



# Quality Versus Quantity: Breast Cancer Treatments and Survival Rates

---

Presented By  
Casey Almond

---





# Breast Cancer

- **281,550** new cases expected in 2021
  - **44,130** cases are likely to result in death
- A group of malignant diseases that begin by forming in the tissues of the breast
- Signs and Symptoms
- Early detection leads to better prognosis

## Breast Cancer Stats & Facts

Knowing your breast cancer risks can save your life. These figures reveal the hope and truth.

This Year, **281,550** new cases of breast cancer will be diagnosed in women.

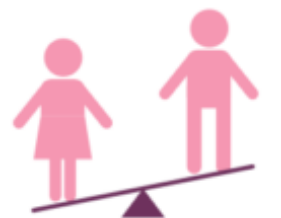
**1 in 8**  
women

Who live to be 100 will develop breast cancer in her lifetime.



**49,290**

cases of Carcinoma in Situ



**2,650**

new cases of invasive breast cancer in men

**85%**

About 85 % of diagnoses occur in women with no family history of breast cancer.

## Yet there is good news



Breast cancer's mortality rate has been declining since 1989, due to early detection and improved treatment.



Physically active women are **25% less likely** to develop breast cancer than those who are not active.

More Than

**3.9 Million**

breast cancer survivors in the United States.

