast cancer. Though the treatment was intense—chemotherapy, radiation and a double mastectomy—she leaned on the support of her family and a local survivor group. Sarah documented her journey on social media, turning her experience into a voice for others battling the same disease.

Today, Sarah is in re-mission and leads a virtual support group called "**Warrior Women UK**" helping hundreds of women find hope and healing.

Diagnosis: Triple-Negative Breast Cancer  
Age at Diagnosis: 38  
Year Diagnosed: 2019

Sarah Miles (United Kingdom)

*"Early detection saved my life. I now teach others what I wish I had known sooner."* – Renu Joshi

Renu, a school teacher from Jaipur, felt a lump during a self-exam—a habit she had recently developed after attending a local awareness workshop. Despite the fear and uncertainty, she sought immediate medical advice, leading to early detection resulting in full recovery after surgery and chemotherapy sessions.

She volunteers during Breast Cancer Awareness Month and regularly participates in community health events across Rajasthan, educating young girls and women about the importance of breast health.

Diagnosis: Triple-Negative Breast Cancer  
Age at Diagnosis: 38  
Year Diagnosed: 2019

Renu Joshi – India

If this case study sparked ideas—or raised new questions—we'd love to hear from you. Reach out to us at [info@fyreignismarketresearch.com](mailto:info@fyreignismarketresearch.com).

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