

BREAST
CANCER





Learning Objectives

- **At the end of the presentation, students will be able to:**
 - **Define Breast Cancer**
 - **Identify the controllable and uncontrollable risk factors of breast cancer**
 - **Recognize the 4 stages of breast cancer**
 - **Identify at least 5 methods of breast cancer prevention**
 - **Recognize the different breast cancer treatments available**

Definition

Breast cancer - abnormal breast cells that grow and form malignant tumors.



- ✓ Cancer is a group of diseases that occur when cells become abnormal and divide without control or order.
- ✓ Each organ in the body is made up of various kinds of cells.
- ✓ Cells normally divide in an orderly way to produce more cells only when they are needed; this process helps keep the body in good health.
- ✓ If cells divide when new cells are not needed, they form too much tissue. This extra tissue, called a tumor, can be benign or malignant.
- ✓ Eighty percent of all breast tumors are benign.

Origin



- **Female breast is composed of lobes and ducts**
- **Ductal carcinoma**
- **Lobular carcinoma**
- **Inflammatory breast cancer**
- **Medullary carcinoma and Mucinous (colloid) carcinoma**
- **Paget's disease**

Causes



- The cause of **breast cancer** is unknown.
- There are risk factors that increase the chance of a woman developing **breast cancer**.
- **Breast cancer** is not contagious

Risk Factors



Uncontrollable Factors

- Gender (female)
- Age
- Family medical history
- Mutations in BRCA1, BRCA2, and other genes
- Atypical tissue changes in the breast
- Ethnic/racial background
- First menstrual period before age 12
- Menopause after age 55
- Previous **breast cancer**
- Previous radiation treatment

Controllable Factors

- Do not have children late in life
- Alcohol consumption
- Lose excess weight
- Avoid a sedentary life style
- Stop smoking tobacco
- Use of postmenopausal hormone therapy

Prevention



- A personal prevention plan is important for women to develop in preventing **breast cancer** and detecting abnormalities early on.
- Routine mammograms should begin at age 40.

Prevention



- **Women in their 20s and 30s should have a breast exam at least every three years.**
- **After the age of 40 breast exams should be every year.**
- **A good breast exam by a healthcare professional includes the intake of personal history, visual exam of breast in front of a mirror, and a physical examination of the breast from the neck, armpit, breast, center of chest, and rib cage area.**

Prevention



- **Breast exams should be performed vertically (up and down) to ensure no breast tissue was missed. Different amounts of pressure should be applied as well.**
- **A good clinical breast exam should take around 10 minutes to perform.**



Prevention



- **Every woman should be familiar with the feel and look of her breasts and be able to detect changes.**
- **Women should examine their breasts at the same time each month.**

Stages of Breast Cancer



- Four stages of breast cancer
- Stage I
 - Is when the cancer cells are breaking through normal tissue creating tumors, but lymph nodes are not involved.

Stages of Breast Cancer



- **Stage II - Two categories.**
- **Stage IIA**
 - Can have different factors. One is that tumor is present but not located in the breast. The tumor is located in the lymph nodes under the arm. Another possibility is that the tumor is 2 centimeters or smaller and has spread to the auxiliary lymph nodes.
- **Stage IIB**
 - Is that the tumor is larger than 2 centimeters but not larger than 5 centimeters; the tumor has not spread to the auxiliary lymph nodes.

Stages of Breast Cancer



- **Stage III - Two categories IIIA and IIIB.**
- **In Stage IIIA**
 - The tumor is larger than five centimeters and significant involvement of lymph nodes is present. The nodes are clumped together and to the surrounding tissue.
- **In Stage IIIB**
 - The tumor has imbedded itself into the breast skin, chest wall, and internal mammary lymph nodes. This stage includes inflammatory breast cancer, which is very serious and the disease is aggressive.