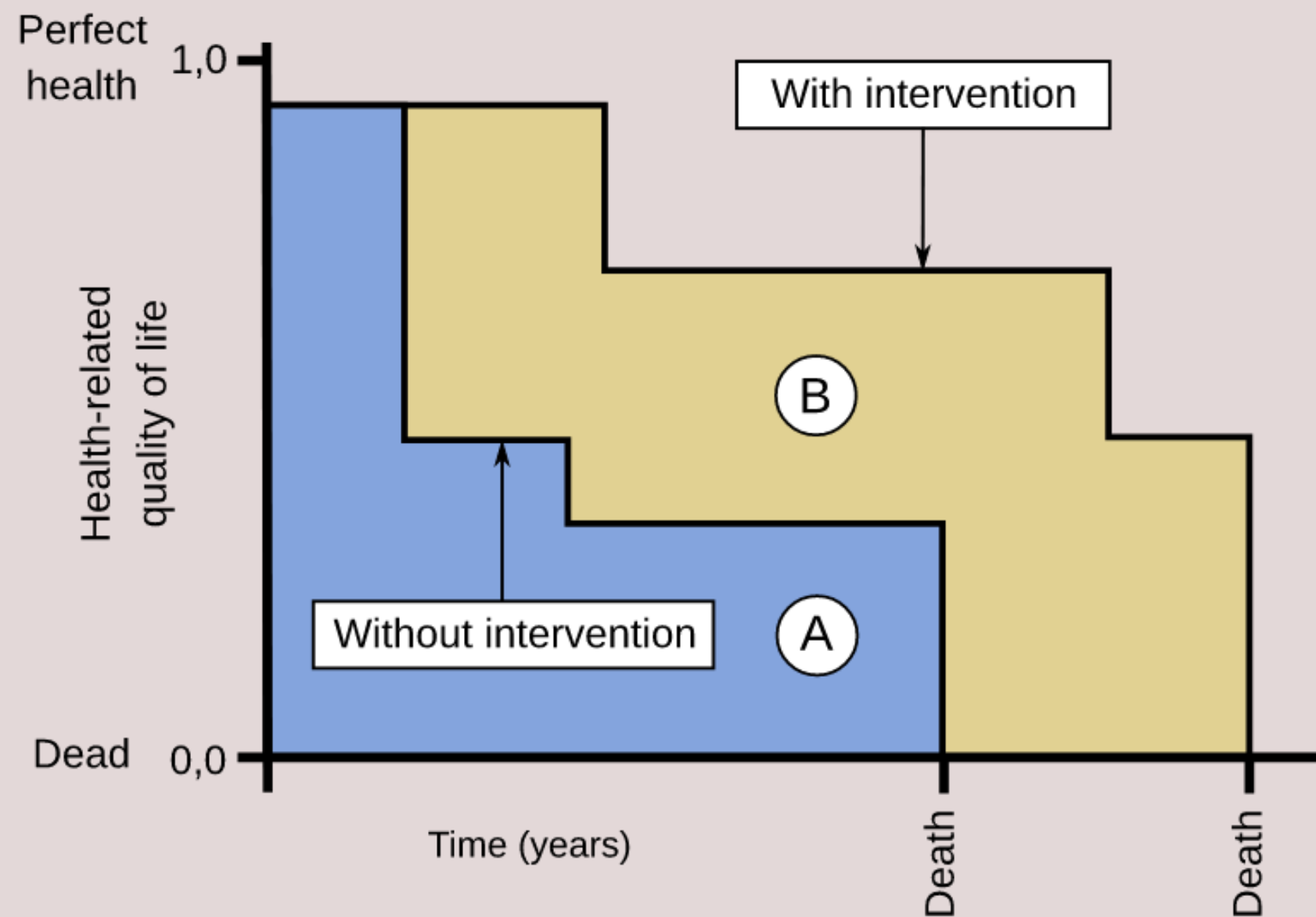


**ACT NOW**

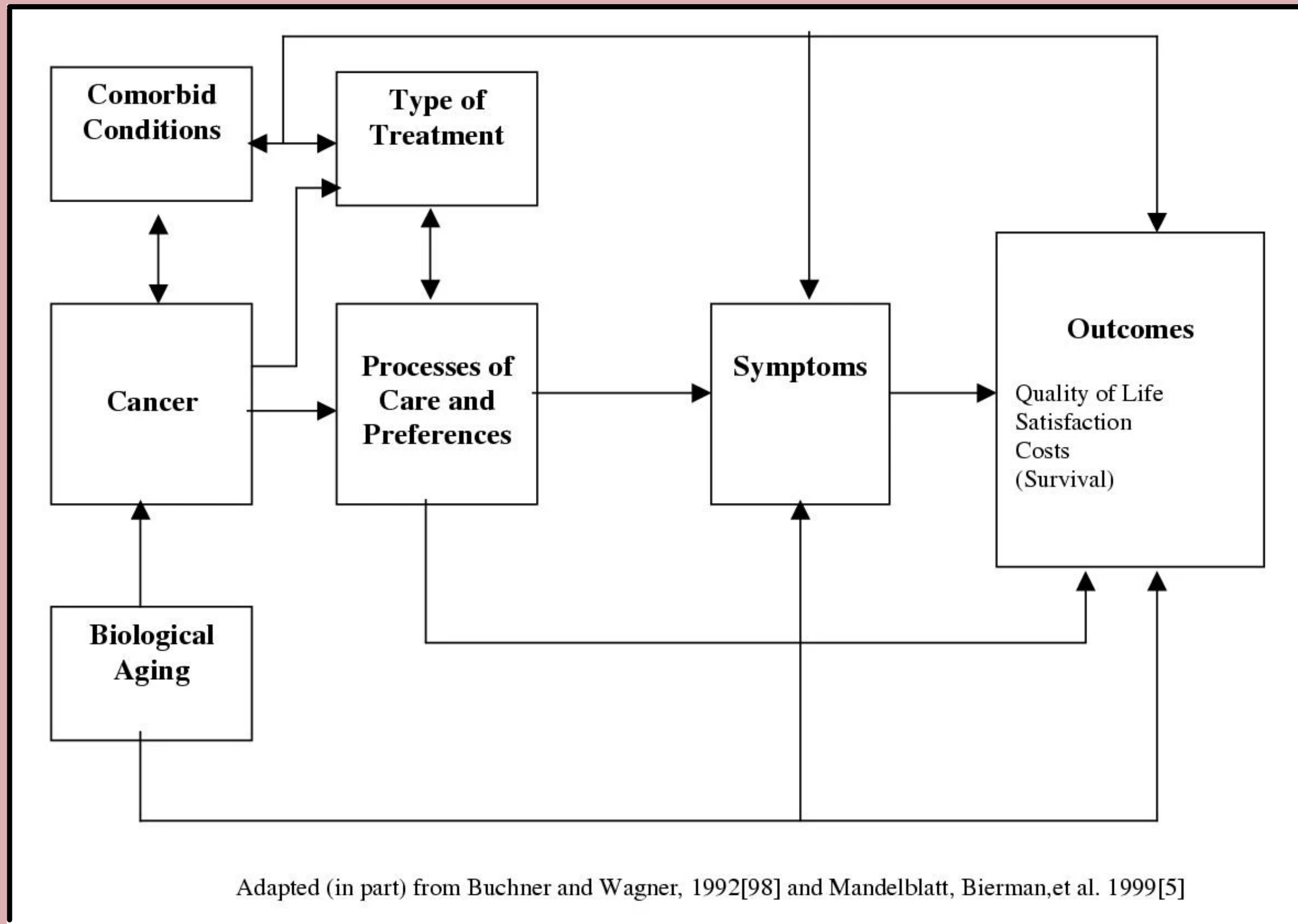
cancer education and screenings can save lives.

