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Third Edition

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HER2+ BREAST CANCER

A TREATMENT GUIDE FOR
PATIENTS AND THEIR FAMILIES

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INFORMATION
EQUALS HOPE



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I'm doing everything
in my power
**SO I CAN KEEP
DOING WHAT I LOVE.**

NERLYNX for
HER2+ breast cancer

Not an actual patient.

SELECT IMPORTANT SAFETY INFORMATION

- **Diarrhea.** Diarrhea is a common side effect of NERLYNX, but it can also be severe. You may lose too much body salts and fluid, and get dehydrated. When you start NERLYNX, your healthcare provider should prescribe the medicine loperamide for you during your first 2 months (56 days) of NERLYNX and then as needed. Be sure that your healthcare provider prescribes anti-diarrheals with NERLYNX. Anti-diarrheals must be started with the first dose of NERLYNX.
- **Liver problems.** Changes in liver function tests are common with NERLYNX. Your healthcare provider should do blood tests before you begin treatment, monthly during the first 3 months, and then every 3 months as needed during treatment with NERLYNX. Your healthcare provider will stop your treatment with NERLYNX if your liver tests show severe problems.
- **Before taking NERLYNX, tell your healthcare provider if you are pregnant or plan to become pregnant.** NERLYNX can harm your unborn baby. You should use effective birth control (contraception) during treatment and for at least 1 month after your last dose of NERLYNX.

Please see Brief Summary of the Patient Information on the following page or visit nerlynx.com for additional IMPORTANT SAFETY INFORMATION.

nerlynx[®]
(neratinib) tablets

THE POWER OF A TARGETED TREATMENT*



For people with early-stage HER2+ breast cancer, NERLYNX® (neratinib), taken after trastuzumab-based treatment, reduces the chance of your cancer recurring (coming back). In a clinical trial of 2,840 people, NERLYNX reduced the risk of cancer returning by 34% at 2 years. Recurrence is defined as the cancer coming back or resulting in death.†



For people with HER2+ metastatic breast cancer (cancer that has spread beyond the breast and nearby lymph nodes to other parts of the body), who have undergone treatment with 2 or more HER2-directed treatments for metastatic breast cancer, NERLYNX, taken with capecitabine (an oral chemotherapy), helps prevent the cancer from progressing, or spreading any further. In a clinical trial of 621 people, NERLYNX reduced the risk of cancer progressing by 24% and gave people a longer response to treatment compared with lapatinib plus capecitabine (median of 8.5 months compared to 5.6 months for those taking lapatinib [Tykerb®]).‡

*NERLYNX targets HER2+ cancer cells, but may also affect healthy cells.

†These are relative benefits. In absolute numbers, 94.2% of all people studied who were HER2+ and took NERLYNX had no return of cancer after 2 years, compared to the 91.9% of people on a placebo who had no return of cancer. After 5 years, 90.8% of all people studied who were HER2+ and HR+ and took NERLYNX had no return of cancer, compared to the 85.7% of people on a placebo who had no return of cancer.

‡The 8.5 and 5.6 months durations were calculated only from the percentage of people that responded to therapy (32.8% in the NERLYNX group vs 26.7% in the lapatinib group).

Talk to your doctor about treatment with NERLYNX for HER2+ breast cancer.

To learn more about how NERLYNX may help reduce your risk of breast cancer recurring or progressing, visit nerlynx.com.

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BRIEF SUMMARY OF PRESCRIBING INFORMATION

Read the Patient Information that comes with NERLYNX before you start taking it and each time you get a refill. There may be new information. The Patient Information does not take the place of talking with your doctor about your medical condition or treatment. Talk to your doctor if you have any questions about NERLYNX.

What is the most important information I should know about NERLYNX?

NERLYNX may cause serious side effects, including:

- **Diarrhea.** Diarrhea is a common side effect of NERLYNX, but it can also be severe. You may lose too much body salts and fluid, and get dehydrated. When you start NERLYNX, your healthcare provider should prescribe the medicine loperamide for you during your first 2 months (56 days) of NERLYNX and then as needed. Be sure that your healthcare provider prescribes anti-diarrheals with NERLYNX. Anti-diarrheals must be started with the first dose of NERLYNX. To help prevent or reduce diarrhea:
 - You should start taking loperamide with your first dose of NERLYNX.
 - Keep taking loperamide during the first 2 months (56 days) of NERLYNX treatment and then as needed. Your healthcare provider will tell you exactly how much and how often to take this medicine.
 - Your healthcare provider may also need to give you other medicines to manage diarrhea when you start treatment with NERLYNX. Follow your healthcare provider's instructions on how to use these anti-diarrheal medicines.
 - Always take anti-diarrheals exactly as your healthcare provider tells you.
 - While taking anti-diarrheals, you and your healthcare provider should try to keep the number of bowel movements that you have at 1 or 2 bowel movements each day.
 - Tell your healthcare provider if you have more than 2 bowel movements in 1 day, or you have diarrhea that does not go away.
- **Call your healthcare provider right away, as instructed, if you have severe diarrhea or if you have diarrhea along with weakness, dizziness, or fever.**
- After 2 months (56 days) of treatment with NERLYNX, follow your healthcare provider's instructions about taking loperamide as needed to control diarrhea

Your healthcare provider may change your dose of NERLYNX, temporarily stop or completely stop NERLYNX if needed to manage your diarrhea. See **"What are the possible side effects of NERLYNX?"** for more information about side effects.

What is NERLYNX?

- NERLYNX is a prescription medicine used alone to treat adults with early-stage human epidermal growth factor receptor 2 (HER2)-positive breast cancer **and** who have previously been treated with trastuzumab-based therapy.
- NERLYNX is also used with a medicine called capecitabine to treat adults with HER2-positive breast cancer that has spread to other parts of the body (metastatic) **and** who have received 2 or more anti-HER2 therapy medicines for metastatic breast cancer.

It is not known if NERLYNX is safe and effective in children.

Before taking NERLYNX, tell your healthcare provider about all of your medical conditions, including if you:

- have liver problems. You may need a lower dose of NERLYNX.
- are pregnant or plan to become pregnant. NERLYNX can harm your unborn baby. If you are a female who can become pregnant:
 - Your healthcare provider should do a pregnancy test before you start taking NERLYNX.
 - You should use effective birth control (contraception) during treatment and for at least 1 month after your last dose of NERLYNX.
 - Talk with your healthcare provider about forms of birth control that you can use during this time.
 - Tell your healthcare provider right away if you become pregnant during treatment with NERLYNX.
 - Males with female partners who can become pregnant should use effective birth control during treatment and for 3 months after your last dose of NERLYNX.
- are breastfeeding or plan to breastfeed. It is not known if NERLYNX passes into your breast milk. Do not breastfeed during treatment and for at least 1 month after your last dose of NERLYNX.

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements. Especially tell your healthcare provider if you take medicines used to decrease stomach acid, called proton pump inhibitors or PPIs. You should avoid taking these medicines during treatment with NERLYNX.

What are the possible side effects of NERLYNX?

NERLYNX may cause serious side effects, including:

See “What is the most important information I should know about NERLYNX?”

• **Liver problems.** Changes in liver function tests are common with NERLYNX. Your healthcare provider should do blood tests before you begin treatment, monthly during the first 3 months, and then every 3 months as needed during treatment with NERLYNX. Your healthcare provider will stop your treatment with NERLYNX if your liver tests show severe problems. Call your healthcare provider right away if you get any of the following signs or symptoms of liver problems:

- tiredness
- nausea
- vomiting
- pain in the right upper stomach-area (abdomen)
- fever
- rash
- itching
- yellowing of your skin or whites of your eyes

The most common side effects of NERLYNX when used alone include:

- diarrhea
- nausea
- stomach-area (abdomen) pain
- tiredness
- vomiting
- rash
- dry or inflamed mouth, or mouth sores
- decreased appetite
- muscle spasms
- upset stomach
- nail problems including color change
- dry skin
- swelling of your stomach-area
- nosebleed
- weight loss
- urinary tract infection

The most common side effects of NERLYNX in combination with capecitabine include:

- diarrhea
- nausea
- vomiting
- decreased appetite
- constipation
- tiredness/weakness
- weight loss
- dizziness
- back pain
- joint pain
- urinary tract infection
- upper respiratory tract infection
- swelling of your stomach-area
- kidney problems
- muscle spasms

These are not all of the possible side effects of NERLYNX. For more information, ask your Healthcare Provider.

Tell your doctor if you have any side effects that bother you or that does not go away. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

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nerlynx[®]
(neratinib) tablets

HER2+ BREAST CANCER

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Understanding the uniqueness of a HER2+ diagnosis

Like cancer itself, “breast cancer” is a broad label for a number of diagnoses based on certain characteristics. Your diagnosis of HER2+ breast cancer is so named because your breast cancer cells have too much of the human epidermal growth factor receptor-2 (referred to as HER2) genes or receptors. Now that you know what makes your breast cancer unique, it is important to understand what it means for you. Knowing as much as you can about your diagnosis will prepare you to make the important decisions ahead.

Explaining HER2 begins with discussing how cells typically function. Normal cells, which are the basic units of the body, grow, divide and die in a predictable and orderly way. Cancer cells are different. Cancer develops when genes in normal cells change or mutate. As cancer cells grow and divide, they form a disorganized mass composed of billions of abnormal cells called a tumor.

Cancer cells can penetrate and damage adjacent organs and tissues. They may also break away from a tumor and spread to other parts of the body through the bloodstream or lymphatic system, a process known as metastasis. When HER2+ or any type of breast cancer spreads to the lung, for example, it is still considered breast cancer and treated as such. It does not become lung cancer.

In HER2+ tumors, one of the changes or mutations that occurred is that too much of the HER2 protein or extra copies of the HER2 gene was found in the cancer cells. But what exactly is HER2, and why is it important?

Normal breast cells have two copies of the

HER2 gene. Sometimes, breast cells grow and reproduce in an uncontrolled way, producing too many HER2 genes. HER2 is also a protein receptor found on the surface of breast cells. To be diagnosed with HER2+ breast cancer, your tumor has too many HER2 genes or receptors or both. When breast cells have too many HER2 genes, it is referred to as HER2 amplification. When breast cells have too many HER2 receptors, it is known as HER2 overexpression (see Figure 1). This cancer can be aggressive, meaning it tends to grow and spread fast, but it can be treated with very effective targeted therapy drugs.

Knowing that your type of breast cancer is HER2+ is important because it guides your doctor in determining the treatment approach that is most likely to be successful. Targeted therapy in the form of anti-HER2 drugs target the HER2 receptor on breast cancer cells, binding to them and disrupting the uncontrolled growth cycle. The goal? To stop the growth of these cells and cure the patient.

