



Women's Health Research Institute
Putting Women's Health Research First

October 2013

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Dear Friend,

October is National Breast Cancer Awareness Month! This month is also one of the busiest months for mammograms as more women are proactive in screening and early detection initiatives against breast cancer. Being up to date on the symptoms, stages, and treatments of breast cancer are essential elements in the fight for survival.

Receiving a breast cancer diagnosis can be overwhelming, but with innovations in research, a greater understanding of this cancer, and more accessible treatments, women around the world are standing up against breast cancer. Almost every woman knows someone who has been diagnosed with breast cancer, and we hope this article will provide useful information for you and your loved ones.

Sincerely,

The Institute Staff

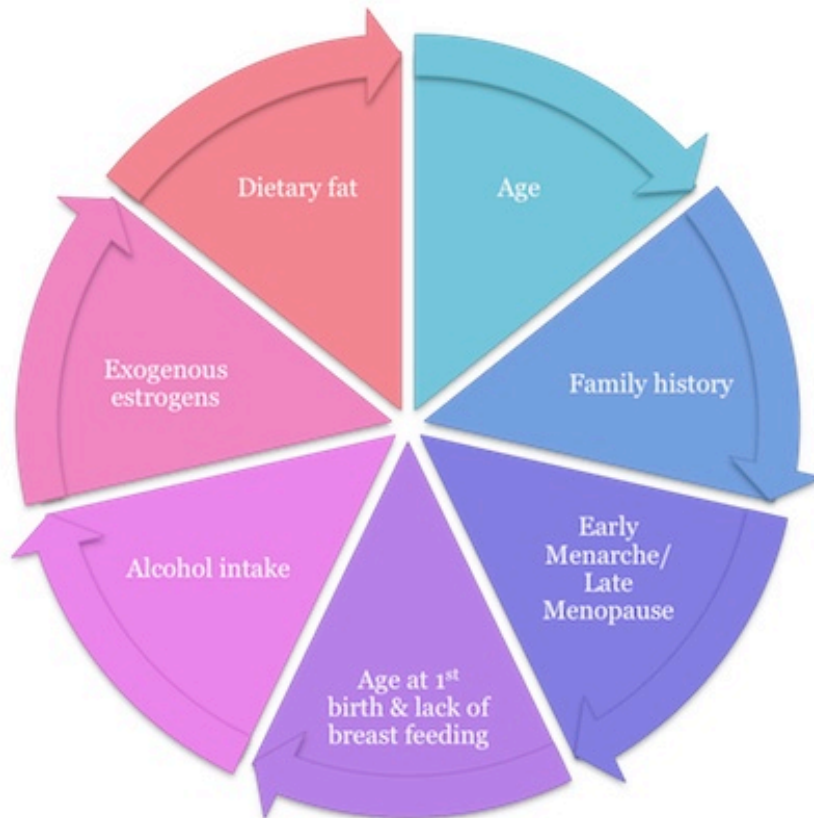
Updates on Breast Cancer Prevention, Treatment, and Survival

Breast cancer is the most frequently diagnosed cancer among US women. Roughly 220,000 women and 2,150 men will be diagnosed with breast cancer in the United States this year. However, the recent trends indicate a gradual reduction in female

breast cancer incidence rates in women over 50. With early detection and treatment, most will continue to lead a normal life.

Breast cancer is a type of cancer that originates from breast cells, typically from the inner lining of milk ducts or the lobules that supply them with milk. Malignant breast cancer can spread to other parts of the body beyond the breast, which is more severe. While the cause of breast cancer is still unclear, researchers have identified several risk factors that may impact a woman's likelihood of developing this type of cancer.

Risk Factors:



Symptoms and Early Detection

Being familiar with your body and knowing when something is abnormal is the first step towards early detection. While these symptoms do not automatically point to breast cancer, it is important to consult your doctor right away so that the problem can be treated.

Some observable symptoms

- Nipple tenderness, lump development, or thickening of breast
- Skin texture and color changes
- Changes in size, shape, or swelling of breast
- Dimpling anywhere on the breast
- Any nipple discharge, particularly clear or bloody discharge

Preventative Drugs

For women who have a high risk of breast cancer, there are preventive drug strategies which may reduce their risk. The drugs Tamoxifen, Raloxifene, and Exemestane have all been shown to be effective preventative strategies, though each drug comes with its own slew of side effects.