Stages of Breast Cancer

- Stage IV

- Is when the tumor has spread beyond the breast into the base of the neck, lungs, liver, bone, and even the brain



Treatment

- Clinical Trials
- Standard Treatments



Clinical Trials

- **A clinical trial is a research study that is seeking to improve current treatments, obtain information on new treatments for cancer patients.**
- **When a clinical trial shows that a new treatment is better than a standard treatment, the new treatment is used.**



Standard Treatment

- **Surgery**
- **Radiation therapy**
- **Chemotherapy**
- **Hormonal treatment**



Surgical Treatment

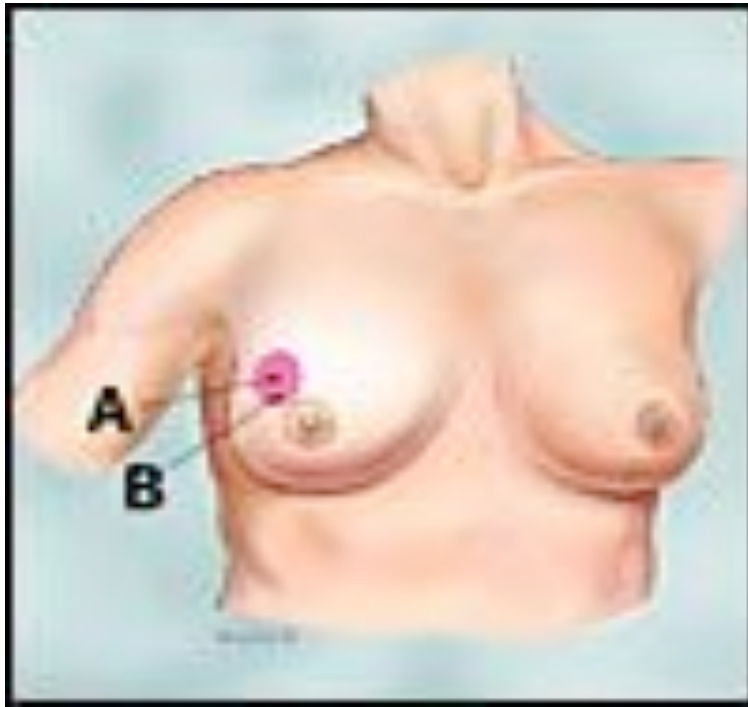


- **Removal of the tumor via lumpectomy or mastectomy, which is the removal of part, one, or both breasts.**



