

Breast Cancer Prediction System

An AI-powered tool to help detect breast cancer early and save women's lives

by Zoya Aasif Shaikh, Ruchika Kumbhar, and Rucha Surendra Patil
student of TYBCA



Introduction to Breast Cancer

Understanding Breast Cancer

Breast cancer is a disease where abnormal cells grow in breast tissue. It affects millions of women worldwide and is a leading cause of death among women.



The Problem

Early detection is crucial for successful treatment, but many cases are discovered too late when treatment becomes difficult.



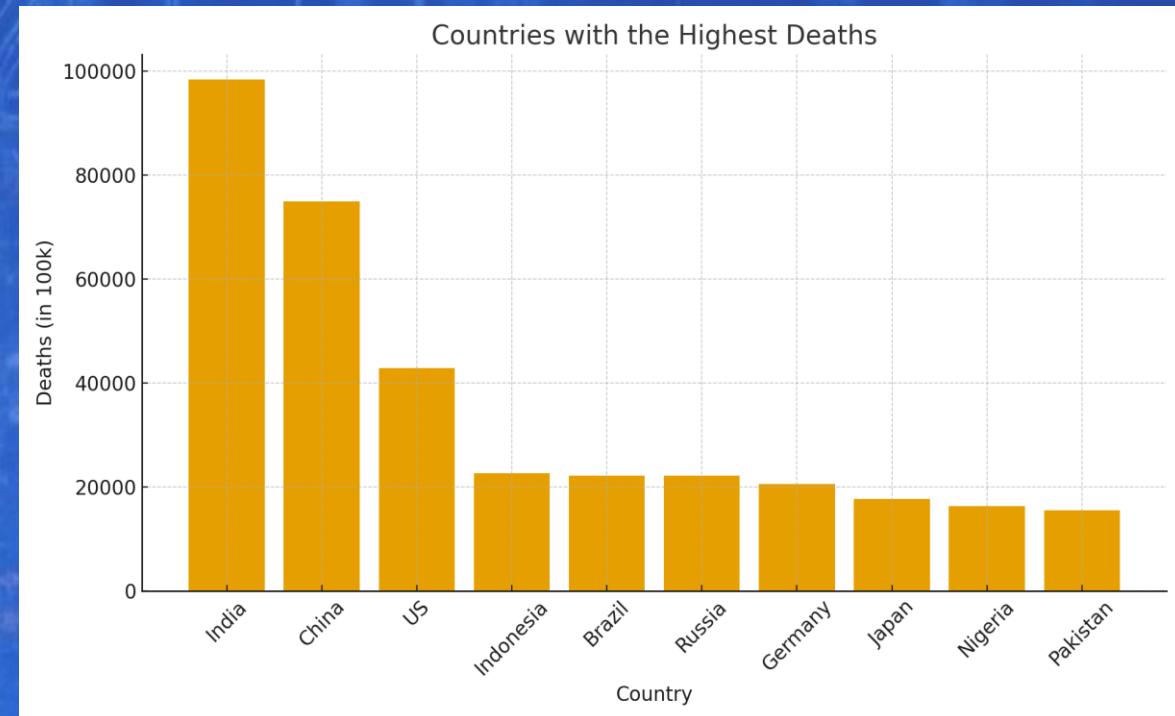
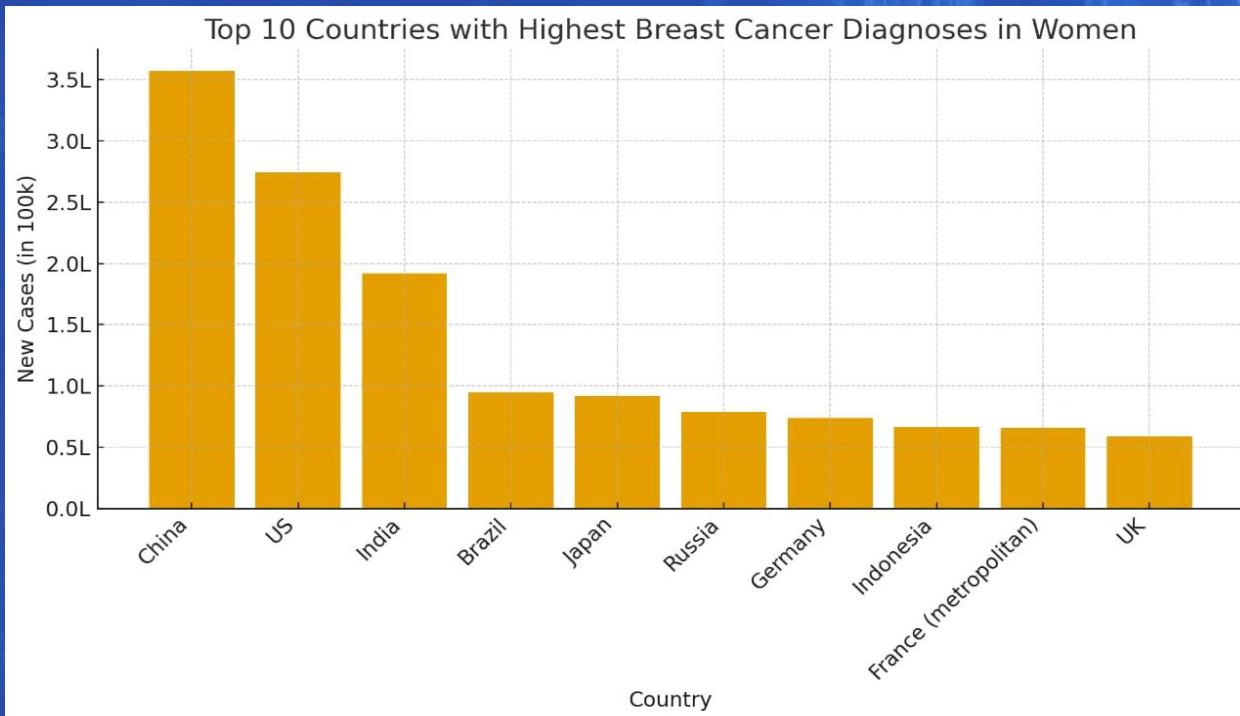
The Solution