A typical HER2+ treatment plan is as follows and is detailed in the following sections of this guide:

- **Neoadjuvant therapy:** drug therapy or, rarely, radiation therapy before surgery to shrink the tumor
- **Surgery:** removal of the tumor
- **Adjuvant therapy:** drug therapy or radiation therapy after surgery to eliminate any remaining cancer cells.
- **Extended adjuvant therapy:** additional drug therapy, which may be given in pill form, to further reduce the risk of the tumor(s) returning

If your cancer is estrogen receptor positive (ER+) and/or progesterone receptor positive (PR+) in addition to HER2+, you may also receive endocrine/hormone therapy, usually in pill form, for a number of years.

If you are familiar with the treatments other breast cancer survivors have had, you may notice that your HER2+ plan has an extra step: extended adjuvant therapy. It is a relatively

new safeguard doctors may recommend to lower the risk of the cancer coming back. Although this additional therapy does prolong the time you are in active treatment, which may feel like an inconvenience, this type of targeted therapy for HER2+ breast cancer has shown to improve survival rates dramatically.

What's next?

As you talk with your doctor about your treatment plan, consider seeking a second opinion from a doctor or cancer center with extensive experience treating HER2+ breast cancer. A second opinion will confirm or add to your recommended treatment plan. Doctors bring different training and perspectives to cancer treatment planning. One doctor may favor a treatment approach while another might suggest a different combination of treatments or a clinical trial. Pursuing a second opinion doesn't mean you question your doctor. This is your body and your life. You deserve to hear all your options, and your doctor should be supportive as you advocate for the best care possible.

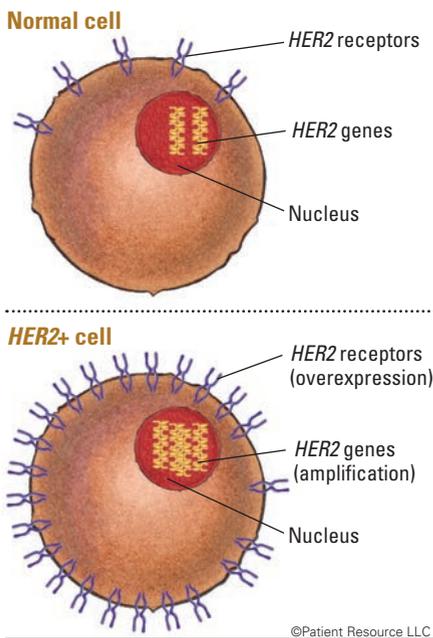
Surround yourself with support. Draw strength from the relationships in your life: your family, friends and spiritual community. Ask your nurse navigator for online or local resources so you can connect with other HER2+ breast cancer survivors. Many advocacy groups offer peer-to-peer support through programs that match the patient with a person who has had a similar diagnosis and treatment. Being able to talk with someone who knows what you are going through can be extraordinarily helpful.

Lastly, begin keeping a notebook of questions for your health care team and the answers. You and your loved ones will have questions from diagnosis through treatment and beyond, and it will be extremely helpful to have all this information in one place. ■

KEY TAKEAWAYS

- ▶ **HER2+ breast cancer cells contain too many HER2 genes and/or HER2 receptors, which means they respond well to anti-HER2 targeted therapy.**
- ▶ **Seek a second opinion. It's crucial to know all your options.**
- ▶ **You are not in this alone. It's important for your emotional well-being to surround yourself with support.**

FIGURE 1
BREAST CELLS



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Classification and staging help you plan your path forward



Once you share your diagnosis with others, you may be asked, “What’s your stage?” This section will help you understand staging, why your cancer received the stage it did and how it helps your managing physician develop the best treatment plan for you.

All types of breast cancer, including HER2+ breast cancer, are classified according to the tumor, node, metastasis (TNM) system developed by the American Joint Committee on Cancer (AJCC). Once classified, they are given a stage (see Tables 1 and 2).

Your stage is described using Roman numerals from 0 to IV and the letters A, B or C, if applicable, but it is so much more than a label. Determining your stage helps you and your doctor learn more about your cancer and how best to treat it.

At first glance, the classification and staging tables may be overwhelming. However, once you know your stage and locate the corresponding example in the accompanying breast cancer illustrations, it may be easier to understand what the tables mean for you.

The T classification categories are the same for both clinical and pathologic staging and provide information on the size and extent of the tumor within the breast. Clinical T (described as cT) refers to the tumor size estimate based on physical/clinical examination and breast imaging; pathologic T (described as pT) refers to the size of the tumor when it has been removed and measured in the pathology laboratory.

Clinical staging for the N category (cN) describes the location and bulkiness of lymph nodes (usually in the axilla, under the arm) that seem to be malignant (from spread of the breast cancer) upon physical examination. Location and extent of any cancerous lymph

nodes provide clues regarding the likelihood that the breast cancer might have spread to

other organs. The pathologic N category (pN) is determined postoperatively and describes how many lymph nodes are involved.

The M category indicates if the cancer has metastasized, or spread, to another part of the body beyond the breast and nearby lymph nodes.

TABLE 2
AJCC TNM SYSTEM FOR CLASSIFYING BREAST CANCER

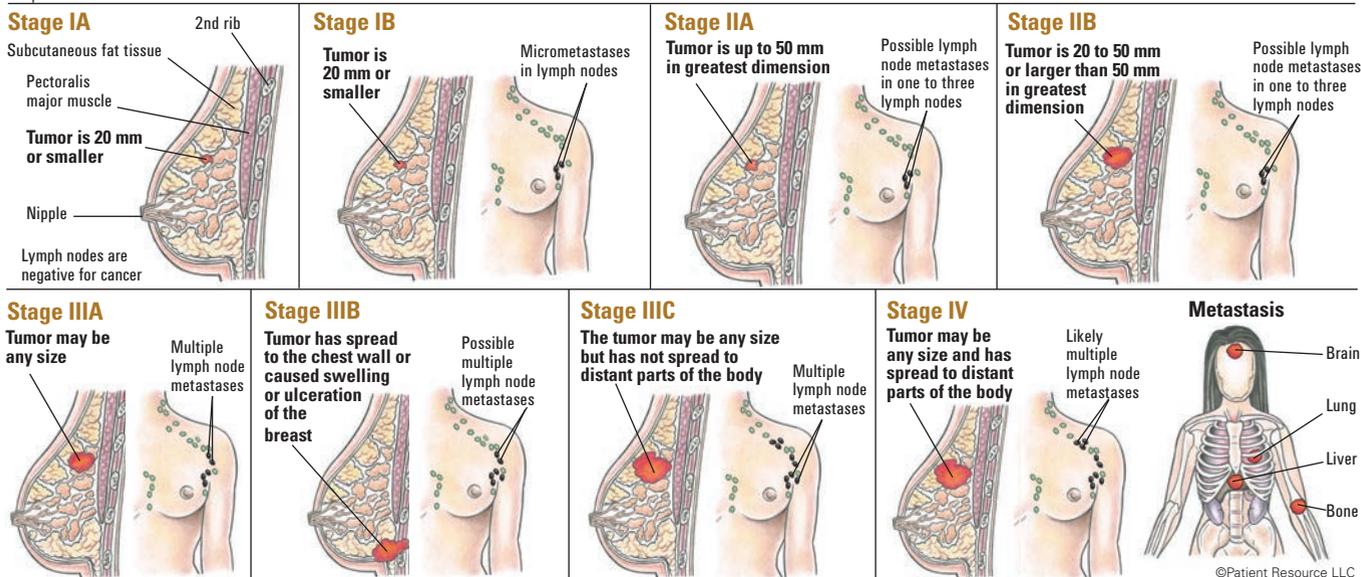
Classification	Definition
Tumor (T)	
TX	Primary tumor cannot be assessed.
T0	No evidence of primary tumor.
Tis (DCIS)	Ductal carcinoma in situ.
Tis (Paget)	Paget disease of the nipple NOT associated with invasive carcinoma and/or carcinoma in situ (DCIS) in the underlying breast parenchyma (tissue).
T1	Tumor ≤ (not more than) 20 mm in greatest dimension.
T1mi	Tumor ≤ (not more than) 1 mm in greatest dimension.
T1a	Tumor > (more than) 1 mm but ≤ (not more than) 5 mm in greatest dimension.
T1b	Tumor > (more than) 5 mm but ≤ (not more than) 10 mm in greatest dimension.
T1c	Tumor > (more than) 10 mm but ≤ (not more than) 20 mm in greatest dimension.
T2	Tumor > (more than) 20 mm but ≤ (not more than) 50 mm in greatest dimension.
T3	Tumor > (more than) 50 mm in greatest dimension.
T4	Tumor of any size with direct extension to the chest wall and/or to the skin (ulceration or macroscopic nodules).
T4a	Extension to the chest wall.
T4b	Ulceration and/or ipsilateral (on the same side) macroscopic satellite nodules and/or edema (including peau d'orange) of the skin that does not meet the criteria for inflammatory carcinoma.
T4c	Both T4a and T4b are present.
T4d	Inflammatory carcinoma.
Node (N)	
pNX	Regional lymph nodes cannot be assessed.
pN0	No regional lymph node metastasis identified or ITCs (isolated tumor cells) only.
pN0(i+)	ITCs (isolated tumor cells) only (malignant cell clusters no larger than 0.2 mm) in regional lymph node(s).
pN0(mol+)	Positive molecular findings by reverse transcriptase polymerase chain reaction (RT-PCR); no ITCs (isolated tumor cells) detected.
pN1	Micrometastases; or metastases in 1-3 axillary (armpit) lymph nodes; and/or clinically negative internal mammary nodes with micrometastases or macrometastases by sentinel lymph node biopsy.
pN1mi	Micrometastases (approximately 200 cells, larger than 0.2 mm, but none larger than 2.0 mm).
pN1a	Metastases in 1-3 axillary (armpit) lymph nodes, at least one metastasis larger than 2.0 mm.
pN1b	Metastases in ipsilateral (on the same side) internal mammary sentinel nodes, excluding ITCs (isolated tumor cells).
pN1c	pN1a and pN1b combined.
pN2	Metastases in 4-9 axillary (armpit) lymph nodes; or positive ipsilateral (on the same side) internal mammary lymph nodes by imaging in the absence of axillary lymph node metastases.
pN2a	Metastases in 4-9 axillary (armpit) lymph nodes (at least one tumor deposit larger than 2.0 mm).
pN2b	Metastases in clinically detected internal mammary lymph nodes with or without microscopic confirmation; with pathologically negative axillary (armpit) nodes.
pN3	Metastases in 10 or more axillary (armpit) lymph nodes; or in infraclavicular (below the clavicle) (Level III axillary) lymph nodes; or positive ipsilateral (on the same side) internal mammary lymph nodes by imaging in the presence of one or more positive Level I, II axillary lymph nodes; or in more than three axillary lymph nodes and micrometastases or macrometastases by sentinel lymph node biopsy in clinically negative ipsilateral internal mammary lymph nodes; or in ipsilateral supraclavicular (above the clavicle) lymph nodes.
pN3a	Metastases in 10 or more axillary (armpit) lymph nodes (at least one tumor deposit larger than 2.0 mm); or metastases to the infraclavicular (below the clavicle) (Level III axillary) lymph nodes.
pN3b	pN1a or pN2a in the presence of cN2b (positive internal mammary nodes by imaging); or pN2a in the presence of pN1b.
pN3c	Metastases in ipsilateral (on the same side) supraclavicular (above the clavicle) lymph nodes.
Note: (sn) and (f) suffixes should be added to the N category to denote confirmation of metastasis by sentinel node biopsy or FNA/core needle biopsy respectively, with NO further resection of nodes.	
Metastasis (M)	
M0	No clinical or radiographic evidence of distant metastases.
cM0(i+)	No clinical or radiographic evidence of distant metastases in the presence of tumor cells or deposits no larger than 0.2 mm detected microscopically or by molecular techniques in circulating blood, bone marrow, or other nonregional nodal tissue in a patient without symptoms or signs of metastases.
cM1	Distant metastases detected by clinical and radiographic means.
pM1	Any histologically proven metastases in distant organs; or if in nonregional nodes, metastases greater than 0.2 mm.