Surgical Treatment

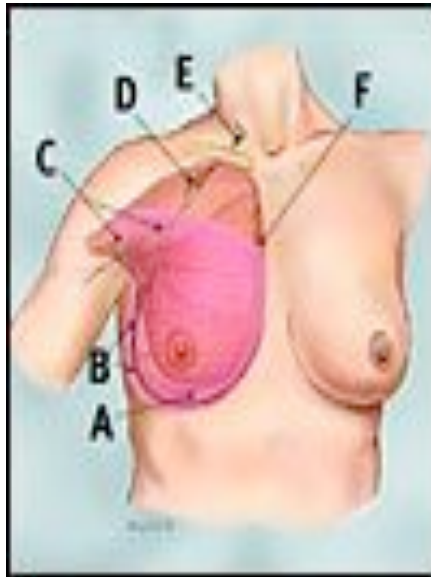
- **Lumpectomy**



Surgical Treatment



- **Partial Mastectomy**



Surgical Treatment



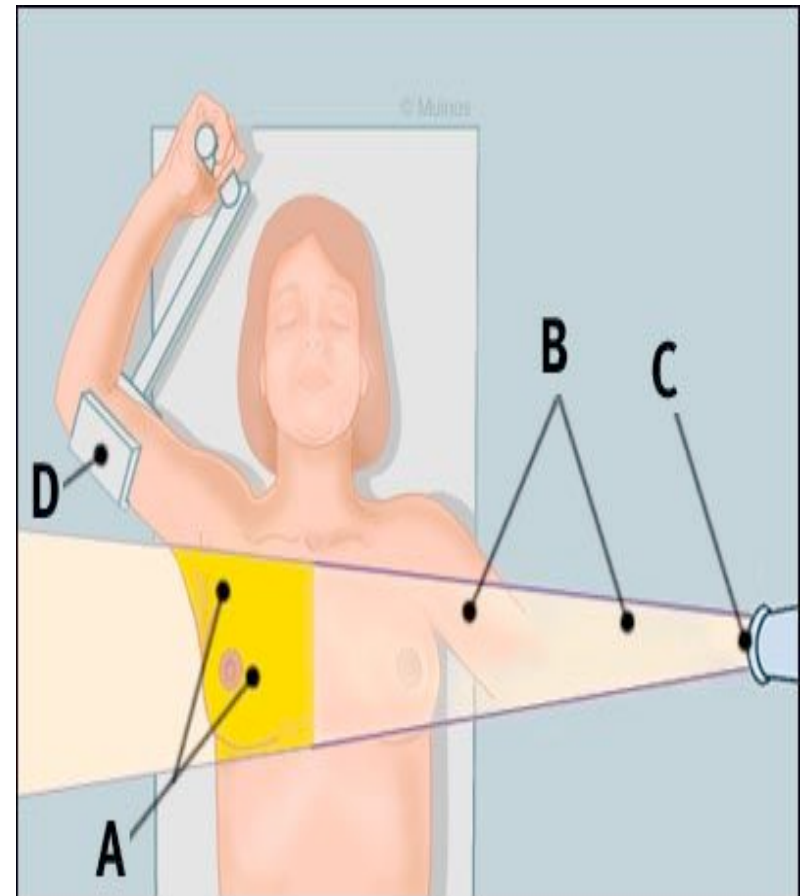
- **Double Mastectomy**



Radiation Therapy



- Radiation therapy is often used after the above surgical procedures to kill any cancer cells that may remain.



Chemotherapy

- **Chemotherapy is treatment with drugs that attack and kill cancer cells.**



Hormonal Treatment



- Hormonal treatment is common in treating **breast cancer** in women whose tumors are hormone receptor-positive.
- These drugs block and reduce estrogen levels, thereby reducing the recurrent **breast cancer**.

Intervention



- **Experimental Treatments**
- **Reduce stress**
- **Exercise**
- **Eat healthy**
- **Regular mammograms**



Statistics



- **Mostly occurs in women over 50,
Uncommon for women under 35**

- **Age increases risk**
 - * 40 year-old → a 1-in-67 chance
 - * 60 year-old → a 1-in-29 chance
 - * 70 year-old → a 1-in-24 chance

- **Not all ethnic groups in the US are equally susceptible**
 - *1- Caucasian women carry the highest incidence
 - *2- African-American women
 - *3- Asians and Pacific Islanders
 - *4- Hispanics
 - *5- American Indians/Alaska natives

Statistics

- Clinical trial on **breast cancer** risk linked to **Alcohol** consumption

- Non drinker risk 20%
- Half a drink risk 30%
- One drink risk 40%
- More than 1 risk 50%