Schedule your mammogram by calling (310) 829-8000

# Quality Versus Quantity of Life



- Quality Adjusted Life Years (QALY) model
- Influencing Factors
- Weighing the risks and benefits of treatment
- Ending the stigma of "giving up"



# Treatment Plan Process



# Surgery: Overview



## Types:

- **Breast Conserving Surgery (BCS)**
- **Mastectomy**
  - simple, double, skin-sparing, nipple-sparing, modified radical, and radical

# Quality of Life After Surgery

- Surgical Scars
  - Body Image
- Menopausal Side Effects
- Seroma/ Haematoma
- Lymphoedema
- Axillary Cording
- Pain

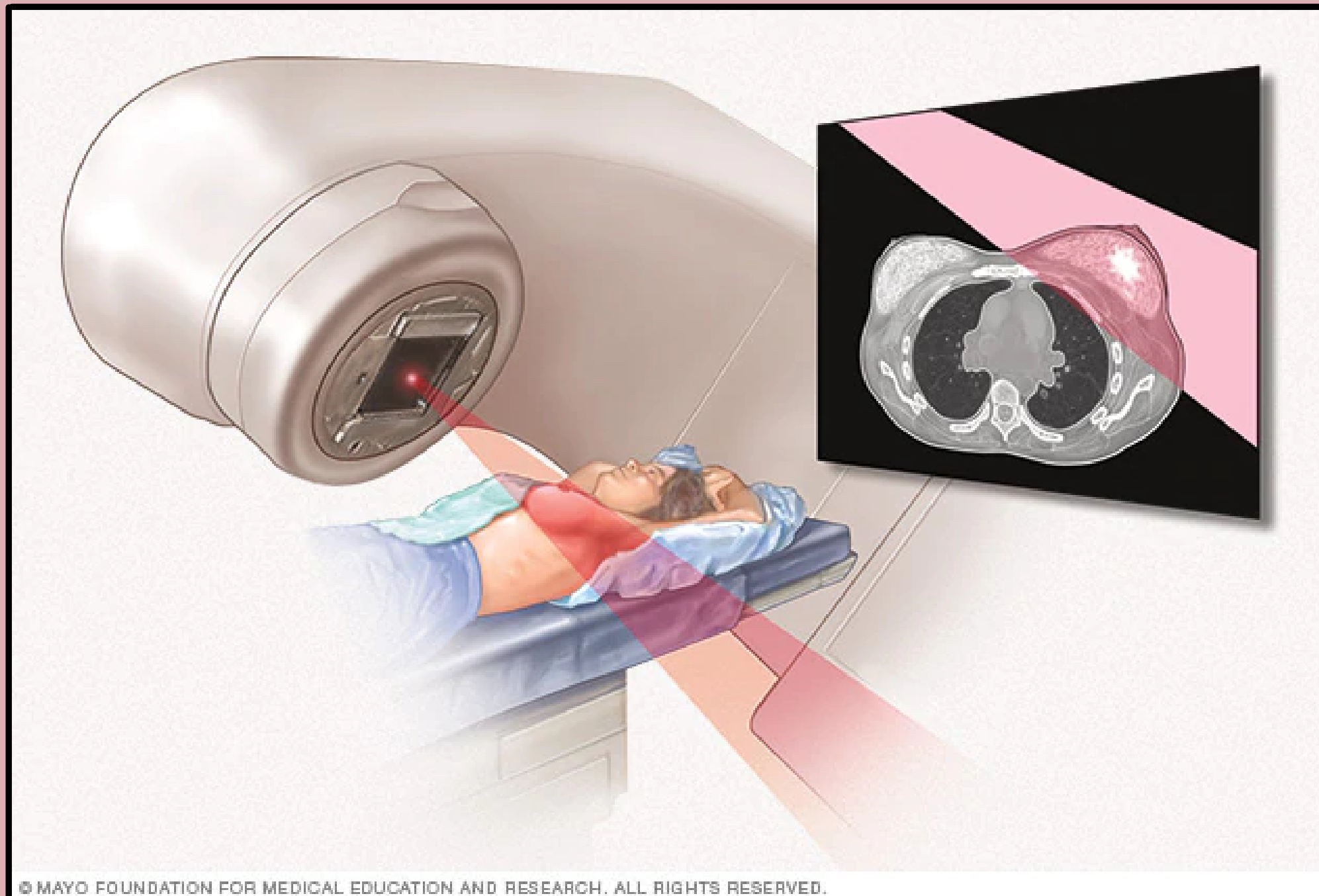




# Surgery: Effects to Quantity of Life

- Recommended as first treatment option for most patients
- Length of survival increased by 40 percent in most studies
  - 24.3 months versus 40.4 months
- Mastectomy does not give you any better chance of long-term survival compared to BCS