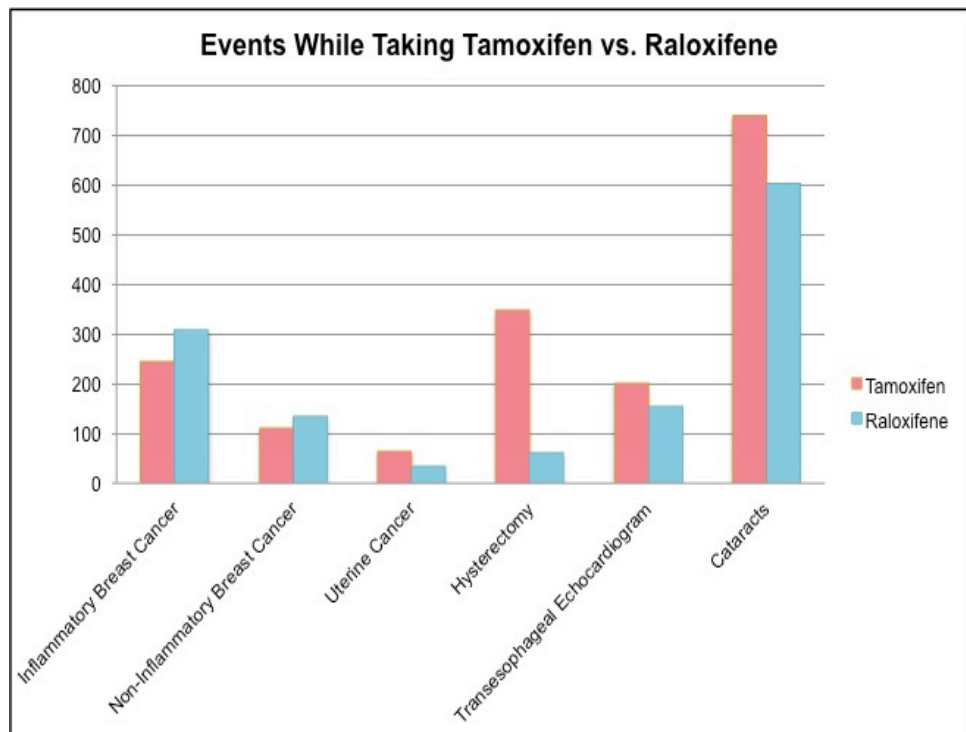
Tamoxifen: Tamoxifen is taken in pill form, typically every day for 5 years. Its goal is to prevent breast cancer from returning and spreading to other parts of the body. Studies show that taking Tamoxifen for 5 years decreases the risk of breast cancer by half. Furthermore, this decreased risk is maintained beyond the 5 years of taking the drug. The side effects of Tamoxifen include hot flashes, vaginal discharge, irregular menstrual periods, thinning bones, headaches, fatigue, nausea, and vaginal dryness or itching. Tamoxifen is unique in that this preventative drug is effective on *both* pre- and post-menopausal women.

Raloxifene: Raloxifene is an oral selective estrogen receptor modulator and has been found to be nearly as effective as Tamoxifen for postmenopausal women at high-risk for breast cancer. 20,000 women were randomized in a clinical trial to compare

Raloxifene to Tamoxifen. The two treatments were relatively similar, but Tamoxifen proved to be a slightly more effective drug. However, the side effects of Raloxifene decreased the risk of uterine cancer and thromboembolic conditions compared to the risk when taking Tamoxifen. Raloxifene is only effective on post-menopausal patients.

Exemestane: Exemestane is an aromatase inhibitor that blocks the synthesis of estrogen, lowering the estrogen level, and therefore slowing the growth of cancer. In a trial conducted with 4,560 increased-risk postmenopausal women against a placebo, Exemestane showed a decreased risk of breast cancer, and is used as an option for post-menopausal patients.