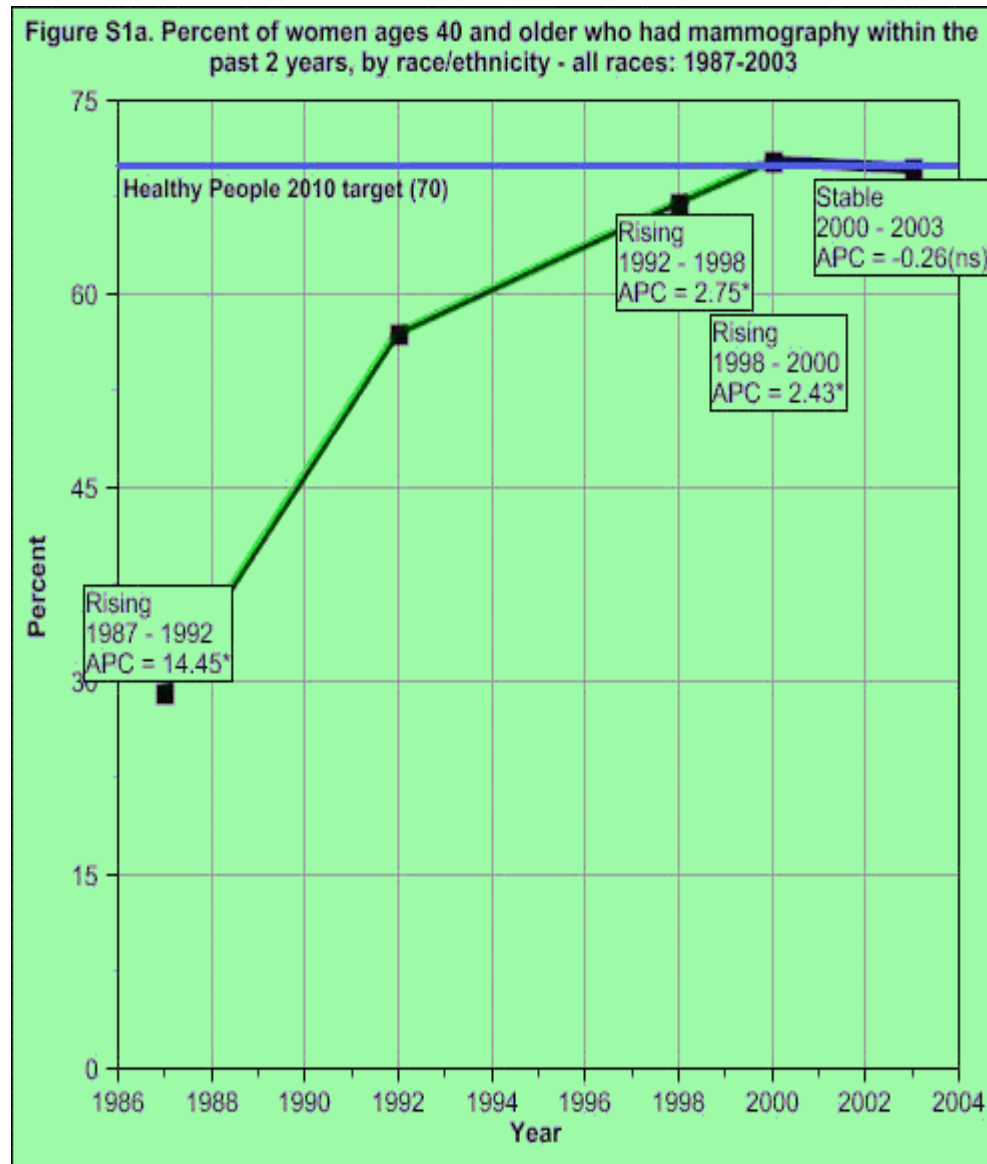
Alcohol



* **Slash your chances of developing **breast cancer** by 79%, by drinking 5 glasses of water a day**