TABLE 1
STAGES OF BREAST CANCER

Stage	TNM Classification
0	Tis, N0, M0
IA	T1, N0, M0
IB	T0 or T1, N1mi, M0
IIA	T0 or T1, N1, M0 // T2, N0, M0
IIB	T2, N1, M0 // T3, N0, M0
IIIA	T0-T3, N2, M0 // T3, N1, M0
IIIB	T4, N0-N2, M0
IIIC	Any T, N3, M0
IV	Any T, Any N, M1

Used with permission of the American Joint Committee on Cancer (AJCC), Chicago, Illinois. The original and primary source for this information is the AJCC Cancer Staging Manual, Eighth Edition (2017) published by Springer Science+Business Media.

STAGES OF BREAST CANCER



Additionally, many other important factors are considered (and documented on your pathology report) before you receive your final stage: tumor grade; biomarkers, including your human epidermal growth factor receptor-2 (*HER2*), estrogen receptor (*ER*) and progesterone receptor (*PR*)

status; molecular and genetic changes in cancer tissue; and results from multi-gene panels such as MammaPrint, Oncotype DX, PAM 50 (Prosigna) and Breast Cancer Index.

After receiving your classification and stage, ask your doctor to write it down for

you and provide you with a copy of your pathology report. Request explanations for anything that is not clear. Understanding as much as you can about your diagnosis overall will make you a more informed, confident partner as you move forward to treatment. ■

Fertility preservation: Make this plan a priority



➔ **Is becoming a mother** or having more children something you want in the future? If so, you may need to plan for it right now. That's because some types of cancer treatment may make it harder to become or stay pregnant.

Bring up this topic while you're discussing treatment options, even if your doctor doesn't. You can also ask for a referral to a reproductive specialist. This person will ask about your diagnosis and treatment plan, as well as your wishes for pregnancy. Then you can consider how you might preserve your fertility before starting cancer treatment, if possible.

How treatment may affect your ability to have a baby

Breast cancer drugs may change the number and health of your eggs. In some cases, even just one treatment can impair fertility. Ask your doctor how your treatment plan might affect your fertility and whether this will last. Some cancer drugs can make your period stop for a brief time. Sometimes it is permanent.

Ways to preserve your fertility

Discuss ways to preserve your fertility with your doctor or reproductive specialist, and find out if any are covered by insurance. Keep in mind that some of the options may delay your cancer treatment, so it is very important to consider the status of your health and consult with your doctor before making decisions.

- ▶ **Egg freezing.** A fertility expert collects some of your eggs. The eggs are frozen and stored for later use before being fertilized.
- ▶ **Embryo freezing.** A fertility expert collects some of your eggs and fertilizes them with sperm from your partner or donor. Then your embryos are frozen and stored for future use.
- ▶ **Gonadal shielding.** If you have radiation therapy, a technician can use a shield to protect your reproductive organs.
- ▶ **Ovarian transposition (oophoropexy).** This is a surgical procedure that repositions your ovaries. This helps protect them from damage during radiation therapy.
- ▶ **Clinical trials.** Ask your doctor if you could be in a fertility-related clinical trial. This type of trial, which is not open to the general public, may increase your options.

Talk with your doctor about when you can safely try to become pregnant. Meet with your reproductive specialist or endocrinologist to check your fertility. If your period has not returned, tests can find out why. If pregnancy remains a challenge, discuss with your doctor other options for becoming a parent.

Making choices about pregnancy before you're ready can be stressful, and you may feel unprepared to make this type of life decision. Give it serious thought, learn about your options and consider talking with a licensed counselor. All these things may help you make the decision that's right for you.

Accurate testing guides HER2+ treatment decision making

As with other breast cancers, diagnosing HER2+ breast cancer begins with imaging tests, a biopsy and blood tests. But your doctor will also perform genomic tests on the tumor to determine if your breast cancer is HER2+. Knowing your HER2 status allows your doctor to choose the best treatment plan for you (see *Treatment Options*, page 10).

Every woman's healthy breast cells contains two copies of the human epidermal growth factor receptor-2 (HER2) gene. They make HER2 proteins, which are receptors on the surface of a cell. Together, the genes and protein receptors help manage how a breast cell grows, divides and repairs itself. When the breast cell contains more than two copies of the HER2 gene or there are too many HER2 receptors, cancer can develop.

All cancers are caused by genetic mutations, which are changes that occur in DNA. In HER2+ breast cancer, the HER2 gene mutates and begins making too many copies of itself, which is known as a HER2 gene amplification. A mutated HER2 gene can also produce too many protein receptors on the surface of a cell, known as HER2 protein overexpression. In either case, tumor status would be considered HER2+.

Determining HER2 status

With breast cancer, both genomic and genetic testing may be performed. Genomic testing examines a cancer's genes, which may reveal mutations that could indicate the cancer's behavior, how aggressive it might be and if it will metastasize (spread). This type of testing is used most to determine HER2 status.

Genomic testing is also used to detect biomarkers, which are substances such as genes or molecules that can be measured in the blood, plasma, urine, cerebrospinal flu-

id or other body fluids or tissues. Estrogen receptor (ER), progesterone receptor (PR) and HER2 are also considered biomarkers in breast cancer. These biomarkers are produced by cancer cells and are used to diagnose HER2+ breast cancer. They are also found on other cells of the body.

Two possible tests may be used to detect the HER2 biomarker. These tests are performed on biopsied tumor tissue.

- **Immunohistochemistry (IHC)** testing measures the amount of HER2 proteins on the surface of breast cancer cells. Based on the number of proteins, a score is given to determine if the cancer is HER2+. It uses a scale of 0 to 3+ with 0 meaning the cancer is HER-, and 3+ meaning the cancer is HER2+. If the score is 2, another test such as the FISH test (see below) may be used or you may send your results to another cancer center for a second opinion. This test is typically performed first because the results can be returned quicker.
- **Fluorescence in situ hybridization (FISH)** testing uses fluorescent dye that attaches to certain pieces of DNA in a tissue sample. This test evaluates HER2 gene amplification. If the sample is positive for HER2, the cells will change color and glow under a microscope. This test may be performed if the results of the IHC testing were inconclusive or in doubt. The results take longer to return than for IHC testing, but this test is considered more accurate.

Doctors will test for ER and PR status at the same time as HER2. If the cancer is ER+ or PR+, it is driven by hormones. As a result, hormone (endocrine) therapy designed to block the hormones that feed the cancer may be used. The cancer is considered triple positive breast cancer if it is ER+, PR+ and HER2+.

Your doctor may also test for other biomarkers that may be treated with targeted therapy, which is designed to treat a specific mutation. Unlike chemotherapy, targeted therapy is designed to affect only cancer cells. Genetic mutations that have been found in HER2+ cancers include BRAF, EGFR, KIT and PIK3CA. Research is ongoing to find

more mutations that may influence how HER2+ breast cancer is treated.

The role of genetic testing

Genetic mutations that cause cancer can be inherited from your parents' germ cells (egg and sperm cells that form an embryo), or they can be acquired, which means they develop over time. Inherited mutations are known as germline mutations, and acquired mutations are known as somatic mutations.

Although HER2+ breast cancer is an acquired mutation, genetic testing may still be performed to determine if you carry a gene that raises the risk for developing cancer, especially if there is a history of certain cancers in your family. The breast cancer 1 (BRCA1) and breast cancer 2 (BRCA2) genes are the most commonly tested for, but your doctor may include others.

Identifying hereditary cancers through genetic testing allows people at an increased risk to be monitored more closely for the development of cancer. Having an inherited mutation doesn't mean you will automatically develop cancer; it only means the risk is increased and you can explore ways to lower the risk, such as preventive surgery, medication, frequent screenings or lifestyle changes.

Doctors look for certain risk factors that may indicate a hereditary cancer is possible:

- Family history of any cancer, including rare cancers and male breast cancer
- Cancer at an early age
- Multiple cancers in one relative
- Ancestry, such as Ashkenazi Jewish heritage

Choosing to get genetic testing is a decision that affects your entire family. Knowing and sharing the information could help them be screened and monitored closely if they have a gene mutation associated with cancer. Preventing or detecting a cancer early offers the best chance of a successful treatment outcome. ■

[KEY TAKEAWAYS]

- ▶ The terms "genetics" and "genomics" have different meanings.
- ▶ Genetic testing looks for inherited mutations that may increase your risk for developing cancer.
- ▶ Genomic testing is performed on tumors to learn more about the cancer.
- ▶ Genomic testing results may influence how breast cancer is treated.

What are biomarkers?

▶ Cancer is caused by mutations in your genes, which are pieces of DNA. Research has found several specific genetic mutations that lead to breast cancer. Doctors can test for these mutations as part of the diagnostic process by looking for biomarkers, which are the molecules produced by the cancer cells or other cells in the body in response to cancer.