# Radiation: Overview



Destroys cancer cells by using high energy waves

Types:

- **External Beam**
- **Internal Beam**
  - Brachytherapy



# Quality of Life After Radiation

- Skin Changes
- Fatigue
- Radiation Pneumonitis
- Radiation Fibrosis
- Shortness of Breath
- Difficulty Swallowing



# Radiation: Effects to Quantity of Life

## **Early Breast Cancer Trialists' Collaborative Group (EBCTCG)**

- Breast radiation reduced the chance of a tumor recurrence within the breast after 20 years from 30.3% to 10.6%

## **European Organization for Research and Treatment of Cancer**

- Radiation therapy decreased the risk of dying from cancer by approximately 33%



# Chemotherapy: Overview



- Often called chemo, anti-cancer, or antineoplastic treatment
- Used to kill cancer cells directly, shrink a tumor before surgery or to stop the growth or spread of the cancer cells
- Treatment must be repeated several times
  - Months to years

# Quality of Life After Chemotherapy

- Nausea/ Vomiting/ Diarrhea
- Fatigue
- Hair loss
- Thrombocytopenia, anemia, and neutropenia
  - Infections
- Pain
- "Chemo Brain"





# Chemotherapy: Effects to Quantity of Life

## Early Breast Cancer Trialists' Collaborative Group (EBCTCG)

- Anthracycline increases overall breast cancer survival rates by 3 percent at 5 years and 4 percent at 10 years
- Anthracycline plus a taxane increases the overall 5 year survival rate

## The Trial Assigning Individualized Options for Treatment (TAILORx)

- Hormone receptor (HR)-positive and HER2-negative breast cancer that did not spread to the lymph nodes had a survival rate of 93.1% for those who had chemo and 92.8% for those who did not after 5 years

# Hormone Therapy: Overview

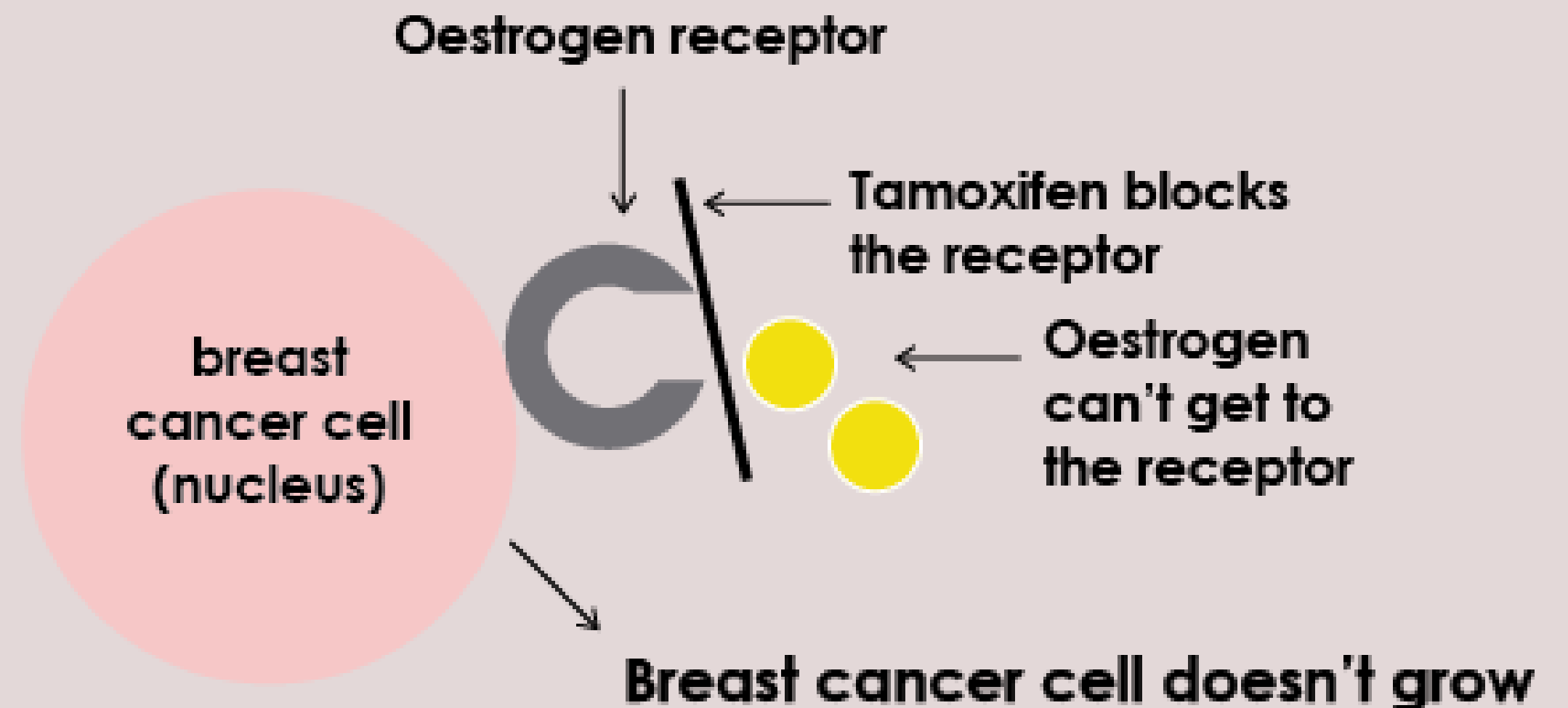
- Block the effects of estrogen and progesterone in the body
- Cancerous cells must have estrogen receptors in order for treatment to work

