

Breast Cancer

a patient guide through
diagnosis and treatment



CAROLINA BREAST
& ONCOLOGIC SURGERY
Your Partner in Breast Health & Breast Cancer Care

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Carolina Breast & Oncologic Surgery

the breast care specialists

Nizar “Nick” Habal, MD, FACS

Dr. Habal received his Bachelor’s degree from Cornell University and his Master’s degree from Columbia University, both nationally-recognized institutions. He obtained his Medical degree from New York Medical College and was awarded the school’s Trustee Scholarship. He accomplished his general surgery training at the New York and Presbyterian Hospital / Cornell University.

Dr. Habal’s cancer sub-specialization was completed at the Memorial Sloan-Kettering Cancer Center in New York and The John Wayne Cancer Institute in Santa Monica, CA, both leading cancer treatment and education centers in the US.

Dr. Habal is certified by the American Board of Surgery and the Society of Surgical Oncology. He is a Fellow of the American College of Surgeons and is also a member of several medical professional societies, including: the Alpha Omega Alpha honor medical society, the North Carolina Medical Society, and the American Society of Breast Surgeons.



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Welcome

Thank you for choosing Carolina Breast & Oncologic Surgery, the breast care specialists. Rest assured that our dedicated staff and professionals will work diligently to assist you in any way we can and provide the services to best fit your needs.

If you find that you need further information or wish to schedule an appointment, please contact our office at (252)413-0036. We hope that this informational resource provides you with the insight and education needed to pursue the best possible clinical outcome. You can visit us on the web at: www.CarolinaBreast.com.

Our National Accreditation

Carolina Breast is proud to be fully accredited by the National Accreditation Program for Breast Centers (NAPBC). This mission is pursued through standard-setting, scientific validation, as well as patient and professional education. Carolina Breast voluntarily committed to provide the highest level of quality breast care and underwent a rigorous evaluation process and review of its performance by the NAPBC. During this process, our center demonstrated compliance with all the standards established by the NAPBC for treating patients diagnosed with the full spectrum of breast disease. These standards include: proficiency in center leadership, clinical management, research, community outreach, professional education, and quality improvement.

Our Mission

We are committed to providing unparalleled surgical care to patients with both benign and malignant breast disease in a private, caring, compassionate, and professional manner.

Carolina Breast & Oncologic Surgery provides special attention to patients afflicted by the overwhelming disease of cancer, including timely diagnosis, treatment, and referral to dedicated oncology specialists and long-term follow-up. We offer patients a comprehensive approach featuring a wide variety of treatment options to achieve the best possible outcome.

Our Services

We offer complete benign and malignant breast care, including:

- Comprehensive Examination
- Breast Ultrasound for diagnosis and treatment
- Non-surgical needle biopsy
- Breast-Conserving treatment of breast cancer
- Sentinel Node biopsy
- Partial Breast Irradiation
- Oncoplastic Surgical techniques
- High-risk genetic counseling and testing
- Coordinated care with a multi-disciplinary cancer team including medical and radiation oncology, radiology and pathology specialists
- Educational materials and information on breast cancer treatment
- Second Opinion consultations for benign and malignant diseases



You've been diagnosed with breast cancer...

A breast cancer diagnosis is often associated with difficult emotions which may include shock and doubt, coupled with anger and extreme sadness. Patients often report feeling under pressure to make sense of a whole new medical maze. Also, in the midst of this emotional roller-coaster, they are faced with the difficult job of gathering information, learning new medical terms and making difficult treatment decisions.

The treatment of breast cancer is complex and constantly evolving. Often, a combination of treatment strategies is the best method to achieve a cure. **Three principal specialties are involved in breast cancer treatment including surgery, medical oncology and radiation.** Not all patients are treated with all modalities. Some modalities may be given in different order, different intensity or over different timetables — depending on the stage and the biological behavior of the breast cancer, as well as the preferences of the patient who is diagnosed.

Carolina Breast & Oncologic Surgery works together with a dedicated team of breast cancer specialists to coordinate the most appropriate care for each individual, providing a multi-disciplinary and up-to-date approach to all our patients.

Our practice has prepared this booklet to provide you with basic information about breast cancer and the treatment options which are available to you.

Breast cancer basics

Tumors in the breast can appear at any age after the breast has fully developed. They start from just a few cells and can grow to very large lumps. Luckily, most tumors or growths in the breast are benign, but as a patient ages, the risk of a malignant or cancerous tumor increases. The worry with malignant tumors is that they can spread to other organs of the body. This makes them potentially life-threatening. They spread through the blood vessels or lymphatic channels, the tiny canals found throughout the breast tissue and carry fluid to lymph nodes in the armpit.



The importance of mammograms and other regular health examinations

Because the smaller tumors are less likely to spread and are easier to treat than larger ones, finding lumps early can make a big difference. Mammograms are special X-rays that can do just that — find tumors in the breast before they grow too large. Since mammograms can miss up to 20% of cancers, regular exams by women and their doctors should also be utilized to help find the smaller tumors.