There are many side effects to consider when taking Tamoxifen, Raloxifene, or

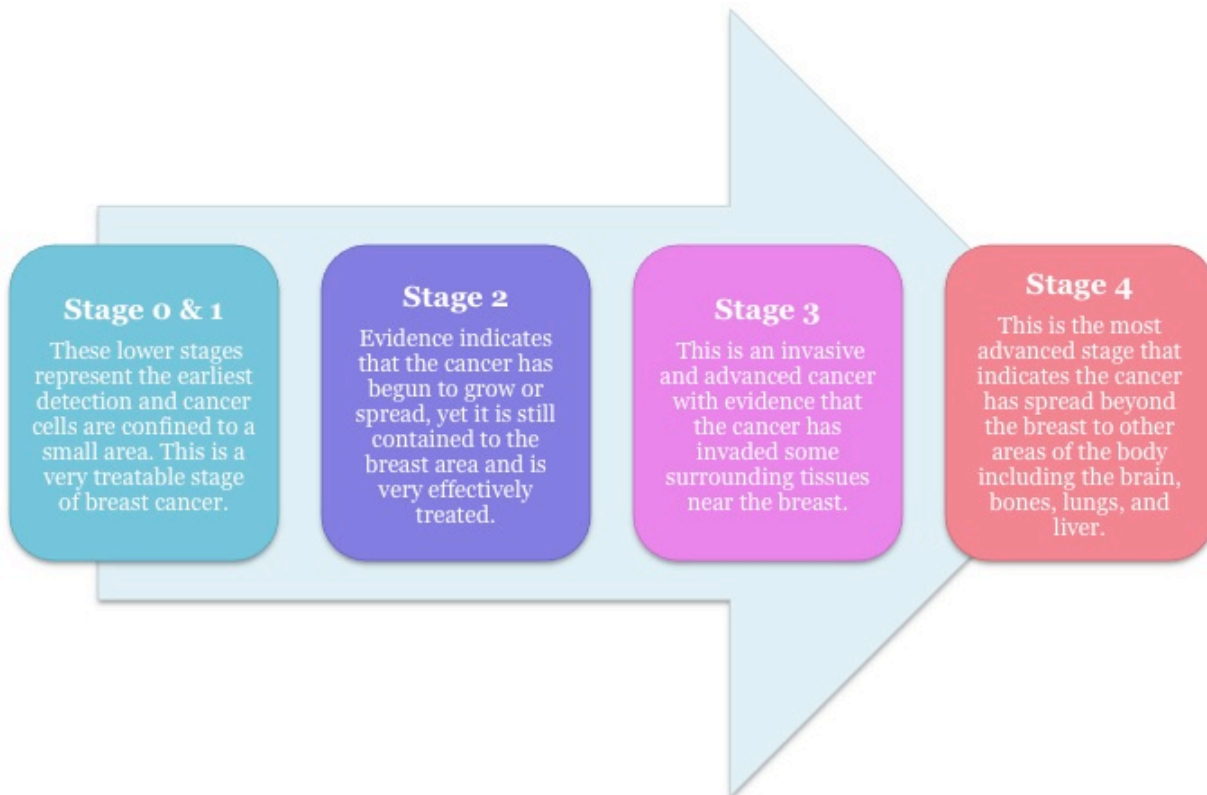


Source: *Cancer Prev Res*; 3(6) June, 2010

Exemestane. Developing an effective plan with your physician requires continued conversations about your own health needs and risk factors.

The Stages of Breast Cancer

A patient's breast cancer stage is determined by the size of the breast tumor, number of lymph nodes affected, and whether or not the cancer has metastasized to other parts of the body. Stages range from 0 (least severe) to 4 (most advanced). Diagnosing a patient's breast cancer stage will inform the rigor and extend of one's treatment options.