- Premenopausal

- **Tamoxifen**

- Menopausal

- **Aromatase Inhibitor**



# Quality of Life After Hormone Therapy

- Ovarian Cysts
- Increased Risk for Ovarian Cancer
- Blood Clots
- Osteoporosis
- Muscle and Joint Pain
- Ovarian Hyperstimulation
  - Enlarged Ovaries
  - Renal Failure
  - Stroke





# Hormone Therapy: Effects to Quantity of Life



- Taking Tamoxifen for 5 years after breast cancer surgery cuts the chance of cancer coming back by half
- Patients who stop treatment are 35 to 56 percent more likely to have breast cancer recurrence
  - 25 percent have to stop early due to side effects of treatment

# Immunotherapy: Overview

- Used to help a person's own immune system recognize and kill cancer cells
- Helpful in treating advanced metastatic breast cancers

Types:

- **Atezolizumab (Tecentriq)**
- **Pembrolizumab (Keytruda)**



# Quality of Life After Immunotherapy

## **Tecentriq**

- fatigue, cough, nausea, loss of appetite, constipation and diarrhea
- life threatening issues in the lungs, intestines, liver, hormone making glands, and kidneys

## **Keytruda**

- fatigue, nausea, diarrhea, hair loss, rash, cough, headache, low white blood cell counts, and anemia
- lung problems, liver problems, colitis, and severe infection



# Immunotherapy: Effects to Quantity of Life

- It has not shown a lot of success in treating breast cancer yet because it is hard to train the immune system to attack due to the number of subtypes present in breast cancer
- Patients must have a high level of **PD-L1 proteins** for the immunotherapy to even have a chance of working correctly
- **Triple-negative breast cancer** patients have shown the largest benefit

**TECENTRIQ + nab-pac** is the first cancer immunotherapy approved for **PD-L1+ mTNBC**

Nab-paclitaxel (nab-pac) is a type of chemotherapy also known as paclitaxel protein-bound.  
mTNBC=metastatic triple-negative breast cancer;  
PD-L1=programmed death-ligand 1.

Learn how **TECENTRIQ** may help >

Actor Portrayal

# Complementary and Alternative Medicine (CAM): Overview



- Complementary medicine is used alongside standard breast cancer treatments to help improve a patient's overall quality of life while alternative medicine is used instead of the standard treatments for breast cancer

Types:

- Acupuncture, yoga, herbal medicine, massages, hypnosis, special diet and nutrition, and meditation