Regular screening and early detection can save lives by finding cancer before symptoms appear.



Technology Help

AI and machine learning can help doctors detect cancer more accurately and quickly.



- India ranks **3rd** globally in new breast cancer diagnoses, reporting **1,92,020** cases in the last two years.
- India stands at the top position in breast cancer-related deaths, with over **95,000** women lost during the same period



Project Introduction

About Our System

Our Breast Cancer Prediction System uses artificial intelligence to analyze medical data and predict the likelihood of breast cancer. It helps doctors make faster and more accurate diagnoses.



AI Technology

Uses machine learning algorithms to learn from thousands of medical cases and identify patterns.



High Accuracy

Provides reliable predictions to support doctors in making informed decisions about patient care.



Need of This Project

Benefits of Early Detection

Finding cancer early means better chances of survival, less aggressive treatment, and lower medical costs for patients and families.

Saving Time

Faster diagnosis means patients can start treatment sooner, which is critical for successful outcomes.



Helping Doctors

Doctors can make better decisions with AI support, reducing human error and improving diagnostic accuracy.

Global Impact

This system can help in areas with fewer medical specialists, bringing quality healthcare to more women worldwide.

Feasibility Study

HealthCare

Home About Prediction Prevention Help & Tips Reports

Your Health Matters

Early detection saves lives. Learn about breast cancer awareness, prevention, and take a simple self-assessment test with our friendly guide.

Start Test →

Hi! How can I help you?

ChatBot

HealthCare

Home About Prediction Prevention Help & Tips Reports

Health Assessment

Simple questions about your health

This assessment takes about 5 minutes and asks simple, easy-to-answer questions.

1. How old are you?
21

2. Have you felt any lumps in your breasts?
No Yes

3. Do you experience any breast pain or discomfort?
No Low Medium High

4. Does anyone in your family have a history of breast cancer?
No Yes

5. Have you noticed any changes in breast texture or skin?
No Yes

6. Have you noticed any lumps? If yes, how big (in cm)?
3
Don't know the exact size? That's okay - just give your best guess or leave blank.

Check Result →

Important: This assessment is for informational purposes only. It is not a medical diagnosis. Please consult with a healthcare provider for proper medical evaluation.

HealthCare

Home About Prediction Prevention Help & Tips Reports

Your Assessment Result

Here's what your answers tell us:

Higher Risk

Your assessment indicates several factors that need professional attention. Please see a doctor as soon as possible.

Your Assessment Summary

Age	Lumps Felt
21 years	Yes
Family History	Texture Changes
No	Yes

What Should You Do Next?