Make the most of your life by choosing to live with intent

Living with intent means living purposefully, and that is something you can do in spite of your diagnosis. Not long ago, an advanced cancer diagnosis held a much different outlook. Today, advances in treatment strategies and a concentrated effort on quality of life are helping many people enjoy long and full lives.

Whether your cancer was diagnosed as metastatic de novo (from the beginning) or it was restaged after spreading, it has changed your reality. You are now living with breast cancer and all that goes along with it, including continued treatment, ongoing monitoring and side effect management. Taking an active role will give you purpose and offer some much-needed control in your life.

Continued treatment. Your treatment goal has transitioned from cure to managing the disease and symptoms. How you do that and what you hope to accomplish is something you and your doctor must agree upon. Be sure to discuss your doctor's plan if your breast cancer becomes resistant to a treatment and begins to grow again. If that happens, a different drug therapy may be an option.

Your role: Make a list of "must haves." These are things that bring you happiness and joy and that you're not willing to do without if at all possible. Talk with your doctor about how to structure your treatment plan around them. Examples of "must haves" include spending more time with your children, working, traveling, living pain-free and attending important events, such as birthdays and graduations. If necessary, ask your doctor about the option of a treatment vacation to give yourself a break. This means stopping therapy for a little while to free you of side effects so you can feel more like yourself.

Is Scanxiety Real?

It most certainly is.

Scanxiety is the anxious feeling you have while waiting for your next blood and imaging test results. Frequent monitoring is now part of your life, making it important to manage your scanxiety. Try these suggestions, and ask your nurse navigator for others.

- ▶ Stay focused on activities you enjoy.
- ▶ Meditate or try another relaxation technique.
- ▶ Exercise daily.
- ▶ Share your feelings with a support group, trusted friend or therapist.
- ▶ Give yourself permission to worry. You're strong, but you're also human.
- ▶ Contact your doctor if your anxiety level disrupts your daily life.

Ongoing monitoring. Living with advanced breast cancer includes keeping track of the cancer. Detecting any changes in the disease or in its response to treatment early enables them to be addressed immediately. Your medical team will work with you to determine the best routine physical exams and blood and imaging tests for you and how often they should be done.

The most commonly used imaging tests for monitoring advanced cancer are bone scans, computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography (PET) and X-rays. They measure the size of an existing tumor or metastasis. Tumor markers may be tested periodically to determine if the cancer is responding to therapy or if it has spread. How you feel is also important and may signal advancement of the cancer, assuming it is not a side effect from your treatments.

Your role: Be an active participant in your own care by making and keeping these appointments. Although more frequent appointments may be inconvenient, they are necessary because they allow your doctor to address any changes or concerns right away. It's also important to communicate between regularly scheduled appointments. The detailed information you share can be vital for monitoring.

Symptom and side effect management.

The objective is to live your best life possible, and that can be difficult if diarrhea keeps you homebound, for example, or if you are so fatigued you can't get out of bed.

Your role: Tell your health care team immediately when symptoms or side effects begin so you can work together to manage them before they become debilitating. Include how you're feeling physically, mentally and emotionally. You may experience scanxiety, which is exactly what it sounds like: anxiety about upcoming scans or tests.

Healthy choices. Leading a well-balanced lifestyle may help you tolerate treatment better, lower the risk of a recurrence or the risk of other chronic diseases, and help protect against secondary cancers. Eating nutritious

What is metastasis?

It is cancer cells that spread from where they began to another part of the body. After traveling through the blood or lymph system, they can form a new tumor in other organs or tissues, such as the bone, brain, liver and lungs. The new tumor is the same type of cancer as the primary tumor. Breast cancer cells that spread to the brain are still breast cancer cells, not brain cancer cells.

foods, practicing portion control and increasing physical activity are good strategies.

Your role: This can be more difficult than you expect. Create a plan to help you stick to your healthy approach. Work with your health care team or a nutritionist to plan meals and identify smart choices. Accountability is key, especially with exercise. Get a buddy or sign up for an in-person or online class.

A long-term plan. When you're faced with an advanced cancer diagnosis, you have many sensitive issues to consider, such as who will take care of your children if necessary, what to do if you choose to stop treatment and ways to ensure things aren't left unsaid to your loved ones. A big priority is making sure your legal and financial affairs are in order.

Your role: This is really all about what you want, but it is crucial to understand you're not expected to make these decisions alone. Include your loved ones. Talk with your doctor about the likely course of your disease, and take advantage of available supportive care services (see *Side Effects*, page 14). Also, this is a good way to take control. Planning for the future is something people don't usually do very well. You must, however, so things are handled the way YOU want them to be.

Topics to discuss with your doctor during each visit:

- Right now I am most worried about ...
- This is important to me ...
- I hope for ...

As you make plans, don't postpone joy. Commonly patients delay vacations and achieving special milestones, believing they should wait until they are sicker to justify going. That's a mistake. Do things now while you still feel well enough to actually enjoy them. Don't forget to talk with your doctor about a chance to have a treatment vacation. ■

Multiple therapies offer new hope for treating HER2+ breast cancer

Approval of anti-HER2 therapies in 1998 changed how this cancer is treated, offering many people an improved prognosis. As new advances for treating HER2+ breast cancer continue to be introduced, many people with this aggressive subtype continue to be hopeful.

You'll work closely with your doctor to develop a treatment plan, providing input about things that are important to you. Together, you will define the goals of treatment and discuss your expectations for your quality of life.

To further personalize your treatment plan, your doctor will consider your age, general health and menopausal status, size of the tumor, its biomarker status (HER2, ER, PR), stage and, for some patients, genetic markers such as BRCA1 (breast cancer 1) and BRCA2 (breast cancer 2) mutations. Your doctor may adjust your treatment if your cancer becomes resistant or if it recurs (returns).

About cancer treatment

Your treatments will be either local or systemic. Local treatments target specific areas of the body and include surgery and radiation therapy. Systemic treatments, including drug therapies such as chemotherapy, targeted therapy and hormone therapy, travel throughout your body. Drug therapies can be given orally or intravenously (IV) through a vein in your arm or through a port. Many people have a port placed so they can receive the medicine without repeatedly being stuck with a needle or damaging their veins. A port is surgically inserted under the skin in the upper chest area or arm to gain easy access to veins (see Figure 3).

Treatments are described by when they're given. Before surgery, your doctor may choose to treat your breast cancer

with targeted therapy, chemotherapy or radiation therapy. This is called neoadjuvant treatment and may be used to shrink a tumor so it can be more easily or safely removed with surgery. Often, neoadjuvant therapy is offered so that you might have more surgical options, including breast-sparing treatment (lumpectomy and breast irradiation therapy). It may show how your tumor responds to certain drugs and even help inform the need for additional treatment postoperatively.

Treatment given after surgery is known as adjuvant therapy. Whether delivered before or after surgery, an important goal of systemic therapy is to destroy breast cancer cells that may be hiding in other organs of the body, such as the liver, lungs, bones or brain. These hidden cancer cells, called micrometastatic disease, are usually too small to detect with laboratory testing or imaging studies. Delivering carefully selected systemic therapy to appropriate patients can often completely eliminate micrometastatic disease and is, therefore, extremely important as a partner with surgery for breast cancer in helping a patient become disease-free.

Some patients will be candidates for extended adjuvant therapy, which is designed to further reduce the risk of the cancer returning.

HER2+ breast cancer treatments

Following are commonly prescribed treatment options.

Surgery is often the first treatment used for early-stage HER2+ breast cancers.

A **lumpectomy** is considered to be breast-conserving or breast-sparing because it removes the tumor along with a small margin of normal-appearing tissue around it (see Figure 1). It is used for early-stage breast cancers detected as small tumors, including Stages 0, I and II.

Lumpectomy is usually followed by breast radiation treatments, which are designed to kill microscopic cancer cells hiding in other parts of the breast. If your tumor is relatively small and you wish to spare as much of your breast as possible, this surgical plan may be an option. Some patients are considered to be poor candidates for a breast-conserving lumpectomy because of abnormalities seen on their breast imaging (mammogram or ultrasound) or because of the inability to receive radiation treatment. It is also important that you discuss the likely cosmetic outcome of breast-conserving surgery with your doctor because surgery and radiation can cause some alteration to the shape of the breast.

A **mastectomy** involves removal of the entire breast and may be the preferred operation for patients with larger tumors, especially when they occur in a smaller breast (see Figure 2). Several types of mastectomy exist, including total mastectomy and modified radical mastectomy. Total mastectomy is the surgical removal of the entire breast without removing muscle. A modified radical mastectomy means that the total mastectomy is being performed along with removal of a block of underarm/axillary lymph node tissue (axillary dissection).

MEDICATION ADHERENCE | Taking charge of your treatment

» **Most cancer medications** were once available only intravenously (through an IV) with a weekday appointment at a hospital, clinic or doctor's office. Today, an increasing number of cancer treatments are oral therapies (pills). Many people prefer the at-home option of oral therapy over IV therapy — no appointments or wait times, no hassles with transportation or parking and no needle sticks.

Though oral therapies offer great convenience, they also put the responsibility on you for taking them exactly the way your doctor instructs. Taking the right drug in the right dose at the right time — every time — for as long as prescribed is referred to as medication adherence.

Set yourself up to succeed by making sure you fully understand instructions for how and when to take your medications. Tracking each dose, including missed doses, and detailing any side effects is crucial. Many types of medication reminders and organizers are available. These range from setting an alarm clock and a phone alarm to wearing a vibrating wristwatch and downloading a smartphone app.

Explore the options and choose those most likely to work for you.

You may be tempted to stop taking your oral therapy to avoid uncomfortable side effects, but even small changes to your regimen can disrupt your treatment and affect its outcome. Most cancer therapies are designed to maintain a specific level of drugs in your system for a certain time based on your cancer type and stage, your overall health, previous therapies and other factors. Talk with your doctor about options for managing any symptoms or side effects.

To keep the importance of medication adherence top of mind, remember: You're not merely taking a pill, you're taking control of a key part of your cancer treatment.