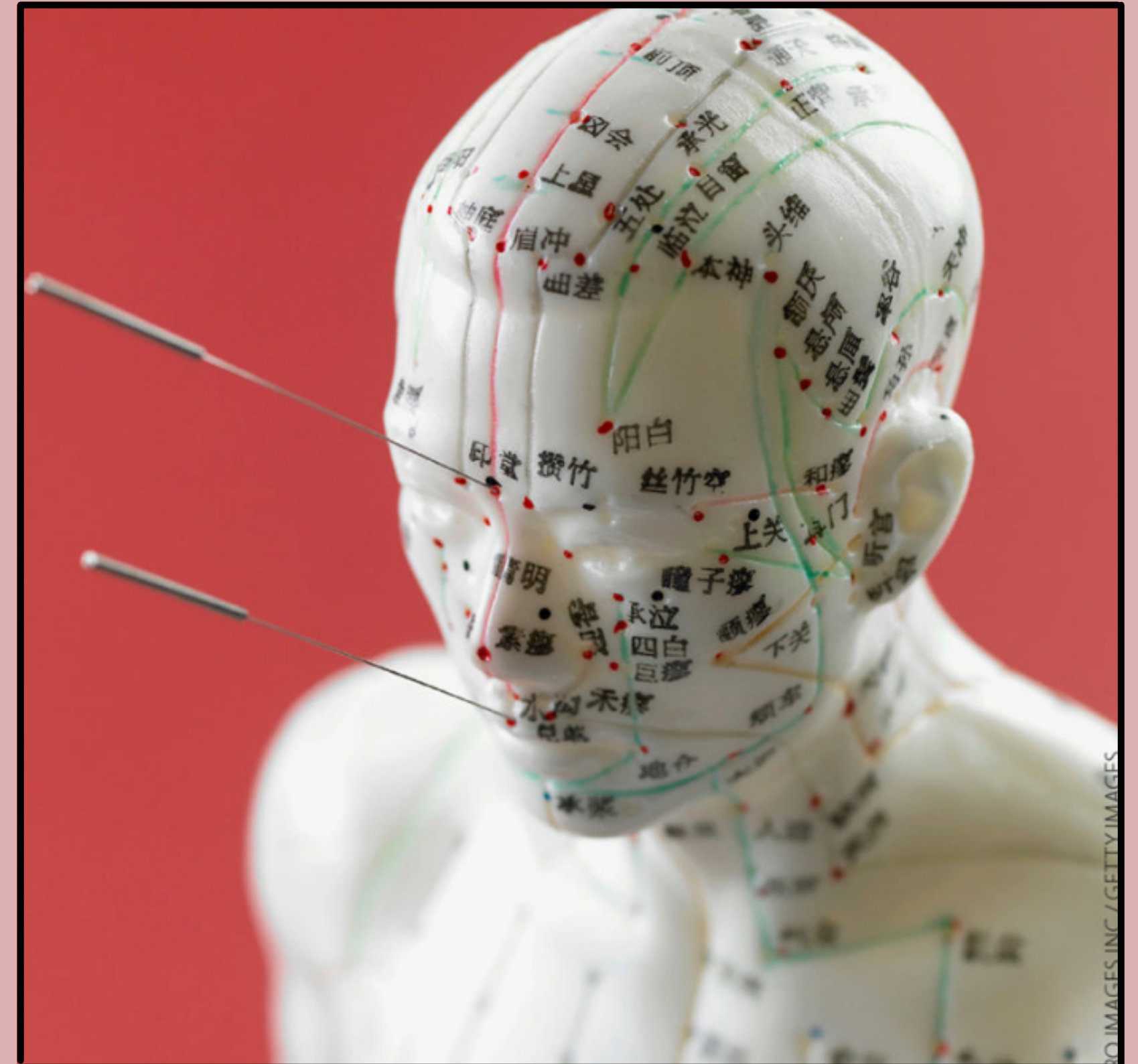
# Quality of Life While Using CAM

## Acupuncture:

- Relieves nausea and vomiting caused by chemotherapy
- Increase pain tolerance
- Risk of infection

## All CAM Treatments:

- Reduce anxiety and pain
- Improve coping strategies





# CAM: Effects to Quantity of Life

## Herbal and Dietary Supplements:

- Can be sold without regulation by the Food and Drug Administration
- Can Decrease Effectiveness of Cancer Treatments

## Effect of Relying on Alternative Medicine:

- It will not stop the cancer from spreading or help to get rid of it
- Opportunity to improve their time left



# When It Is Time To Stop Life Prolonging Treatment?

- If you have had 3 different treatments and your cancer has grown or spread, more treatment usually will not help you feel better or increase your chance of living longer. Instead, more treatment could cause serious side effects that shorten your life and reduce the quality of the time you have left

## **Signs That End of Life Is Near:**

- Poor appetite and sleeping more with declining strength
- Body not responding to treatment
- Organs shutting down



# End of Life Care

## **Palliative Care:**

- Relieve and manage symptoms rather than treating or curing breast cancer
- Can be used alongside treatment

## **Hospice Care:**

- Focus on improving quality of life in breast cancer patients who have only months to live
- Offer support through the dying process and help patients maintain dignity and comfort





# Conclusion

## Stage 3 and 4 Breast Cancer Patients:

- Trade off between prolonging life and quality of time left

## Informed Decision:

- Knowing the effects that breast cancer treatments can have on the body will help patients make the best decisions regarding their care