The only way to determine if a breast lump or suspicious mass visible on a mammogram is truly a cancer is to have a biopsy. During a biopsy, a surgeon or radiologist removes a sample of tissue. A pathologist then examines the tissue under a microscope to make the diagnosis. If your biopsy result is positive, it means the tumor or tissue from the suspicious area contains cancer, and you will need further treatment.

Breast Cancer Biology

a helpful primer

What is cancer?

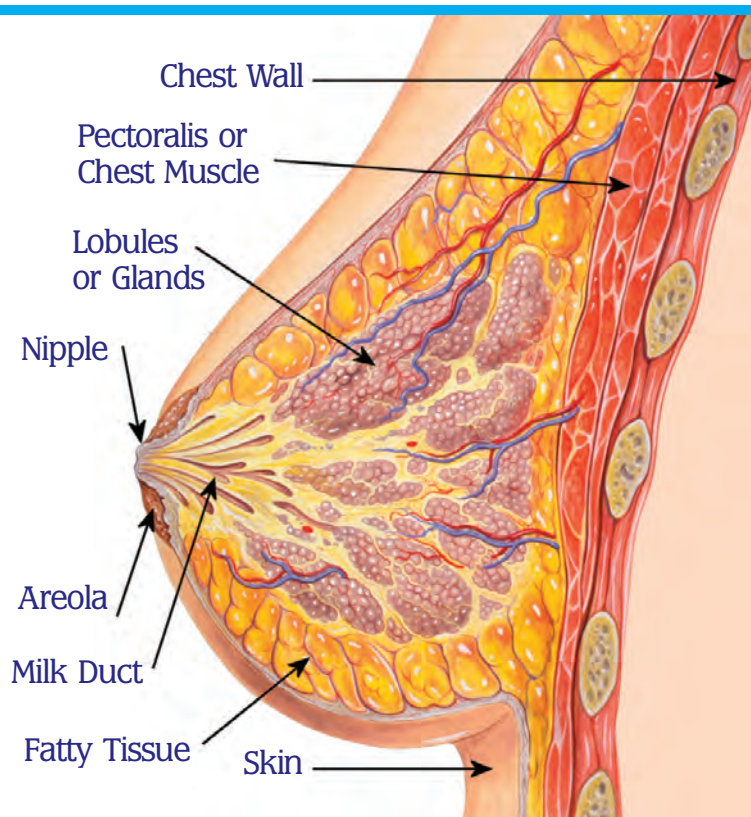
For largely unknown reasons, cancer occurs when cells become abnormal and divide without control or order. All parts of the body are made up of cells that normally divide and multiply only when the body needs them. A tumor occurs when some cells keep dividing uncontrollably and clump together into a mass. Most breast tumors are benign, which means they do not invade or damage the surrounding tissue. However, some breast tumors are malignant or cancerous. They can destroy the nearby tissues as they grow and eventually spread or “metastasize” to other parts of the body either through the blood stream or, more commonly, through the lymph nodes.

Two kinds of cells can lead to breast cancer. **Ductal** cancers arise from cells lining the canals that carry milk to the nipple. **Lobular** cancers arise from cells lining the glands

that make milk (shown above).

Roughly 85% of the cancers found in women are of the ductal variety. The process of growth from a single cluster of cells to a malignant tumor

is slow, perhaps as long as several years, although the exact growth period varies from one patient to the next. The change from normal duct cells to cancer requires several steps (shown in the diagram below).



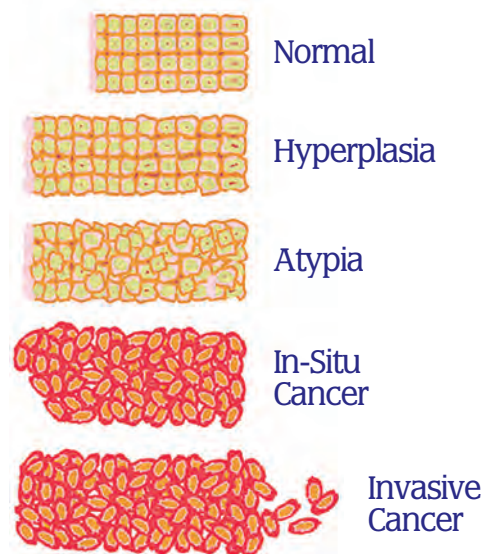
The process of growth

Hyperplasia: The cells lining the duct start to divide at an abnormally fast rate. At this point, they still appear normal under the microscope. This phase still represents a benign process, such as fibrocystic disease of the breast.

Atypia: The cells and their content begin to look abnormal. Although this is still a benign condition, these changes are believed to be pre-cancerous and may put the patient at a higher risk of getting a cancer in the future.

In-Situ Cancer: Can be Ductal Carcinoma In-Situ (DCIS) or Lobular Carcinoma In-Situ (LCIS). The cells look very abnormal and grow at such a rate that they clump together, fill and swell up the duct/lobule. At this stage, the cells still remain contained within the duct lining.