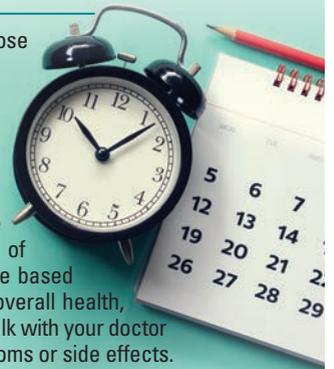


FIGURE 1
LUMPECTOMY AND AXILLARY SURGERY

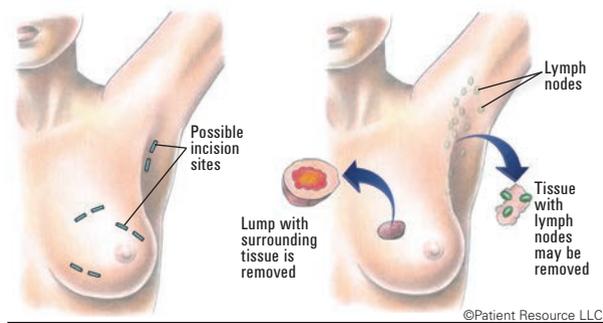
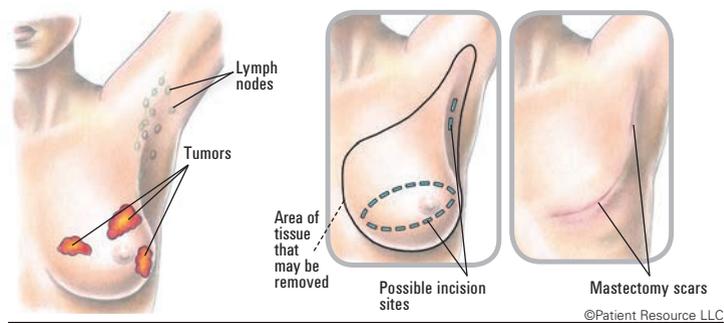


FIGURE 2
MASTECTOMY



At the end of the procedure, the surgeon will likely place drains into the area to collect fluid from the breast region. The incision will then be closed, and the area will be covered by a bandage. Your health care team will give you information for incision and drain care, if applicable.

Most mastectomy patients are candidates for breast reconstructive surgery by plastic surgeons, which often is performed immediately after the mastectomy during the same procedure. Mastectomy patients undergoing immediate reconstruction may be eligible for enhanced cosmetic approaches, such as skin-sparing or nipple-sparing mastectomy. After the incisions have healed, outpatient radiation treatment to the breast may be necessary for cases of high-risk breast cancer.

Chronic nerve pain, known as post-mastectomy pain syndrome (PMPS), may occur. The most common areas to feel this pain are in the chest, armpit and/or arm. Symptoms of PMPS include tightness, burning, tingling or itching in these areas. In addition, the surgical site may also have numbness or may be extra sensitive. Tell your doctor about your pain or disability to ensure your PMPS is managed as effectively as possible. PMPS will not go away without treatment.

Another possible side effect from a mastectomy is phantom pain. Your brain may treat your mastectomy site as if the breast were still present. You may feel nipple or breast pain that is temporary and can linger for a long time. Over time, the brain adjusts to the absence of the breast.

Reconstructive procedures may be an option for many breast cancer patients (see *Reconstruction*, page 16).

Lymph node surgery is usually necessary to either stage the cancer or to control cancer that is known to have spread to the nodes. The underarm (axilla) is the most important location for management of lymph nodes in breast cancer patients as it is the most common site of spread of breast cancer.

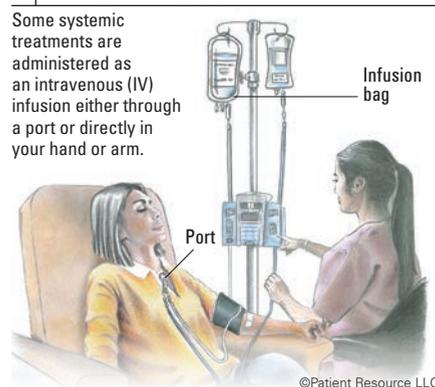
Most women will undergo an initial staging procedure of their lymph nodes at the same time as their breast surgery. This staging procedure is called a sentinel lymph node biopsy. If the sentinel nodes contain a tumor, sometimes a more extensive operation to remove additional tissue from the underarm may be necessary, and this is called an axillary lymph node dissection (see Figure 1). In some circumstances after a lumpectomy, if the patient is receiving radiation therapy and systemic therapy after surgery, no further axillary surgery is recommended even when there are metastases in the sentinel node. Some patients will have cancerous axillary lymph nodes detected by a needle biopsy performed prior to their breast surgical procedure. If a needle biopsy reveals a metastatic lymph node, then neoadjuvant (preoperative) chemotherapy may be recommended, and if the neoadjuvant chemotherapy is successful in clearing/killing the axillary lymph node disease, then the axillary lymph node dissection may be avoided.

For metastatic cancer, surgery typically is used only to prevent or treat symptoms or complications.

Targeted therapy is systemic therapy that uses drugs or other substances to identify and attack primarily cancer cells. Targeted therapy drugs that specifically treat *HER2+* breast cancer are known as anti-*HER2* drugs, or *HER2*

FIGURE 3
SYSTEMIC THERAPY

Some systemic treatments are administered as an intravenous (IV) infusion either through a port or directly in your hand or arm.



inhibitors. These target and attach to specific parts of this type of cancer cell to interfere with or stop its growth. Some targeted therapy drugs are oral medications given in pill form, and others are given intravenously (IV) into a vein in your arm. Some may be given alone or in combination with other drug therapies.

This type of treatment may be used as neoadjuvant therapy, adjuvant therapy or extended adjuvant therapy.

Your doctor may prescribe more than one type of *HER2* inhibitor based on your diagnosis. It is important to be aware that during your treatment, your doctor may feel the need to periodically change your regimen to keep it working most effectively for you.

Chemotherapy drugs stop the growth of cancer cells either by killing them or preventing them from dividing and growing. For early-stage *HER2+* breast cancer, chemotherapy may be given as a combination of two or three drugs together or one after the other. For metastatic *HER2+* breast cancer, chemotherapy is often combined with other anti-*HER2* drugs.

Chemotherapy may be given as neoadjuvant therapy or adjuvant therapy. When given before surgery, it may be used to shrink a tumor so it can be surgically removed or to reduce the tumor's size to allow for a lumpectomy rather than a mastectomy. It may also permit you to avoid having an axillary dissection if nodal disease is eradicated. Neoadjuvant chemotherapy also has an advantage of helping your doctor determine how well the chemotherapy drugs work against the tumor. Adjuvant chemotherapy is given to destroy cancer cells that may remain after surgery, some of which may be too small to be detected with laboratory testing or imaging studies.

Hormone therapy, also known as endocrine therapy, may be included in your treatment for *HER2+* breast cancer if your disease is also estrogen receptor positive (*ER+*) or progesterone receptor positive (*PR+*). Hormone

therapy treats these types of breast cancer by either lowering the amount of estrogen in your body or by blocking the hormone receptors on the cancer cells. Many types of hormone therapy drugs are available.

Radiation therapy uses high-energy radiation to destroy cancer cells and shrink tumors. It may be necessary along with surgery regardless of whether your tumor is *HER2+*. Some people with localized disease or bone pain that does not lessen with chemotherapy may receive it to specific parts of the body.

Radiation therapy is usually recommended after a lumpectomy to destroy any cancer cells that may remain hidden in normal-appearing breast tissue. Research shows that women with a small tumor who have radiation therapy after a lumpectomy live as long as those who have a mastectomy. Radiation therapy is sometimes necessary after a mastectomy and is typically recommended for individuals at high risk for cancer recurrence on the chest wall, such as women with cancer in multiple axillary lymph nodes or a large cancer.

The most common type of radiation therapy, external-beam radiation therapy (EBRT), is delivered from an external machine.

Internal radiation, or brachytherapy, may also be used either alone or in combination with EBRT for lumpectomy patients. Brachytherapy involves placing radioactive seeds through a catheter into the breast to deliver radiation directly to the area where the tumor was removed.

Clinical trials are medical research studies that may offer access to leading-edge treatments not yet widely available. Sometimes

COMMONLY USED CHEMOTHERAPY MEDICATIONS

- ▶ capecitabine (Xeloda)
 - ▶ carboplatin (Paraplatin)
 - ▶ cisplatin
 - ▶ cyclophosphamide
 - ▶ docetaxel (Docefrez, Taxotere)
 - ▶ doxorubicin (Adriamycin)
 - ▶ epirubicin (Ellence)
 - ▶ eribulin (Halaven)
 - ▶ fluorouracil – also known as 5-FU
 - ▶ gemcitabine (Gemzar)
 - ▶ ixabepilone (Ixempra)
 - ▶ liposomal doxorubicin (Doxil)
 - ▶ paclitaxel (Taxol)
 - ▶ protein-bound paclitaxel (Abraxane)
 - ▶ vinorelbine (Navelbine)
- As of 9/2/20*

COMMONLY USED HORMONE THERAPY MEDICATIONS

- ▶ anastrozole (Arimidex)
 - ▶ ethinyl estradiol
 - ▶ exemestane (Aromasin)
 - ▶ fluoxymesterone
 - ▶ fulvestrant (Faslodex)
 - ▶ goserelin (Zoladex)
 - ▶ letrozole (Femara)
 - ▶ leuprolide (Lupron)
 - ▶ megestrol acetate (Megace)
 - ▶ tamoxifen
 - ▶ toremifene (Fareston)
- As of 9/2/20*

clinical trials are a first-line treatment option. Ask your doctor if you should consider this valuable option as a first-line treatment or at any other time during your treatment.