# References

- Breast cancer - statistics. (2020, August 13). *American Society of Clinical Oncology*. Retrieved February 14, 2021, from <https://www.cancer.net/cancer-types/breast-cancer/statistics#:~:text=The%20average%205%2Dyear%20survival,with%20breast%20cancer%20is%2099%25>.
- Cancer Facts & Figures 2021. (2021). *American Cancer Society*. <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2021/cancer-facts-and-figures-2021.pdf>.
- Care at the End of Life for Advanced Cancer Patients. (2014, July). Choosing Wisely. <https://www.choosingwisely.org/patient-resources/care-at-the-end-of-life-for-advanced-cancer-patients/>
- Carter, D. (2020 September). Does immunotherapy treat breast cancer? MD Anderson Cancer Center. <https://www.mdanderson.org/cancerwise/does-immunotherapy-treat-breast-cancer.h00-159385101.html>
- Chemotherapy combinations and early breast cancer. (2020, December 30). Susan G. Komen. Retrieved February 14, 2021, from <https://www.komen.org/breast-cancer/facts-statistics/research-studies/topics/chemotherapy-combinations-for-early-breast-cancer/>
- Complementary and alternative Medicine (CAM). (2020). National Cancer Institute. <https://www.cancer.gov/about-cancer/treatment/cam>
- Complementary and Alternative medicine (CAM) Use. Oncology Nurse Advisor. (2019, January 5). <https://www.oncologynurseadvisor.com/slideshow/slides/complementary-and-alternative-medicine-cam-use/>.
- Czerniec, A. (2019, December 9). A week since my mastectomy: Breast cancer blog. Web designer Mark Czerniec. <https://markcz.com/double-mastectomy/>.
- Fawcett, N. (2017, January 24). Side Effects of Cancer Treatment: Early Stage Breast Cancer. Michigan Medicine. <https://labblog.uofmhealth.org/rounds/half-of-breast-cancer-patients-experience-severe-side-effects>
- Fonseca, D., Torrão, H., & Costa, N. A. (2018). Ovarian hyperstimulation syndrome induced by hormone therapy for breast cancer treatment. *American Journal of Obstetrics and Gynecology*, 218(2), 260-260. doi:10.1016/j.ajog.2017.10.013
- Hormonal Therapies for Breast Cancer Fact Sheet: Westmead BCI. Westmead Breast Cancer Institute. (2020, November 2). <https://www.bci.org.au/breast-cancer-information/fact-sheets/hormonal-therapies-breast-cancer/>.
- Hormone Therapy: Breast cancer. (2020, July 07). Cancer Research UK. <https://www.cancerresearchuk.org/about-cancer/breast-cancer/treatment/hormone-therapy>
- Hormone therapy for breast cancer. (2020, November 3). MedlinePlus. <https://medlineplus.gov/ency/patientinstructions/000909.htm>
- Immunotherapy for Breast Cancer. (2019). American Cancer Society. <https://www.cancerresearch.org/immunotherapy/cancer-types/breast-cancer>
- Keytruda.(2020,November).BreastCancer.org. <https://www.breastcancer.org/treatment/immunotherapy/keytruda>
- Mandelblatt, J., Figueiredo, M. & Cullen, J. Outcomes and quality of life following breast cancer treatment in older women: When, why, how much, and what do women want?. *Health Qual Life Outcomes* 1, 45 (2003). <https://doi.org/10.1186/1477-7525-1-45>
- Mastectomy: Mastectomies for breast cancer. (2019, September 18). American Cancer Society. <https://www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/mastectomy.html>
- Mayo Foundation for Medical Education and Research. (2021, March 6). Radiation therapy for breast cancer. Mayo Clinic. <https://www.mayoclinic.org/tests-procedures/radiation-therapy-for-breast-cancer/about/pac-20384940>.
- MediLexicon International. (2018). Metastatic breast cancer: End-of-life symptoms and care. *Medical News Today*. <https://www.medicalnewstoday.com/articles/323824#end-of-life-care>.
- Not Taking Hormonal Therapy As Prescribed Leads To More Recurrence. (2016, June 23). BreastCancer.org. <https://www.breastcancer.org/research-news/not-taking-hormonal-tx-leads-to-more-recurrence>
- Pérez-Fidalgo, Jose Alejandro, et al. "Removal of Primary Tumor Improves Survival in Metastatic Breast Cancer. Does Timing of Surgery Influence Outcomes?" *Breast (Edinburgh)*, vol. 20, no. 6, 2011, pp. 548–554., doi:10.1016/j.breast.2011.06.005.
- Radiation for breast cancer. (2019, September 18). American Cancer Society. <https://www.cancer.org/cancer/breast-cancer/treatment/radiation-for-breast-cancer.html>