Invasive Cancer: Also known as Infiltrating Carcinoma. The abnormal cells now ‘eat through’ the duct lining and invade the surrounding normal breast tissue, the lymphatics or the blood vessels.



How cancer spreads

A malignant tumor can invade and destroy surrounding normal tissue. The larger it grows, the more likely it is to invade blood vessels and lymphatics. Once cancer cells enter the bloodstream or lymph nodes, they can travel to the lungs, liver, brain and bones. When breast cancer spreads, it's referred to as metastatic breast cancer although it's found in another part of the body. For example, breast cancer spread to bones is still called breast cancer, not bone cancer.

Breast cancer cells frequently get trapped in the lymph nodes under the arm, called axillary lymph nodes, before they spread to the rest of the body. Although not common, some patients whose axillary lymph nodes are clear may still have cancer that's spread. The faster the tumor invades the surrounding tissue and reaches the lymph nodes, the more 'aggressive' it is. More importantly, the larger the tumor, the more likely it is to metastasize or spread to the organs outside the breast (see "The stages of breast cancer" below.)

Axillary
Lymph
Nodes

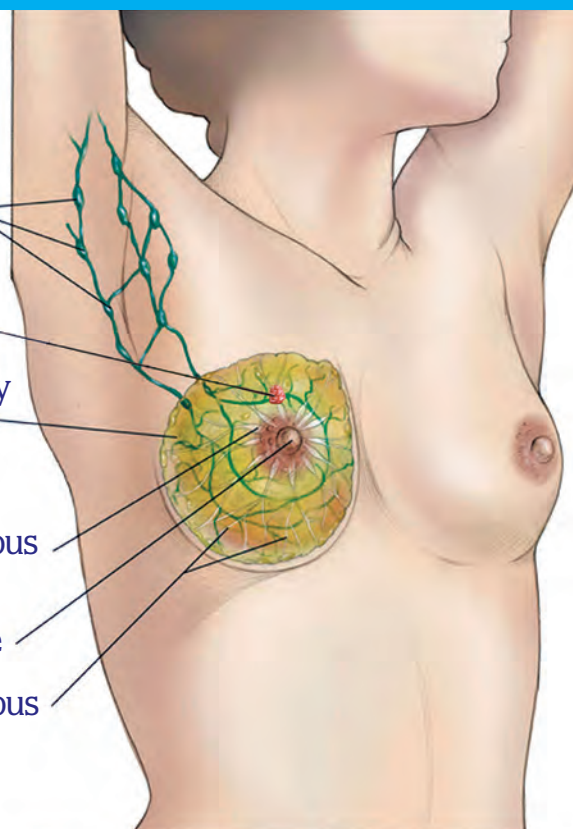
Cancer
Tumor

Mammary
Glands

Lactiferous
Sinus

Nipple

Lactiferous
Ducts



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The Grade of the cancer is often confused with its Stage. The Grade of the tumor is a description of the cells when they are seen under a microscope. This helps in understanding how aggressive the cancer may be. The Stage of the cancer depends on the size of the tumor and status of the lymph nodes and is directly related to survival and outcome after treatment.

The stages of breast cancer

Breast cancer is a complex disease and all cases are not the same. Once the diagnosis of breast cancer has been established, more tests will be done to find out how large it is and whether or not it has spread to the lymph nodes or other sites.

This important step, called staging, is usually completed after surgery and scans have been performed. Your team of doctors will need to determine the stage of your breast cancer in order to plan the most appropriate therapeutic combination of treatment.

Stage 0 breast cancer is considered pre-cancerous, meaning it rarely metastasizes to lymph nodes or other areas regardless of size; it is reserved to Carcinoma-In-Situ (CIS).

Stage I breast cancer is when the cancer is small and hasn't spread anywhere.

Stage II breast cancer is when either the tumor is small but has spread to the underarm lymph nodes or the tumor is a little larger but still has not spread to the lymph nodes.

Stage III breast cancer is also called locally advanced breast cancer. The tumor is larger and has spread to the lymph nodes under the arm or spread to lymph nodes farther away from the breast.

Stage IV breast cancer is defined as a tumor, regardless of size, that has spread to places far away from the breast, such as bones, liver, lungs or brain.