Resistance to treatment occurs when breast cancers stop responding to therapy and begin to grow again. In *HER2+* breast cancer, this has been reported with some types of chemotherapy and targeted therapy. A different drug may be an option. Research is ongoing to test drug combinations, new drugs and the sequence of prescribing drugs to address drug resistance. ■

COMMONLY USED TARGETED THERAPY MEDICATIONS

- ▶ ado-trastuzumab emtansine (Kadcyla)
 - ▶ fam-trastuzumab deruxtecan-nxki (Enhertu)
 - ▶ lapatinib (Tykerb)
 - ▶ neratinib (Nerlynx)
 - ▶ pertuzumab (Perjeta)
 - ▶ trastuzumab (Herceptin)
 - ▶ trastuzumab-anns (Kanjinti)
 - ▶ trastuzumab-dkst (Ogivri)
 - ▶ trastuzumab-dttb (Ontruzant)
 - ▶ trastuzumab-pkrb (Herzuma)
 - ▶ trastuzumab-qyyp (Trazimera)
 - ▶ trastuzumab and hyaluronidase-oysk (Herceptin Hylecta)
 - ▶ tucatinib (Tukysa)
- As of 9/2/20*

SOME COMBINATION THERAPIES

- ▶ ACTH (doxorubicin, cyclophosphamide, paclitaxel, trastuzumab)
 - ▶ ACTHP (doxorubicin, cyclophosphamide, paclitaxel, trastuzumab, pertuzumab)
 - ▶ capecitabine (Xeloda) with docetaxel (Docefrez, Taxotere)
 - ▶ docetaxel (Docefrez, Taxotere) with doxorubicin (Adriamycin) and cyclophosphamide
 - ▶ gemcitabine (Gemzar) with paclitaxel (Taxol)
 - ▶ ixabepilone (Ixempra) with capecitabine (Xeloda)
 - ▶ lapatinib (Tykerb) with capecitabine (Xeloda)
 - ▶ lapatinib (Tykerb) with letrozole (Femara)
 - ▶ neratinib (Nerlynx) with capecitabine (Xeloda)
 - ▶ pertuzumab (Perjeta) with trastuzumab (Herceptin) and chemotherapy
 - ▶ pertuzumab (Perjeta) with trastuzumab (Herceptin) and docetaxel (Taxotere)
 - ▶ pertuzumab, trastuzumab and hyaluronidase-zzxf (Phesgo)
 - ▶ TCH (docetaxel, carboplatin, trastuzumab)
 - ▶ TCHP (docetaxel, carboplatin, trastuzumab, pertuzumab)
 - ▶ TH (paclitaxel, trastuzumab)
 - ▶ THP (paclitaxel or docetaxel, trastuzumab, pertuzumab)
 - ▶ tucatinib (Tukysa) with trastuzumab (Herceptin) and capecitabine (Xeloda)
- As of 9/2/20*

WATCHING FOR AND LOWERING YOUR RISK OF RECURRENCE

➔ **Even after successful treatment, *HER2+* breast cancer may return — possibly years later. You may worry this could happen to you. However, learning how to watch for and lower your risk of the cancer's recurrence may ease your mind.**

Types of recurrence. Breast cancer can recur in one or more ways:

- Local recurrence is a regrowth of the cancer at the site of a lumpectomy or mastectomy.
- Regional recurrence is regrowth of cancer in the lymph nodes in the armpit or above the collarbone (clavicle).
- Distant recurrence is metastasis (spread) of the breast cancer to other organs. You may have symptoms or your doctor will see signs on a CT or PET.
- A cancer that appears in the other breast is most often a new cancer, not a recurrence.

Monitoring. After treatment, your doctor will watch for signs of cancer with regular exams and blood tests. You will likely have mammograms of both breasts after a lumpectomy. At or between exams, tell your doctor if you notice new symptoms in your breast or other health changes. If you do, or if you are at higher risk for recurrence, your doctor may order additional tests.

Medications. Your doctor may prescribe a maintenance medication or extended adjuvant therapy to help prevent recurrence. You will likely take the drug for many months or

years without stopping. It is crucial to take the right dose of the right drug at the right time on the right schedule. If you miss one or more doses, tell your health care team.

Sometimes side effects from a medication are severe enough to disrupt your daily life. If they do, talk with your health care team about ways to manage them. Bottom line? Don't stop taking your maintenance drugs without talking to your doctor first. These medications are limiting the risk of recurrence. By taking them exactly the way they're prescribed, you're taking an active role in your care.

Living in the Now

Alisha Quigley is her own best advocate. A self-described introvert, she credits the education and support she received from online breast cancer survivor communities with helping her achieve a positive outcome in spite of a Stage II triple-positive breast cancer diagnosis.



➔ **After feeling a lump** while scratching an itch, I called my doctor the very next day. When I was given the option of cutting out caffeine to see if it would go away or getting an ultrasound, I chose the ultrasound. And when my oncologist wouldn't talk with me about a treatment option I wanted to explore, I sought a second opinion. I recently celebrated two years of being cancer-free and without it sounding too much like a cliché, this diagnosis has changed my life.

I was 24 years old, working for a temp agency and living at home when I was diagnosed with Stage II triple-positive invasive ductal carcinoma. I found out I was *ER-* and *PR-*positive right away but didn't know I was *HER2-*positive until after I met with the surgical oncologist. By that time, I was already overwhelmed. She did a great job of reeling in the panic I felt, and we discussed the pros and cons of having a lumpectomy versus a mastectomy.

Next I met with the medical oncologist. She explained in layman's terms how cancer happens, and that helped. She also told me the majority of breast cancer diagnoses, including mine, were sporadic, which means they aren't caused by genetic or familial links. The treatment plan she recommended was a combination of chemotherapy and targeted therapy, surgery and radiation therapy.

At this point, all I could think of was that I didn't have health insurance. I cried thinking about how much each test, biopsy and scan would cost. Then I was introduced to my care navigator, who helped me so much with her knowledge about resources. She connected me with a breast and cervical cancer intervention program for the uninsured and underinsured in Pennsylvania. My mom also had a cancer policy for me that paid out upon my diagnosis. Between the two, I was able to focus on my body and not worry so much about the costs.

I had a port placed by my right collarbone and started the drug therapy later that week. Five weeks after my last drug treatment, I had surgery. I opted for a lumpectomy for a few reasons. First, I had just one lump that was 2 centimeters by 1 centimeter. My genetic test results showed no increased risk, so I didn't feel I needed a mastectomy. And, my breasts are large enough that I could have a lump removed without making them look too different in size. That can be a concern for women who have smaller breasts.

“/”
“Find a support group that works for you. Sometimes things are easier to hear coming from other patients versus an oncologist.”

My surgery went well. My surgical oncologist got clear margins. The pathology for two lymph nodes that were removed was negative.

Next I had 33 rounds of radiation therapy, 28 in the general area and 5 boosts to the lumpectomy site.

Cording, caused by hardened lymph vessels in my arm, started two weeks after surgery, and I had lymphedema in my trunk and very stubborn scar tissue. Physical therapy helped.

Face-to-face support groups didn't appeal to me, so I checked out a Facebook support group. For me, it is ideal because I do my best connecting through messaging and texts. It's available 24/7 and connects me with women all over who have gone through this. I can ask questions and get resources and ideas. All

the abbreviations and shorthand talk was so confusing at first, but seeing it constantly in the Facebook group made it easier to pick up.

When my medical oncologist recommended a specific maintenance therapy, I asked about ovarian suppression and extended adjuvant therapy because I'd heard about them in my group. She wasn't very open to either, so I sought a second opinion at a nearby university cancer center. They were in favor of both and very surprised extended adjuvant therapy wasn't already suggested given the aggressiveness of a *HER2+* diagnosis. I felt so comfortable there that I switched doctors and cancer centers and followed the new treatment plan. I now have follow-up office visits every four months. We'll continue to evaluate the treatment I take. I'm also officially post-menopausal, which may sound scary and awful at my age, but I'm managing well!

Find a support group that works for you. The Young Survival Coalition group on Facebook was my main source of information and support. Learning all the little cancer details in these groups helped me understand the bigger picture and learn what my treatment plan was intended to do for my long-term health. Sometimes things are easier to hear coming from other patients versus an oncologist.

Cancer ended up being the best thing to happen to me. Before, I was anxiety-filled and had a negative mindset. I stressed about everything, hated crowds and never went anywhere. The diagnosis just flipped a switch in me. I have a new job, and I feel so carefree.

I took a post-cancer celebration vacation to Maine with a friend about five months after I finished active treatment, and I fell in love with Bar Harbor, Maine. It has turned into a yearly thing. I want to travel and live in the now. ■

Support during treatment helps improve your quality of life

Managing the physical and emotional challenges of a cancer diagnosis and treatment can feel overwhelming, but you are not alone. Support is available through your multidisciplinary team from diagnosis through survivorship. Known as supportive care, this set of services can help you address the physical, emotional, practical, spiritual, financial and family-related challenges you may experience. A primary focus is to help you prevent, minimize and manage treatment-related side effects and improve your quality of life. Ask your nurse navigator about the services offered at your cancer facility and in your area.

Potentially severe side effects

Severe treatment-related side effects aren't common but can occur. They can develop rapidly, becoming serious or even life-threatening without swift medical intervention. Talk with your doctor about your risks, learn early warning signs and find out exactly what to do if you experience symptoms.

Cardiotoxicity (heart problems) can occur with certain types of drug therapies. Ask your doctor if you are at risk, how to identify the symptoms and when to seek emergency care. Report symptoms immediately if they occur.

Hepatotoxicity (liver problems) may arise with certain therapies. Your doctor may check your liver function frequently if this applies.

Common side effects

These side effects may occur with *HER2+* breast cancer and its treatments.

Diarrhea can significantly affect your quality of life. When mild, diarrhea is an inconvenience. If left untreated, it can lead to serious problems, such as dehydration, loss of important nutrients, weight loss and fatigue.

Before starting treatment, make a plan of action with your health care team about the best time to begin and how best to prevent and control diarrhea. Let your treatment team know if you have an important event coming up. They may be able to adjust the timing of the treatment so you can enjoy your event without worry.

You may be able to anticipate bouts of diarrhea based on prior episodes you have experienced during your treatments. Know where clean restrooms are located to avoid embarrassing situations.

Once diarrhea occurs, consuming only clear liquids may help the lining of your intestines heal. Clear liquids include water, broth, popsicles, decaffeinated tea and gelatin. Over-the-counter medicines and fiber supplements

are available to control diarrhea, but ask your doctor before taking anything. Call your doctor if your diarrhea is severe or is combined with weakness, fever and/or dizziness.

Nausea and vomiting are easier to prevent than control, so ask your doctor about antiemetics (anti-nausea drugs) before beginning treatment. Severe cases can cause dehydration. Eat smaller, more frequent meals and stay well-hydrated. Try peppermints or ginger-flavored lozenges. Nondrug approaches include progressive muscle relaxation, guided imagery, acupuncture, self-hypnosis and biofeedback.

Hair loss (alopecia) related to cancer treatment can affect your whole body. If it's likely you will lose your hair, you can choose from caps, hats, turbans and scarves available at cancer-related boutiques or online. For a wig, ask your doctor to prescribe a "cranial prosthesis due to hair loss from cancer treatment." Such wording may qualify the wig for full or partial health insurance coverage.

Ask your doctor about scalp-cooling technology, also called cold cap therapy, to avoid chemotherapy-induced alopecia. It has been effective in preventing hair loss for some people receiving chemotherapy.

Fatigue occurs primarily because the body needs extra energy to repair the healthy tissue damaged by cancer treatment. Different

from the fatigue that healthy people feel, this type of fatigue usually lasts longer, is more severe and is unrelieved by sleep. When you are able, perform regular exercise, such as walking or yoga, to help you feel more energized. Power walking for 30 minutes five times a week can diminish fatigue significantly. Limit your naps to no more than 20 to 30 minutes at a time.

Headaches can commonly occur. However, a headache that does not go away within 24 hours could be a sign of inflammation of the pituitary gland. This should be reported to your health care team.