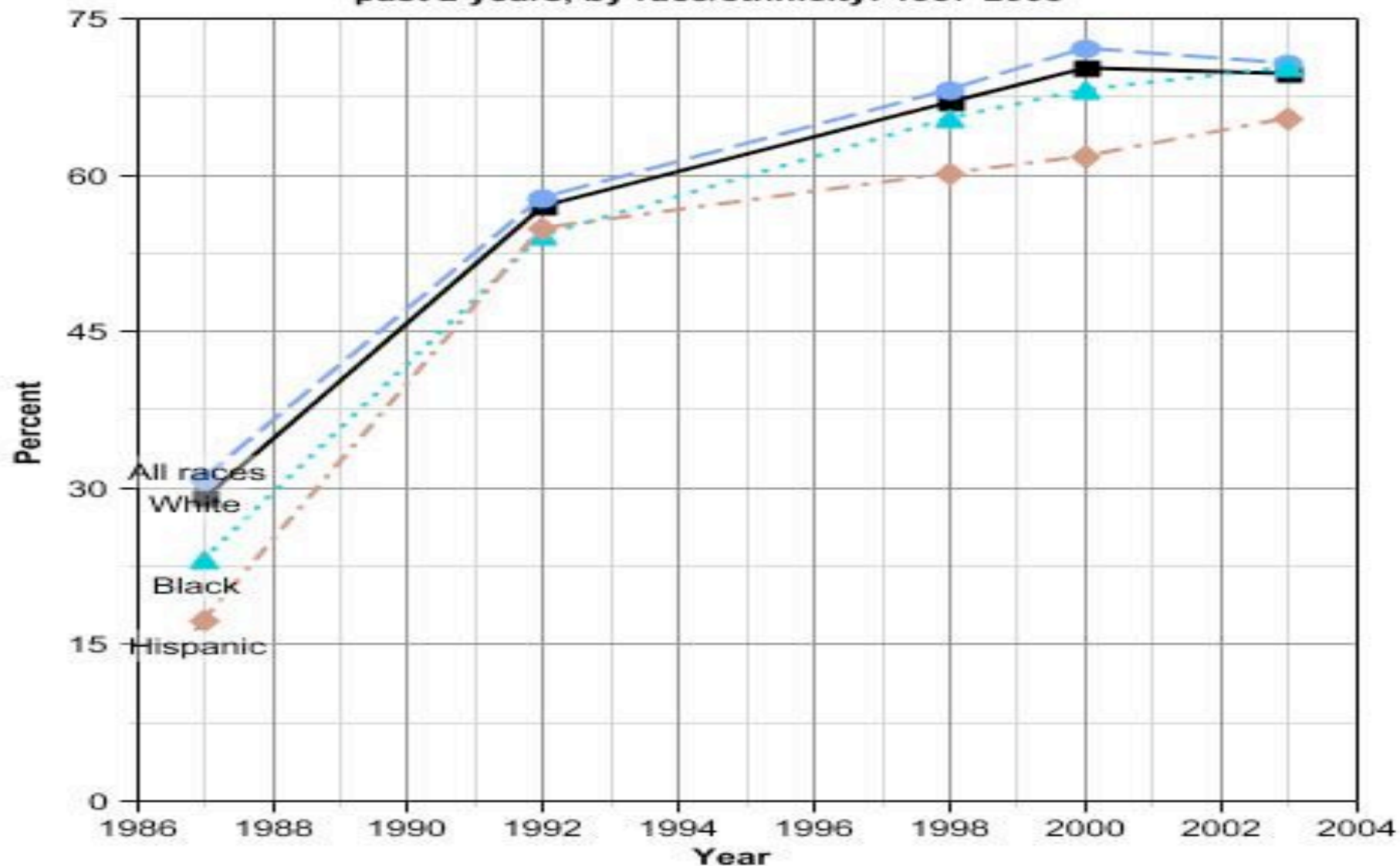
EARLY DETECTION - Breast Cancer Screening

If
Detection is discovered early, then the five-year survival rate for **either** gender exceeds 95%.



*Statistics show
13 million
U.S. women
40 years or
older have
NEVER had
a mammogram.

Figure S1. Percent of women ages 40 and older who had mammography within the past 2 years, by race/ethnicity: 1987-2003



EARLY DETECTION STATISTICS – Breast Cancer Screening

National Cancer Institute _ Cancer Trends Progress Report – 2005 Update

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey.