- 1 Schedule an urgent appointment with your doctor or gynecologist
- 2 Bring this assessment and any medical records with you
- 3 Be prepared to discuss all symptoms in detail
- 4 Your doctor may recommend imaging tests like mammogram or ultrasound
- 5 Follow your doctor's recommendations carefully

Important Disclaimer

This assessment is for informational purposes only and is not a medical diagnosis. Your results should

HealthCare

Home About Prediction Prevention Help & Tips Reports

Prevention & Healthy Living

Simple everyday habits that can help reduce your risk and support your overall health.

Regular Exercise
Aim for at least 30 minutes of exercise most days of the week. This can be walking, dancing, swimming, or any activity you enjoy. Exercise helps maintain healthy weight and reduces breast cancer risk.

Healthy Eating
Eat plenty of vegetables, fruits, whole grains, and lean proteins. Limit red meat and processed foods. A healthy diet supports overall wellness and reduces health risks.

Maintain Healthy Weight
Keep a healthy weight through balanced diet and exercise. Extra weight, especially after menopause, increases breast cancer risk. Talk to your doctor about a healthy weight for you.

Hi! How can I help you?

ChatBot

hi

ChatBot

Hello! How can I assist you today?

I think I have breast cancer what should I do now

ChatBot

I'm sorry to hear that you're feeling this way. It's important to consult with a healthcare professional as soon as possible. They can provide a proper evaluation and guide you through the necessary steps, which may include a clinical breast exam, imaging tests like a mammogram or ultrasound, and possibly a biopsy if needed. Early detection and professional guidance are crucial. Take care and stay positive!

Message...

HealthCare

Home About Prediction Prevention Help & Tips Reports

Help & Resources

Support, information, and answers to common questions about breast cancer awareness.

Helpful Resources & Support

National Breast Cancer Hotline
1-800-4-CANCER (1-800-422-6237)
Free information and support 24/7

Breast Cancer.org
Website: www.breastcancer.org
Comprehensive information and community support

Susan G. Komen
Phone: 1-877-4-KOMEN (1-877-465-6636)
Research, education, and community programs

HealthCare

Home About Prediction Prevention Help & Tips Reports

Understanding Breast Cancer

Simple, easy-to-understand information about breast cancer that every woman should know.

Breast cancer is when cells in the breast grow in an abnormal way. While it sounds scary, catching it early gives you many more treatment options and much better chances of successful recovery. That's why knowing the basics is so important!

The good news? You have the power to take care of your health. By doing simple monthly self-checks and visiting your doctor regularly, you can catch any problems early.

What is Breast Cancer?
Breast cancer is when cells in the breast grow abnormally. Regular checks help catch it early when treatment is most effective.

Who Can Get It?
Breast cancer can affect women of any age. Most cases happen after age 50, but younger women should also stay aware and do self-checks.

Early Detection Matters
Finding breast cancer in early stages means better treatment options and higher survival rates. Monthly self-exams are simple and important.

When to See a Doctor
Visit your doctor if you notice lumps, pain, discharge, or skin changes. Regular mammograms after age 40 are also recommended.

Data Dictionary

Our system uses medical data from breast cancer screenings to make predictions.

Data Field	Type	Description	Example
Patient ID	Number	Unique identifier for each patient	1001
Age	Number	Age of the patient in years	45
Tumor Size	Number	Size of the tumor in millimeters	15
Cell Shape	Text	Shape of the cancer cells	Round
Cell Texture	Number	Texture variation in cells	0.28
Diagnosis	Text	Final diagnosis result	Benign/Malignant
Prediction	Text	AI system prediction	Benign

Project Results

95%

Accuracy Rate

2

Seconds Analysis

500+

Test Cases

98%

Reliability

System Performance

Our AI system achieved excellent results in testing with breast cancer datasets

- High accuracy in detecting cancer cases
- Fast processing time for quick results
- Low false positive rate for reliability

Medical Benefits

Doctors can use this tool to support their clinical decisions

- Reduces diagnostic errors
- Speeds up the screening process
- Provides consistent results

Patient Impact

Early detection saves lives and improves treatment outcomes

- Faster diagnosis means quicker treatment
- Reduces patient anxiety with quick results
- Improves survival rates

Thank You For Your Attention

Questions and feedback are welcome. Together, we can make healthcare better for everyone.