Neutropenia (low white blood cell count) commonly occurs in people treated with chemotherapy and increases the risk of infection, especially pneumonia, bronchitis and sinusitis. It also makes infections harder to resolve. Report signs of infection right away. Call your doctor immediately if your fever is 100.5° F or higher. Wash your hands often with soap. Wear gloves for cleaning and gardening. Avoid crowds and sick people.

Thrombocytopenia (causing bleeding/bruising/clotting issues) can occur from some chemotherapies because they may interfere with the body's ability to make platelets, a type of blood cell. Avoid taking Omega 3 supplements, aspirin and other blood thinners during treatment. Tell your doctor about other supplements you take.

Lymphedema occurs when lymph nodes are removed or damaged, causing swelling as lymph fluid builds up in nearby tissues. Consider meeting with a certified lymphedema specialist to learn how to reduce your risk. At the first sign of swelling, get fitted for a compression garment, and ask about massage

Prepare for drains after surgery

Your surgeon is likely to insert one or more drains to the area after breast or lymph node(s) surgery or after reconstruction. These drains help remove fluid buildup that can be painful and slow the healing process. They remain in place for days to weeks depending on how quickly the excess fluid drains.

While you are in the hospital, a nurse will empty the drains and track the amount of drainage. You'll be shown how to care for the drains at home as well as how to monitor for signs of infection. It's a good idea to have a caregiver listen to these instructions, too, so you have help.

Because it may be difficult to raise your arms after surgery, consider wearing loose-fitting tops that are easy to get on and off or a drain management garment, which is a special cotton camisole designed for drains. You may have to adjust how you bathe while the drains are in place.

The drains will be removed by a member of your medical team at a prescheduled visit.

LYMPHEDEMA



Signs and symptoms of lymphedema include swelling in an area such as an arm or a leg (ranging from mild to severe), a heavy sensation in the limb, tightness and reddening of the skin and decreased flexibility.

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treatments for lymphatic drainage. Talk with your doctor about low-level laser therapy to help relieve swelling in the arms, which often occurs after a mastectomy.

Neuropathy can occur from damage to nerves that control movement and feeling in the limbs. Symptoms include numbness, pain, burning sensations and tingling, usually in the hands or feet at first. If you are diabetic, neuropathy can worsen existing symptoms. Avoid standing longer than necessary, wear comfortable shoes and keep hands and feet warm. Ask your doctor about prescription medications for neuropathic pain.

Constipation can be very uncomfortable and may lead to serious medical issues. Talk to your doctor about taking preventive medications or making dietary and lifestyle changes. If constipation becomes painful, contact your doctor. Walking every day helps keep your bowels moving, too, so be active when you can.

Sexuality issues, such as reduced desire or feeling less desirable, may occur if treatment alters your appearance or energy level. Your doctor may not discuss sexuality issues, so it's important that you do. If you have a partner, communicate your feelings, and be open to discovering new ways to share intimacy. Fatigue may also make sexual activity less appealing right now.

Cognitive dysfunction (chemo brain) refers to difficulties with memory, processing information and mental focus. Although associated with chemotherapy, it is also linked to other treatments, hormone depletion and stress, and may occur to some degree even after treatment ends.

Use a planner or calendar to stay organized. Make to-do lists, and focus on one thing at a time instead of multitasking.

Hand-foot syndrome, also called Palmar Plantar Erythrodysesthesia, is characterized by pain, swelling, tightness and redness on the palms of the hands or the soles of the feet. It can also cause painful blisters or calluses. Avoid hot water for bathing or washing dishes, and wear gloves or thick socks to protect hands and feet. Tell your doctor as soon as you begin experiencing symptoms.

Mouth sores (oral mucositis) are small cuts or ulcers that can affect the gums, tongue, roof of the mouth or lips. Mouth sores may range from mild to severe, making it difficult to talk, eat or swallow. Avoid spicy and rough-textured foods. Brush your teeth with a soft-bristled toothbrush. Your doctor may suggest a mouth rinse or a medication that is topical or coats the lining of your mouth.

Coughing or difficulty breathing should be reported to your doctor immediately. Coughing may signal pneumonitis (inflammation of the lungs).

Sleep problems can occur early on during treatment. The most common are insomnia (the inability to fall asleep or stay asleep), disruption of the wake-sleep cycle and excessive sleepiness. Chemotherapy and radiation therapy can disrupt the chemical balance of the body, which can affect how well you sleep, and changes in hormone levels caused by chemotherapy or hormone therapy may cause sleep to be interrupted. Contact your doctor if you have more than a few disrup-

tions. Your body needs proper rest to tolerate treatment and to heal.

Anemia (low red blood cell count) can result in fatigue, weakness, shortness of breath, dizziness and other symptoms. Your doctor may adjust your treatment if your levels drop too low. Get enough sleep, exercise regularly when possible and pace yourself by balancing activity with rest.

Skin reactions may include rash, redness and irritation or dry, flaky or peeling skin that may itch. Moisturize skin twice a day with a thick cream. Avoid products containing alcohols, perfumes or dyes. Some treatments also increase sun sensitivity, so apply high-SPF sunscreen and limit sun exposure. If you have had breast radiation, do not expose any part of the breast and surrounding skin to the sun for at least a year. It can make it darker, which may be permanent.

Pain may occur in joints or muscles and can be severe if cancer has spread to the bones. Unresolved pain can escalate quickly, so contact your health care team right away if you're in pain. To help them find the best solution, keep a journal of pain-related symptoms, noting when and where pain occurs, how severe it is, how long it lasts and possible triggers.

Phantom pain may occur if you have a mastectomy. The brain treats the absence of a breast the way it does if an arm or leg is removed. Patients report feeling like the breast is being squeezed tightly or has needles sticking into it, or that the nipple, which isn't there anymore, actually itches. ■



Take care of your emotional well-being

➔ Your diagnosis may stir up a variety of unexpected feelings. Many women struggle with anger, anxiety, depression, fear, grief and more, but others report feelings of clarity about life goals.

It is important to recognize the effect that physical changes can have on your self-esteem and body image. For example, even if you are completely confident in your decision to have a mastectomy, you may feel deep loss once your breasts are gone. Treatments may leave scars, discolor the skin, and cause hair loss and lymphedema, which can affect mood, self-image and desirability. All of these feelings are completely normal, and you must address them for the sake of your emotional health.

Family and friends are wonderful sources of support, but they can only understand so much. Find a support group for breast cancer survivors online or in your area. Opening up to people who have had a similar experience can offer comfort and support that are invaluable. Talking with a licensed counselor may also help you work through difficult emotions.

Contact your doctor about excessive crying or continued feelings of hopelessness or despair. Get immediate medical attention for thoughts of suicide or death. Receiving a cancer diagnosis and treatment is like being on a rollercoaster. You'll have ups and downs that are unpredictable, but you don't have to go through them alone.

Know your post-surgical options and make the right choice for you

Breast reconstruction restores or reshapes one or both breasts. Your surgeon may begin or complete this sometimes lengthy process during a mastectomy or lumpectomy or a few months or years later. Timing may be based on other necessary treatments. A nonsurgical breast prosthesis and “going flat” without any more surgery or enhancements are also options.

Ask your nurse or patient navigator for referrals to advocacy groups who offer peer counseling from women who have “been there.” Request to see before and after photos during reconstruction. Discuss your expectations with the plastic surgeon. Even with reconstruction, your breast(s) may not look or feel exactly as they did before.

An implant contains silicone gel or saline (see *Reconstructive Techniques*, below).

Oncoplastic surgery may be an option for

those having a large lumpectomy. This provides a means to reshape the breast as well as sometimes reduce the size of the other breast to help achieve symmetry when comparing one breast to the other.

A flap recreates your breast using tissue from another part of your body (see *Reconstructive Techniques*, below).

Fat grafting involves the transfer of fat tissue from one part of the body to the breast. It can also correct any deformities and make

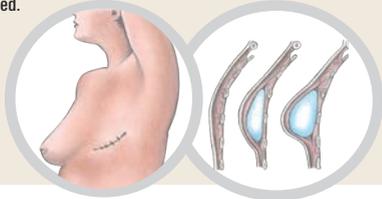
the reconstructed breast equal or more similar in size to the unaffected breast.

Nipple/areola reconstruction is done several months after breast reconstruction is completed. It can be surgically done to create a nipple with some protrusion, or both the nipple and areola can be a 3-D tattoo.

A breast prosthesis uses artificial materials to provide a natural, symmetrical appearance when you’re dressed. One type goes inside a hidden pocket of a mastectomy bra. Another attaches to your body with special adhesive. Your doctor may advise against this if you had chest wall radiation. You must wait until after you’ve healed from surgery to be fitted. Ask your insurance provider if mastectomy-related products are covered. ■

RECONSTRUCTIVE TECHNIQUES

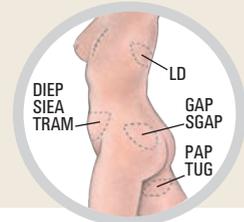
WITH AN IMPLANT ▶ A breast implant filled with silicone gel or saline (salt water) may sometimes be placed following the mastectomy in a single operation referred to as immediate reconstruction. In delayed reconstruction, a tissue expander is inserted under the skin following the mastectomy to gradually stretch the skin and underlying tissue; an implant is then placed in a second surgery, often when treatment is completed.



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WITH A TISSUE “FLAP” ▶ A tissue “flap” usually contains skin, fat, blood vessels and sometimes muscle. A pedicle flap remains attached to the body and is repositioned to the breast area with a muscle carrying the blood supply. A free flap is removed from the body along with blood vessels, which are then attached to the blood vessels in the breast area. Some types of flaps follow.

- [DIEP] deep inferior epigastric perforator flap
- [SIEA] superficial inferior epigastric artery flap
- [TRAM] transverse rectus abdominis muscle flap
- [LD] latissimus dorsi flap
- [GAP] gluteal artery perforator flap (gluteal free flap)
- [SGAP] superior gluteal artery perforator flap
- [PAP] profunda artery perforator flap
- [TUG] transverse upper gracilis flap



CAREGIVING

Advice for the male caregiver

As a man caring for a woman with breast cancer, you are likely her spouse or partner. You may be scared, angry, sad and confused. You may also wonder how to help. Most of the time, the best thing is to just be there and really listen. Here are more ways to support her — and yourself.

Be a sounding board. Along with the health care team, help her decide on a treatment plan.

Reassure her. Treatment choices involve medical and emotional considerations. She may worry about how her body will look after surgery and how it might affect her sexuality. Tell her your feelings for her won’t change no matter her choice.