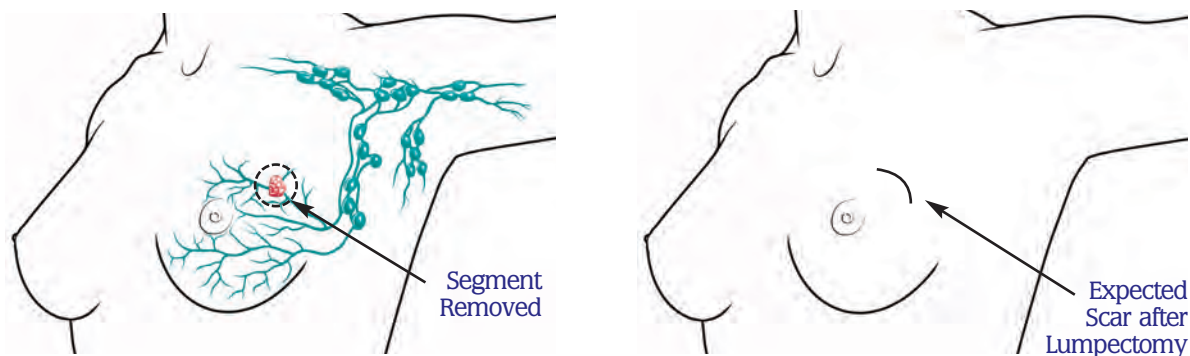
Please note that most recent methods to stage the cancer also include factors such as whether or not the cancer has Estrogen Receptors (ER) or Progesterone Receptors (PR).

Surgical Options

Once a lump is diagnosed as a breast cancer, it needs to be removed surgically. There are no “non-surgical” options to remove a breast cancer. In addition to the cancer removal, your surgeon will also remove a few lymph nodes from the axilla (underarm) to check and see if there are any metastatic cancer cells in them. The following is a brief description of the most common surgical options available to remove a breast cancer.

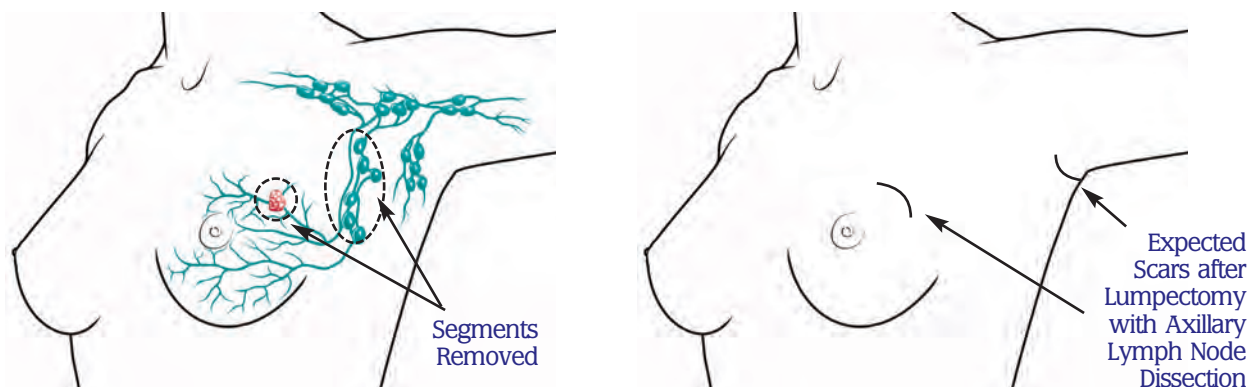
Lumpectomy / Partial or Segmental Mastectomy with or without Sentinel Node Biopsy

The surgeon removes the lump containing the cancer without removing the entire breast. This procedure involves removing all the cancer while leaving much of the remaining breast tissue, and is usually recommended for a smaller cancers. Depending on the size and location of the cancer, this surgery can conserve most of the breast. If the cancer is located deep in the breast tissue, a radiologist may place a guide-wire through the skin that targets the tumor before the surgery, so-called needle-localization. In addition, if a large enough lump is removed the remaining breast tissue may be manipulated during the surgery to recreate the contour of the breast and provide a better shape, so-called mastopexy. Most of the time, this procedure is usually coupled with a Sentinel Lymph Node biopsy (see below.) Women who have lumpectomies almost always have radiation therapy after the surgical scars have healed. Radiation therapy is used to destroy any cancer cells that may not have been removed by surgery.



Lumpectomy / Partial Mastectomy with Axillary Lymph Node Dissection (Removal of Lymph Nodes)

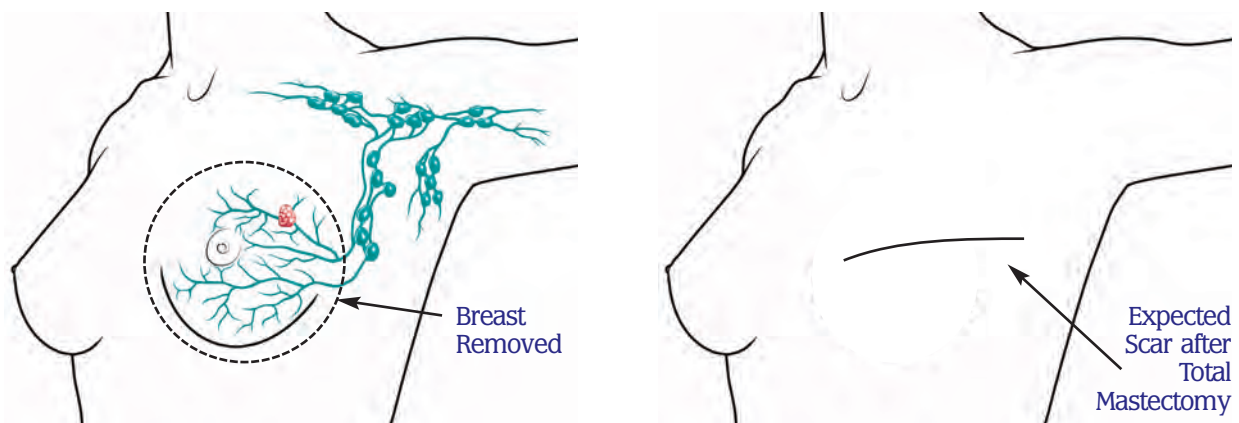
In addition to the Partial Mastectomy described above, the surgeon may also remove the lymph nodes under the armpit, usually through a separate incision. This additional dissection of the lymph nodes is carried out if the cancer has already spread to the lymph nodes as confirmed by physical examination, lymph node needle biopsy or Sentinel Node Biopsy (see below). A drain will be placed at the time of surgery and removed on average one to two weeks later. Again, radiation therapy to the breast typically follows the lumpectomy.