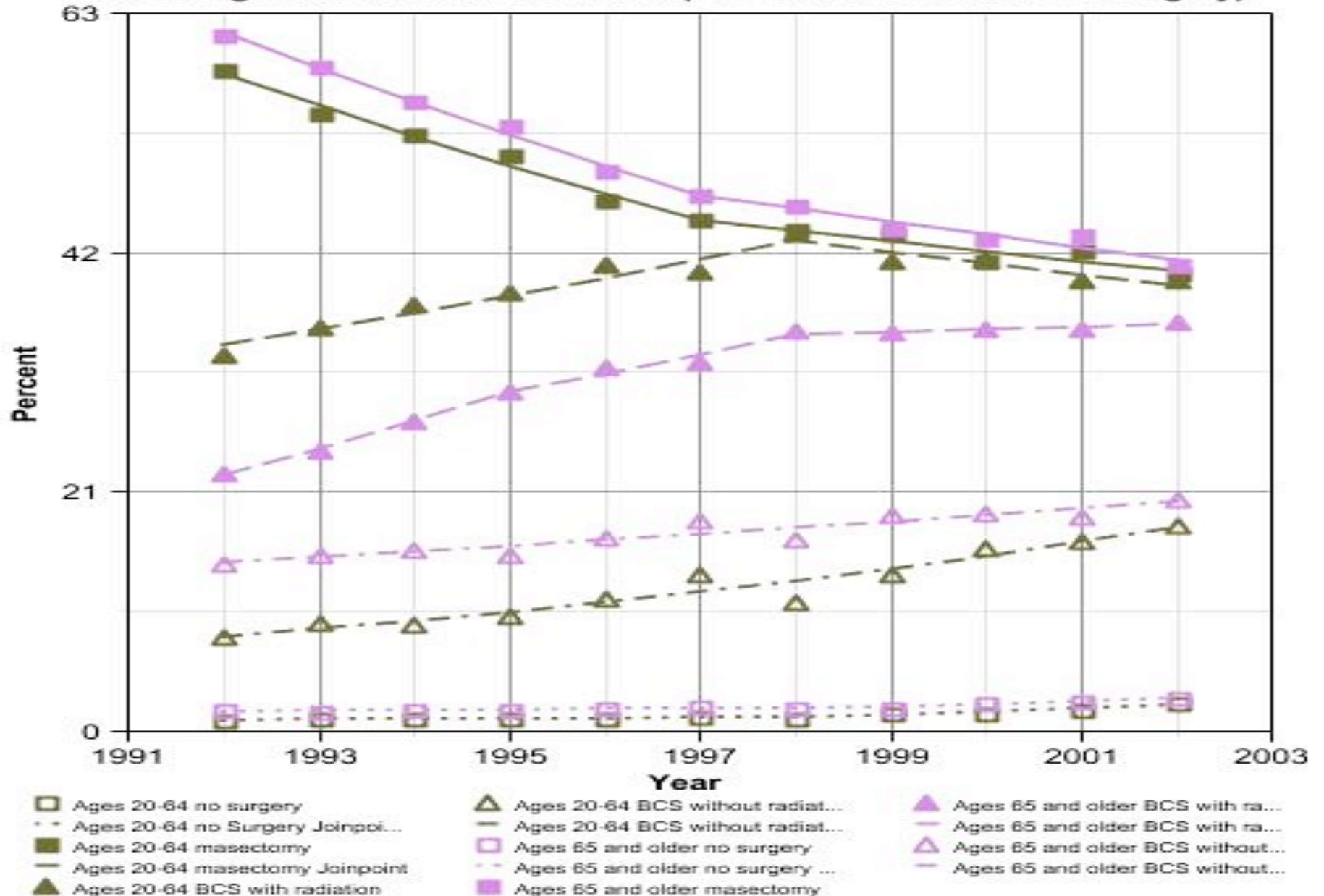
Statistics



- **Women between ages 50-69, screening lowers risk by 30%**
- **Women in their 40's, risk can be reduced by about 17%**
- **Women ages 70 and older, mammography may be helpful**

TREATMENT STATISTICS

Figure T1. Treatment distribution for invasive female breast cancer patients with AJCC stage less than IIIA: 1992-2000 (BCS with radiation vs. no surgery)



LIFE AFTER CANCER STATISTICS - Costs of Cancer Care

Table L1: National Cancer Treatment Expenditures in Billions of Dollars (1963-2004)

| Year | Cancer treatment spending (billions) | Total personal health care spending (billions) | Percent of cancer treatment spending to total |
|------|--------------------------------------|------------------------------------------------|-----------------------------------------------|
| 1963 | \$1.3 | \$29.4 | 4.4% |
| 1972 | \$3.9 | \$78.0 | 5.0% |
| 1980 | \$13.1 | \$217.0 | 6.0% |
| 1985 | \$18.1 | \$376.4 | 4.8% |
| 1990 | \$27.5 | \$609.4 | 4.5% |
| 1995 | \$41.2 | \$879.3 | 4.7% |
| 2004 | \$72.1 | \$1540.7 | 4.7% |

Statistics for Death Rates



- **Black women have the highest breast cancer death rate at 36% -vs- all racial and ethnic groups**
- **White women are second highest at 27%**
- **Hispanics at 18%**
- **American Indians/Alaska Natives at 15%**
- **Asians/Pacific Islanders at 12%**

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*October is
Breast
Cancer
Awareness
Month*

Review Questions

1. What is Breast Cancer?
2. The cause of breast cancer is known and it is contagious:
TRUE FALSE
3. There are ___ stages of breast cancer
4. Gender and age are examples of _____ risk factors
5. List 4 methods of breast cancer prevention