Ask her nurse navigator for photographs of what she may look like after surgery to prepare you for what you will see when helping with dressing changes. If she has a mastec-

tomy without reconstruction, tell her not to focus on her breast being gone but that her cancer is gone. If she is in the first phase of reconstruction, tell her she is like a famous painting that requires time to be completed — a work in progress.

Communicate. She will depend on you to honestly express yourself as well as be a good listener when she shares her feelings. Keep an open heart and open mind. Update family and friends by sending one email to everyone. This saves time and ensures everyone hears the same thing.

Do daily chores. Or find someone to assist. This may lower her stress and give others a way to help. Set up a filing system to organize appointment notes, medical research and insurance claims.

Go to her appointments. Take notes. If you don’t understand something, ask her doctor for an explanation.

Take care of yourself. If you are stretched too thin, you won’t be good for her or you. Meet a friend for lunch, play some basketball, watch a movie. It’s not selfish. It’s essential for your well-being. And remember, it’s not a sign of weakness to admit you need help. Look into cancer support groups for caregivers, or talk with other men in similar situations, in person or online. ■

Support and financial resources available for you

BREAST CANCER

ABCD: After Breast Cancer Diagnosis	www.abcdbreastcancersupport.org
Advanced Breast Cancer Community	www.advancedbreastcancercommunity.org
American Breast Cancer Foundation	www.abcf.org
AVON Foundation for Women	www.avonworldwide.com/supporting-women/breast-cancer
Babylon Breast Cancer Coalition	babylonbreastcancer.org
Beyond Boobs	www.beyondboobs.org
Bosom Buddies Breast Cancer Support, Inc.	www.bbbsci.org
Breast360.org	breast360.org
Breast Cancer Action	bcaction.org
Breast Cancer Alliance	breastcanceralliance.org
Breast Cancer Prevention Partners	www.bcpp.org
Breast Cancer Research Foundation	www.bcrf.org
BreastCancer.org	www.breastcancer.org
Breast Friends	www.breastfriends.org
Bright Pink	www.brightpink.org
Cancer Schmancer Movement	www.cancerschmancer.org
Cancer Support Community	cancersupportcommunity.org/breast-cancer
Celebrating Life Foundation	www.celebratinglife.org
Circle of Hope	circleofhopeinc.org
Dr. Susan Love Research Organization	www.drSusanloveresearch.org
Erase IBC	www.eraseibc.org
Facing Our Risk of Cancer Empowered (FORCE)	www.facingourrisk.org
Foundation for Women's Cancer	www.foundationforwomenscancer.org
HER2Support.org	her2support.org
Linda Creed Breast Cancer Foundation	www.lindacreed.org
Living Beyond Breast Cancer	www.lbbc.org
Metastatic Breast Cancer Alliance	www.mbcalliance.org
Mothers Supporting Daughters with Breast Cancer (MSDBC)	www.mothersdaughters.org
My BCTeam (social network for women facing breast cancer)	www.mybcteam.com
My Breast Cancer Support	www.mybreastcancersupport.org
National Breast and Cervical Cancer Early Detection Program	www.cdc.gov/cancer/nbcccdep
National Breast Cancer Coalition	stopbreastcancer.org
National Breast Cancer Foundation, Inc.	www.nationalbreastcancer.org
National Cancer Institute	www.cancer.gov/types/breast
Nueva Vida, Support Network for Latinas With Cancer	www.nueva-vida.org
Pink Link	pinklink.org
Reach to Recovery (breast cancer support)	www.cancer.org/reachtorecovery
SHARE	www.sharecancersupport.org
Sharsheret	www.sharsheret.org
Sisters Network Inc.	www.sistersnetworkinc.org
The Sister Study	sisterstudy.org
Support Connection	www.supportconnection.org
Susan G. Komen	www5.komen.org
Sustain Inspire Survive	www.helpsis.com
Tigerlily Foundation	www.tigerlilyfoundation.org
Young Survival Coalition	www.youngsurvival.org

CLINICAL TRIALS

BreastCancerTrials.org	www.breastcancertrials.org
Cancer Support Community	www.cancersupportcommunity.org/find-clinical-trial
Center for Information & Study on Clinical Research Participation	www.searchclinicaltrials.org
CenterWatch	www.centerwatch.com
ClinicalTrials.gov	www.clinicaltrials.gov
Lazarex Cancer Foundation	www.lazarex.org
Metastatic Breast Cancer Trial Search	www.breastcancer.org/treatment/clinical_trials/metastatic-trials-tool
National Cancer Institute	www.cancer.gov/clinicaltrials
NCI Contact Center (cancer information service)	800-422-6237

FERTILITY & CANCER

Alliance for Fertility Preservation	www.allianceforfertilitypreservation.org
American Society for Reproductive Medicine	www.reproductivefacts.org
Livestrong Foundation	www.livestrong.org
RESOLVE: The National Infertility Association	www.resolve.org
SaveMyFertility	www.savemyfertility.org

LYMPHEDEMA

Lymphatic Education & Research Network	www.lymphaticnetwork.org
Lymphedema Treatment Act	www.lymphedematreatmentact.org
National Lymphedema Network	www.lymphnet.org

PRESCRIPTION EXPENSES

America's Pharmacy	americaspharmacy.com, 888-495-3181
Cancer Care Co-Payment Assistance Foundation	www.cancerarecopay.org, 866-552-6729
Cancer Financial Assistance Coalition	www.cancerfac.org
Foundation for Health Coverage Education	www.coverageforall.org
GoodDays	www.mygooddays.org, 972-608-7141
HealthWell Foundation	www.healthwellfoundation.org, 800-675-8416
Komen Treatment Assistance Fund	www.cancerare.org/financial/information, 800-813-4673
Medicine Assistance Tool	www.medicineaassistancetool.org
NeedyMeds	www.needymeds.org, 800-503-6897
Patient Access Network Foundation	www.panfoundation.org, 866-316-7263
Patient Advocate Foundation Co-Pay Relief	www.copays.org, 866-512-3861
Patient Services, Inc.	www.patientservicesinc.org, 800-366-7741
RxAssist	www.rxassist.org
RxHope	www.rxhope.org
RxOutreach	www.rxoutreach.org, 888-796-1234
Singlecare	www.singlecare.com, 844-234-3057
Together Rx Access	www.togetherrxaccess.com, 800-444-4106

REIMBURSEMENT & PATIENT ASSISTANCE PROGRAMS

Abraxane Financial Assistance	www.abraxane.com, 800-931-8691
Amgen Assist 360	amgenassist360.com/patient, 888-427-7478
Amgen First Step	amgenfirststep.com, 888-657-8371
Amgen Safety Net Foundation	amgensafetynetfoundation.com
Aromasin Savings Card	www.aromasin.com/savings, 866-562-6151
AstraZeneca Access 360	myaccess360.com, 844-275-2360
AstraZeneca Patient Savings Programs for Specialty Products	astrazenecaspecialtysavings.com, 844-275-2360
AstraZeneca Prescription Savings Program (AZ&ME)	azandmeapp.com, 800-292-6363
Bristol-Myers Squibb	bms.com/patient-and-caregivers/get-help-paying-for-your-medicines.html, 800-721-8909
Celgene Patient Support	www.celgenepatientsupport.com, 800-931-8691
Enherthu Assistance	www.enherthu4u.com/patient/affording-your-medicine.html, 833-364-3788
Fareston Patient Support	patientrxsolutions.com/patients.php, 800-676-5884
Faslodex Patient Savings Program	astrazenecaspecialtysavings.com/pdf/FASLODEX_Affordability_Brochure.pdf, 844-275-2360
Genentech	gene.com/patients/financial-support, 866-422-2377
Genentech Access Solutions	genentech-access.com/patient, 866-422-2377
Genentech BioOncology Co-pay Assistance Program	copayassistancenow.com, 855-692-6729
Genentech Patient Foundation	gene.com/patients/patient-foundation, 888-941-3331
Genomic Access Program	oncotypeiq.com/en-us/breast-cancer/patients-and-caregivers/stage-0-dcis/insurance-coverage-and-financial-assistance, 888-662-6897
Halaven Reimbursement Resources	www.eisaireimbursement.com/patient/halaven, 866-613-4724
Herceptin Access Solutions	genentech-access.com/patient/brands/herceptin, 866-422-2377
Herceptin Hylecta Access Solutions	genentech-access.com/patient/brands/herceptinhylecta, 866-422-2377
Herzuma Savings and Support	herzuma.com/resources-and-support, 888-587-3263
Ixempra Patient Support	www.ixempra.com/#support, 855-991-7277
Kadcyla Patient Assistance	www.kadcyla.com/financial-assistance-programs, 888-249-4918
Kanjinti Cost Assistance	amgenassist360.com/patient/kanjinti-cost-assistance, 888-427-7478
Nerlynx Access and Support	nerlynx.com/access-and-support/access-programs, 855-816-5421, press 1
Novartis Financial Assistance	patient.novartis oncology.com/financial-assistance, 800-282-7630
Novartis Patient Assistance Foundation	novartis.us/our-products/patient-assistance/patient-assistance-foundation-enrollment, 800-282-7630
Novartis Patient Assistance Now	patientassistancenow.com, 888-669-6682
Novartis Universal Co-pay Card	copay.novartis oncology.com, 877-577-7756
Ogivri Patient Assistance	ogivri.com/en/patient-assistant/copay, 833-695-2623
Perjeta Access Solutions	genentech-access.com/patient/brands/perjeta, 866-422-2377
Pfizer Oncology Together	pfizeroncologytogether.com/patient, 877-744-5675
Pfizer RxPathways	pfizerxpathways.com, 844-989-7284
Puma Patient Lynx	nerlynx.com/access-and-support/access-programs, 855-816-5421, press 1
R-Pharm US Access + Support	enrollsource.rpharm-us.com, 855-991-7277
Seattle Genetics SeaGen Secure	www.seagensecure.com, 855-473-2873
Teva Cares Foundation Patient Assistance Programs	tevacares.org, 877-237-4881
Teva Oncology Core Reimbursement Assistance & Support	tevacore.com, 888-587-3263
Tukysa SeaGen Secure	seagensecure.com/patient_tukysa, 855-473-2873
Tykerb Financial Resources	us.tykerb.com/her2-positive-metastatic-breast-cancerpatient-support/financial-resources, 888-669-6682
Xeloda Patient Assistance	genentech-access.com/patient/brands/xeloda.html, 866-422-2377
Zoladex Co-pay Card	activatethecard.com/7526, 844-864-3014

➔ For more resources, go to PatientResource.com

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Where information equals hope