Surgical Options

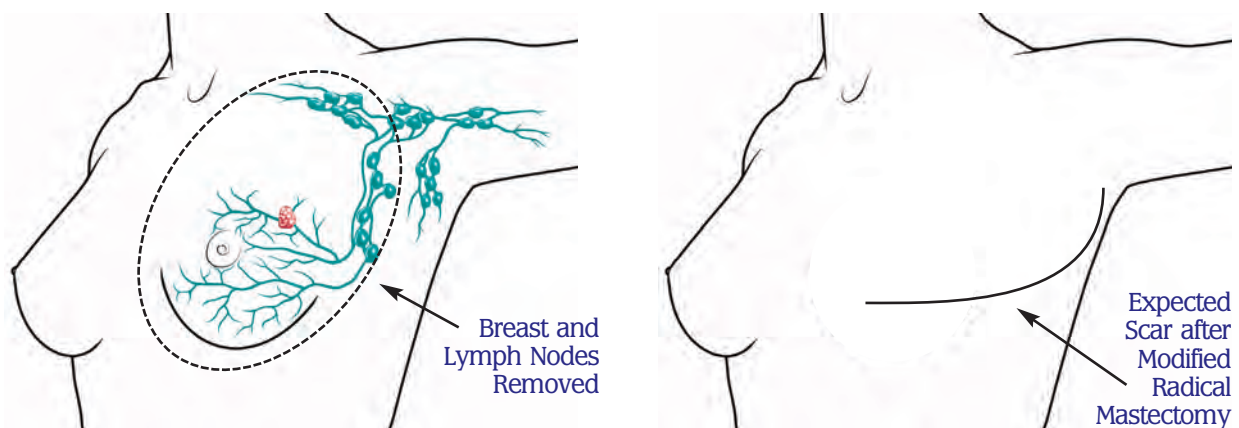
Total (or Simple) Mastectomy

Your surgeon removes the entire breast. Some lymph nodes under the arm may be removed also, because it is hard to separate the breast tissue from the lymph nodes in the armpit. This option is usually offered for cancers that are too large or are suspected of being in more than one part of the breast. Some women with smaller cancers that can be treated with lumpectomy alone choose to have a mastectomy instead. In addition, this procedure is usually coupled with a Sentinel Lymph Node biopsy (see below.)



Modified Radical Mastectomy

Your surgeon removes the breast, along with lymph nodes under the arm including the Sentinel Lymph nodes (see below), along with lining over the chest muscles and sometimes part of the chest muscles. It is usually recommended for large invasive cancers and sometimes for smaller invasive cancers, with proven metastasis to the lymph nodes, instead of lumpectomy with axillary node dissection.



Reconstruction after mastectomy

Patients who elect to undergo mastectomy also have the option of breast reconstruction. There are a variety of ways that can be done, including placing implants or moving tissue from the abdomen or the back to recreate the shape of the breast after its removal. Reconstruction is performed by a plastic surgeon during mastectomy surgery or later.

Lumpectomy or Mastectomy? Which choice is right for you?

Most cancers that are still small and unlikely to have spread out of the breast can be treated with lumpectomy or partial mastectomy. This option is commonly referred to as 'breast conserving therapy,' because most of the normal breast tissue remains intact, in contrast to total or radical mastectomy where the entire breast tissue, nipple and skin are removed. Several large clinical trials comparing the two options have confirmed that the overall outcome and survival from breast cancer is the same whether a patient chooses the breast conserving option or whole breast removal. In other words, more aggressive surgery does not impact the survivability from breast cancer.

Given the choice, the decision to undergo mastectomy or breast conserving therapy is entirely up to the individual. You should discuss the pros and cons of each method with your surgeon. However, several important points need to be emphasized when contemplating this decision:

- Lumpectomy offers the individual the best cosmetic outcome available for the treatment of breast cancer. In most cases, the scar from surgery can be easily hidden with a bra, and the bust remains full. The nipple and the sensation around it remain intact. Also, the individual does not have to undergo the shock of losing a breast.
- After a lumpectomy, most women have to undergo radiation therapy. Radiation is designed to decrease the likelihood that the cancer will return in the breast after treatment, a so-called local recurrence. Radiation does not entirely eliminate that risk.