Genetic Testing and Breast Cancer

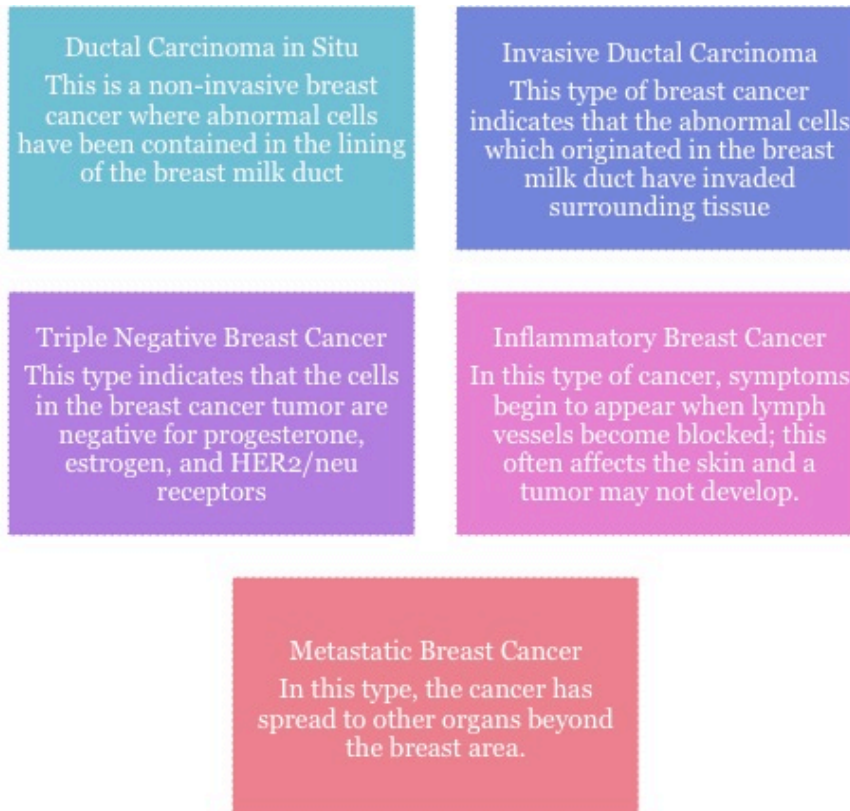
There are specific inherited mutations in the BRCA1 and BRCA2 genes that increase the risk of breast and ovarian cancers in women. Functioning BRCA1 and 2 genes produce tumor suppressor proteins that help repair damaged DNA, and therefore mutations in these genes could indicate a woman's greater susceptibility to certain cancers. Roughly 55-65% of women who inherit a harmful BRCA1 mutation and 45% of women who inherit a harmful BRCA2 mutation will develop breast cancer by age 70, compared to the 12% of women in the general population who will develop cancer at some point during their lives.

Now that genetic tests are available to screen for these types of mutations, more and more women are considering this as a viable option. However, as harmful BRCA1 and BRCA2 mutations are relatively rare in the general population, experts only recommend

testing for individuals whose family history indicates possible mutations. Certain familial patterns such as multiple breast and/or ovarian cancers within a family, two or more primary cancers in a single family member, cases of familial male breast cancer, and having Ashkenazi Jewish heritage are a few indicators that BRCA1 & 2 mutations may be present. Comprehensive testing costs, on average, \$3,340, but most insurance companies cover over 90% of the test.

Types of Breast Cancer

Breast cancer manifests itself in several different types such as:



Treatment and Survival

Once a patient's stage and type of breast cancer is diagnosed, treatment should begin. Tailoring treatments for patients is just as important as diagnosing the stage and type of cancer. Patients are categorized into low risk, intermediate risk, and high-risk patients.

The most common treatment for breast cancer is the surgical removal of the tumor and nearby margins. This treatment may include a lumpectomy, partial mastectomy, radial mastectomy, and reconstruction. Chemotherapy may be used to treat breast cancer for patients in the high-risk category. This treatment method uses a combination of drugs to destroy cancer cells or reduce the growth rate of cancerous cells. Radiation therapy uses high-energy rays to kill cancerous cells and can affect nearby cells only in the part of the body being treated with the radiation. Hormone therapy is used if the cancer cells have hormone receptors. Most types of hormone therapy either stop estrogen from

acting on breast cancer cells or lower estrogen levels within the body. Similarly, targeted therapy options use drugs to disrupt the growth of breast cancer cells.

Nearly every breast cancer treatment option has both immediate and latent side effects, and with the increasing survivorship rates, clinicians and patients must be cognizant of complications that could arise post-treatment.