# References

- Radiation-pneumonitis.(2021).CanadianCancerSociety.  
[https://www.cancer.ca/en/cancer-information/diagnosis-and-treatment/managing-side-effects/radiation-pneumonitis/?region=on#:~:text=Radiation%20pneumonitis%20is%20inflammation%20of,lungs%20\(called%20pulmonary%20fibrosis\).](https://www.cancer.ca/en/cancer-information/diagnosis-and-treatment/managing-side-effects/radiation-pneumonitis/?region=on#:~:text=Radiation%20pneumonitis%20is%20inflammation%20of,lungs%20(called%20pulmonary%20fibrosis).)
- Sarah Azad, M. D. (2020, May 7). Keeping your self-esteem up after a mastectomy. <https://elcaminowomen.com/blog/cancer-care/keeping-your-self-esteem-up-after-a-mastectomy.html>.
- Schattner, E. (2018, June 6). Many Breast Cancer Patients Can Safely Skip Chemo, Large Trial Confirms. Forbes. <https://www.forbes.com/sites/elaineschattner/2018/06/03/many-breast-cancer-patients-can-safely-skip-chemo-tailorx-trial-of-oncotype-test-confirms/?sh=16680d3f4610>.
- Schweppe, N., & Nicole Schweppe My name is Nicole Schweppe. In March of 2017 I was given the news that I had breast cancer. As a 29 year old mom of 2 young kids this news rocked my world but through this experience I have grown to c. (2017, October 18). My Breast Cancer Journey, Part 2- How I Prepared for Chemotherapy. Blog Home. <https://blog.ambrygen.com/patient/post/224/my-breast-cancer-journey-part-2-how-i-prepared-for-chemotherapy>.
- Shrestha, A., Martin, C., Burton, M., Walters, S., Collins, K., & Wyld, L. (2019). Quality of life versus length of life considerations in cancer patients: A systematic literature review. *Psycho-oncology*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6619389/>
- Sibeoni, J., Picard, C., Orri, M. et al. Patients' quality of life during active cancer treatment: a qualitative study. BMC Cancer 18, 951 (2018). <https://doi.org/10.1186/s12885-018-4868-6>
- Side effects and complications. (2019) Breast Cancer Foundation NZ. Retrieved June 12, 2020, from <https://www.breastcancerfoundation.org.nz/breast-cancer/treatment-options/surgery/side-effects-complications>.
- Side effects of radiation therapy. (2020, September 23). American Society of Clinical Oncology. <https://www.cancer.net/navigating-cancer-care/how-cancer-treated/radiation-therapy/side-effects-radiation-therapy>
- Simon, S. (2018, June 04). Study: More breast cancer patients can safely skip chemotherapy. American Cancer Society. Retrieved February 14, 2021, from <https://www.cancer.org/latest-news/study-more-breast-cancer-patients-can-safely-skip-chemotherapy.html#:~:text=Five%20years%20after%20treatment%2C%20the%20rate%20of%20overall%20survival%20was,for%20those%20who%20did%20not>.
- Tecentriq(2020,August).Breastcancer.org  
<https://www.breastcancer.org/treatment/immunotherapy/tecentriq>
- Tecentriq (atezolizumab). Roche. (OAD). <https://www.roche.com/products/product-details.htm?productId=8c738504-101a-40b9-867b-d907c578df51>.
- Triple-Negative Breast Cancer Treatment: TECENTRIQ (atezolizumab). Triple-Negative Breast Cancer Treatment | TECENTRIQ (atezolizumab). (OAD). <https://www.tecentriq.com/tnbc.html>.
- The Margie Petersen Breast Center for Breast Health & Oncology - Santa Monica, CA: Saint John's Cancer Institute. Breast. (2021, March 8). <https://www.saintjohnscancer.org/breast/>.
- WhatGo. (2018, January 18). Long Term Side Effects Of Radiotherapy For BreastCancer.RadioChoices. <https://radiochoices.blogspot.com/2018/01/long-term-side-effects-of-radiotherapy.html>.



# References

- Wikimedia Foundation. (2021, February 26). Quality-adjusted life year. Wikipedia. [https://en.wikipedia.org/wiki/Quality-adjusted\\_life\\_year](https://en.wikipedia.org/wiki/Quality-adjusted_life_year).
- Your body after breast cancer treatment. (2019, September 24). Breast CancerNow:TheResearchandCareCharity. <https://breastcancernow.org/information-support/facing-breast-cancer/living-beyond-breast-cancer/your-body/your-body-after-breast-cancer-treatment>.