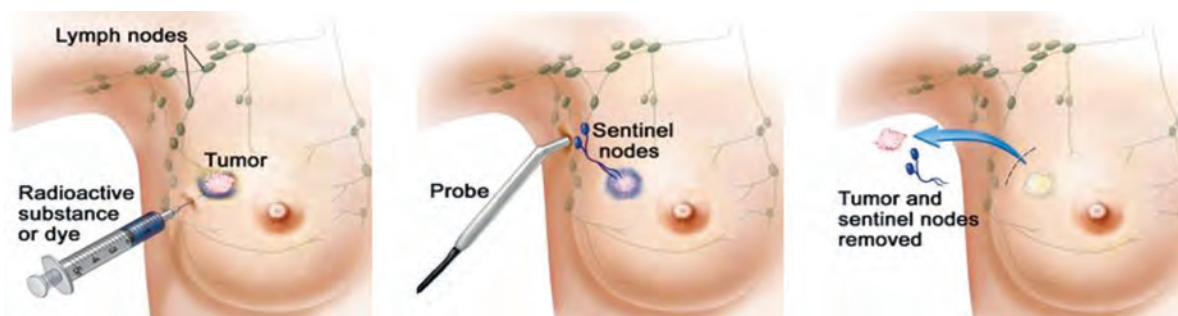
- The risk of local recurrence after breast conserving therapy remains slightly higher than the risk after mastectomy.
- Radiation will increase the time required to treat the cancer and is not without its risks.
- Mastectomy offers the smallest chance cancer will return in the breast but does not completely eliminate that risk.
- Mastectomy is not a guarantee that you can avoid chemotherapy or radiation therapy.
- Mastectomy surgery takes longer, is more painful, involves drainage tubes that can stay in for several weeks. Recuperation from mastectomy can be more difficult.
- The cosmetic outcome after mastectomy is less appealing, but it can be corrected with reconstructive surgery.
- Women who elect to undergo mastectomy rarely require radiation therapy. But women with a very large cancer or many axillary lymph nodes that are positive will likely have to undergo radiation therapy after mastectomy.
- **When deciding between lumpectomy or mastectomy, it is always important to remember that the overall outcome is the same no matter which option you choose.**

A mastectomy is strongly recommended when:

- The cancer is large or found in more than one part of the breast, so-called multicentric disease.
- The breast is small or shaped so that a lumpectomy would leave little breast tissue or a very deformed breast.
- A patient chooses not to have radiation therapy.
- A patient prefers a mastectomy.

The Sentinel Lymph Node Procedure

The sentinel lymph nodes (SLN) are defined as the first lymph nodes the breast cancer could spread to and are the most likely to contain cancer in the event of spread. These nodes are located by means of a special technique utilizing radioactive and blue-colored dyes to help the surgeon identify them. Typically, two to six SLN's are found. The SLN biopsy has been developed to decrease potential complications of removing all lymph nodes from the armpit such as fluid retention and swelling in the arm on the side of the surgery. If your invasive tumor is 3 cm or less, and no cancer is felt within your lymph glands, then you may have this procedure. (Continued on next page)



Intra-operative “Radioactive” or “Blue Dye” Mapping (continued from previous page)

A small amount of radioactive substance (technetium sulfur colloid) or blue dye is injected into the skin or tissue around the cancer site. With radioactive material, the radiation exposure is less than that of a chest x-ray. With blue dye, the injected skin, lymphatic channels and urine may discolor. Skin color can remain for weeks, sometimes months. Urine color will return to normal in 1-2 days. There's a rare possibility of allergic reaction to the blue dye at injection time. Once the injected radioactive or blue dye material moves through breast lymphatic channels, it travels to the sentinel nodes. A hand-held probe is used to locate the 'hot' lymph nodes in the armpit. The surgeon will make a small incision and remove the nodes to send to pathology for examination. Your pathology report will be available within one week.

Pre-Operative Instructions

The following information will help you to prepare for your upcoming surgery. We hope this information will help to make this experience more comfortable for you. If you have any questions regarding these instructions, contact the staff at Carolina Breast & Oncologic Surgery.

Carolina Breast & Oncologic Surgery (252) 413-0036

Vidant SurgiCenter (252) 847-7700

Vidant Medical Center Admissions (252) 847-5941 or 847-4100

Please be sure that you have the following information handy:

- All your Insurance Information
- A list of all medications that you are currently taking
- A list of any allergies you may have to any medications

Please follow these instructions carefully:

- **Nothing to eat or drink after midnight on the night prior to your surgery.**
- **You will need to have a responsible adult with you to drive you home, if you will be going home the same day as your surgery.**
It is unsafe and against hospital policy to permit you to drive home after surgery when you would have received medications that might slow your responses (anesthesia, pain medication, or any medication to relieve anxiety).
- **Inform us if you're taking aspirin, Plavix®, Coumadin® or other blood thinning medications.**
You should not take aspirin or aspirin-containing products for 7 days prior to your surgery. Tylenol® is okay.
- **Wear comfortable clothing.**
A two-piece, loose outfit with a zipper or buttons in front is the easiest to put on. Some women prefer a loose dress with zipper or buttons in front. Wear a supportive non-wire bra (such as a bra that fastens in the front). The bra will provide comfort and support after your procedure.