Late Side-Effects of Breast Cancer Treatment:

- Lymphedema, a condition causing fluid retention and swelling, can be prevented by arm elevations, massaging, pressure garments, and physical therapy
- Congestive heart failure
- Infertility
- Menopausal symptoms
- "Chemobrain," a condition where patients suffer short term memory loss, decreased attention span, slower thinking, and lower resting brain activity, can be treated with brain exercises, following routines, rest, and focusing on one task at a time
- Angiosarcoma
- Fatigue
- Osteoporosis
- Uterine Cancer



With continued check-ups and healthy habits, many of these late side-effects can be avoided, as many breast cancer survivors continue to live healthy, normal lives.

Sources

1. Institute for Women's Health Research (October 2012) Forum Lecture Notes: **Update on Breast Cancer Prevention and Treatment, Presented by Virginia Kaklamani, MD, DSc, Assistant Professor, Northwestern University Feinberg School of Medicine, Director of Translational Breast Cancer Research at the Robert H. Lurie Comprehensive Cancer Center**

2. The National Breast Cancer Foundation, Inc. www.nationalbreastcancer.org

Author: Megan Castle, Program Coordinator, Women's Health Research Institute

Breast Cancer Myths Debunked

There are many myths circulating about breast cancer. Here are a few fictions you can get the real facts on:

1. Only women with a family history of breast cancer are at risk.

MYTH. While certain familial connections are related with breast cancer risk, nearly 70% of women diagnosed with breast cancer have no identifiable risk factors.

2. Most breast lumps are cancerous.

MYTH. Doctors encourage women to report *all* lumps discovered in the breast, but only 20% turn out to be cancerous lumps.

3. Breast cancer always expresses itself in the form of a lump.

MYTH. Women should be alerted to changes in the breast ranging from swelling, skin irritation, dimpling, nipple abnormalities, and discharge. Feeling a lump is only one indication of breast cancer (and even a lump could be benign), with other symptoms surfacing before a lump is even felt.

4. If you're at risk for breast cancer, there is little you can do but watch for the signs and symptoms.

MYTH. Women can be proactive in preventing breast cancer, even if they are at risk. Losing weight if a woman is obese, decreasing alcohol intake, quitting smoking, having regular mammograms and clinical examinations, and exploring chemoprevention treatments are all ways women can be proactive in prevention.

5. You cannot get breast cancer after a prophylactic mastectomy.

MYTH. There are women who do still contract breast cancer after a prophylactic mastectomy is performed. While after a prophylactic mastectomy, a woman's risk for developing breast cancer is reduced by nearly 90%, there is still a small chance that breast cancer may still develop.

Source: [Health Magazine](#)

INSTITUTE HAPPENINGS

November Monthly Forum: Dr. Janine Clayton, Director for the NIH Office of Research on Women's Health will be presenting at our monthly forum on November 6, 2013 from 12:30-1:30pm in the Hughes Auditorium of the Robert H. Lurie Medical Research Building at 303 E. Superior Street. Register soon on our institutional [website](#).

Menopause: Should you take hormone therapy during menopause? What's the latest research about its safety? Are there non-hormonal alternatives for managing hot flashes and other symptoms? Menopause and its management just got a lot less confusing with the launch of a new website, [menopausenu.org](#), that offers women a personalized approach to managing their symptoms and the latest information based on authoritative research. Created by the Women's Health Research Institute (WHRI) at Northwestern University, it can be viewed on a computer, tablet or smart phone.

Current Trials Available:

Transdermal Estradiol for the Treatment of Postpartum Depression

For more information about this research treatment study, please contact: The Asher Center, [Department of Psychiatry and Behavioral Sciences](#), Northwestern University Feinberg School of Medicine, (855) 99-ASHER.

You may receive up to \$100, plus items for your baby, for completing the study. Parking/bus fare provided.

Illinois Women's Health Registry

In virtually every medical discipline, there exist unanswered questions pertaining to women's health and well-being. However, as more women participate in research studies, finding answers to these difficult questions will become a reality.

The Illinois Women's Health Registry database will be used to assist investigators to better understand the relationship between environmental exposures, stress, health symptoms, health trends and disease by gathering data on large numbers of women.

[Enroll NOW!](#)

UPCOMING EVENTS

November 6, 2013, Monthly Forum, 12:30pm presented by Director of the NIH Office of Research on Women's Health, Dr. Janine Clayton

December 17, 2013, Monthly Forum, 12:00pm Recent Advance in Pelvic Floor Disorders in Women presented by Kimberly Kenton, MD, MS

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