Recommended items to bring, if you'll be staying overnight in the hospital:



- Personal items (toothbrush, toiletries, pillow, earplugs)
- Slippers, extra socks
- Bathrobe that opens in front, button or zipper sweater
- Light reading material
- Important telephone numbers
- **Do not bring valuables with you; if you do, make sure you give them to family/friends for safekeeping.**

Post-Operative Instructions

Pain Management

People experience different types and amounts of pain or discomfort after surgery. You'll be given a pain medication prescription upon discharge. It's recommended that you take these medications as needed before pain is severe during the first 24-48 hours after your surgery. Ibuprofen (Advil® or Motrin®) or Tylenol® may be added to or used instead.

Notify us of any drug allergies, reactions or medical problems that would prevent you from taking these drugs. Percocet and Vicodin are narcotics and should NOT be taken with any alcoholic drinks. Also, do NOT use narcotics while driving.

- Healing and recovery are improved with good pain control.
- Narcotics can cause or worsen constipation, so increase fluids, eat high fiber foods (like prunes and bran) Also make sure you're up, out of bed, taking small walks.
- An ice pack may be helpful to decrease discomfort and swelling, particularly to the armpit after a lymph node dissection. A small pillow positioned in the armpit may also decrease discomfort.
- You will have a breathing tube inserted into your throat during surgery. This often causes a sore throat for a few days after surgery.

Incision (Scar) and Dressing Care

Your incision has both stitches and Steristrips (thin white strips of tape placed over the incision) and will be covered by gauze dressing and tape. You may remove the dressing in 2-3 days. **Do not remove the Steristrips.** If they fall off, do not attempt to replace them. Most of the time, the stitches under the strips are absorbable and do not need removal. **Bruising and some swelling are common after surgery. A low-grade fever (under 100°F) is normal the day after surgery.**

Sometimes, the incision is closed with steel clips. We will remove the clips in 10 days to two weeks. Keep a dry dressing over the clips until they are removed.

You may have a **Jackson-Pratt (JP)** drain after your surgery. This drain is a plastic tube running from under the skin to outside your body. A bulb is attached. A nurse will teach you how to empty your drain prior to your going home from the hospital. Empty the drain 2-3 times a day or when the bulb is full. Write down the amount drained on a sheet of paper. More information on the JP drain is included in this booklet.

It's not uncommon for the drain to clog and have some bloody fluid drainage from the entry site in the skin. If this happens, do not panic; simply put on a dry dressing and call the office during regular hours for additional instruction.

Showering and Bathing Instructions

If you have a drain in place or if you have steel clips on your incision, **do not shower** until 24 hours after the drain and clips are removed. We recommend sponge bathing until then.

If you do not have a drain, you may shower 2-3 days after the surgery. Remove the gauze and paper tape covering your incision before you

shower. Thoroughly pat dry your incision with a clean towel after you shower. **Be careful not to remove the Steristrips.** Cover them with a dry dressing afterwards.

Activity after Surgery

Avoid strenuous activity, any heavy lifting, and vigorous exercise until the stitches are removed. Walking can be restarted right away. You may begin driving when you are no longer taking narcotics, all drains are removed, and you feel safe turning the wheel and stopping quickly.

If you have a drain in place... be sure to minimize activity of the affected arm as much as possible until your doctor removes the drain.

Do not avoid using the affected arm altogether. Move all your joints on a regular basis. After the drains are removed, you may start exercises to regain movement and flexibility.

Things you CAN do...

Cooking
Brushing hair and teeth
Applying make-up
Riding in a car
Climbing stairs

Things you CANNOT do...

Vacuuming or sweeping
Washing dishes or clothes
Heavy cleaning
Lifting heavy objects
Heavy yard work

Returning to Work

Most people return to work within 2-3 weeks. However, you may be able to return sooner depending on your comfort level. Returning to work also may vary depending on your line of work, your overall health and your personal preferences.

Be sure to discuss returning to work with your physician or nurse.

Jackson-Pratt Drain Care

After your surgery, you may have a drain(s) called a Jackson-Pratt (JP). The JP drain suction and collects body fluids and blood from your surgical area. It promotes healing and recovery, as well as reduces the chance of infection. The drain will be in place until the drainage slows enough for your body to reabsorb fluid on its own.

While you're in the hospital, the nursing staff will care for your drain and teach you how to utilize the drain at home. Drainage will usually start as bloody, but then turn to yellow after a few days.

Do not be alarmed if your drainage remains blood-tinged.



How to Use Your JP Drain:

Wash hands thoroughly

before emptying your drain(s). Use the measuring cup from the hospital to collect and measure drainage. Unpin the drain from your clothing. Open the top. Turn the drain upside

down and squeeze contents into the measuring cup. Empty thoroughly.

Use the chart to record the drainage amount twice a day or when bulb is full. Record until your post-operative appointment. If you have more than one drain, record each separately. To prevent infection, don't let stopper or top of bottle touch the measuring cup or other surface.

Use one hand to squeeze all of the air from the drain. With the drain still squeezed, use your other hand to replace the top. This creates the suction necessary to remove the fluids from your body. Pin the drain back on your clothing to avoid pulling it out accidentally. Wash your hands again. Remember to wash your hands before and after the procedure to reduce the risk of infection.

It is common for the drain to get clogged or have some bloody fluid drainage from the entry site in the skin. If that happens, do not panic; just put a dry dressing on the site, and call the office during regular hours for additional instruction.

Follow-Up After Surgery

The pathology results of your surgery should be available one week after your surgery. Follow-up appointments to discuss the pathology results and to examine the operative site are generally made by your nurse before you leave the hospital or surgery center.

Feel free to call the Carolina Breast & Oncologic Surgery office to confirm your appointment or if you do not have one or do not remember when it is scheduled.

Contact us during normal business hours for any of the following problems or if you have any questions. Please ask to speak with a nurse during the day.

- Pain that is not relieved by medication
- Fever more than 102°F or chills
- Excessive bleeding (a very bloody dressing)
- Redness outside the dressing
- Excessive and painful swelling
- Discharge or bad odor from the wound
- Allergic or other reactions to medication(s)

Pathology results are NOT discussed over the telephone.

Activities and Helpful Exercises After Surgery

If you've had a lumpectomy only, **without an axillary dissection**, you may resume regular exercises as soon as wish. It's best to avoid, even regular light-duty work, on the side that has the drain. You may start the exercises below after all your drains are removed.

If you've had an axillary dissection or a mastectomy, you will need to minimize the activity of the arm on

the side which was operated on until the drains are removed.

If you exercise slowly, you'll notice relief of stiffness, pain or heaviness in your shoulder. You don't have to work through the pain. Move your arm only to the point where you feel discomfort. Stop, and then try again. By the end of one month, your range of motion should be back to normal.

Before returning to more vigorous upper extremity exercise, such as tennis or weightlifting, check with your surgeon. If you were involved

in a lower extremity exercise program, such as walking, prior to the surgery, you may resume that activity as your endurance allows.

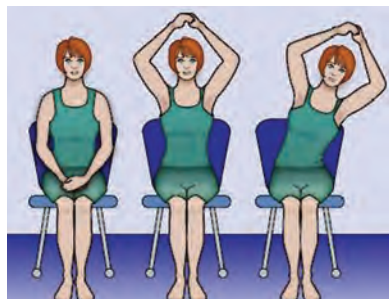
If you had a drain placed during surgery, plan to return to exercise after your drains are removed. Proper exercise will ensure the quick return of range of motion and strength of the shoulder. The exercises that follow will hasten recovery and may be performed twice daily, once in the morning and once before bedtime.

Exercise #1 Clasp & Reach

While sitting or standing, clasp your hands together and slowly raise them toward your forehead. When comfortable, proceed by slipping your clasped hands down behind your neck with your elbows bent. Gradually begin to bring elbows together in front of you and breathe out. Then spread apart breathing in. Return to start. Repeat five times.

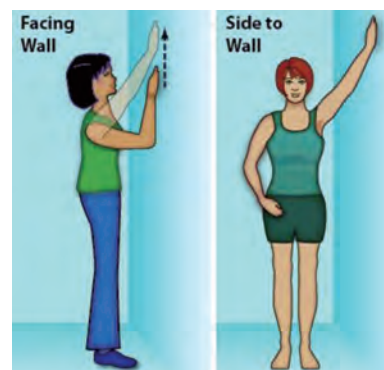
Exercise #3 Side Reach

While sitting or standing extend arms to the side. Slowly raise arms over head. The goal is to hold your arms straight over your head with hands touching. Now lower arms to the side by reversing the path they traveled. Repeat five times.



Exercise #2 Wall Climbing

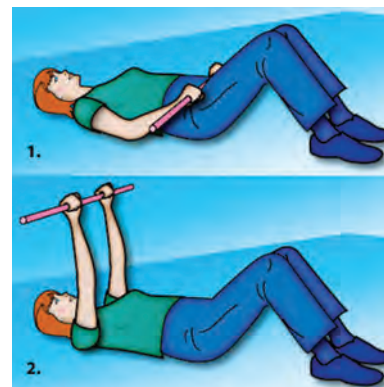
Stand facing the wall with arms straight and fingertips touching the wall. Keeping arms parallel, slowly climb the wall stepping closer to the wall, in an itsy-bitsy-spider fashion. Progress to bring your toes as close to the wall as possible. When arms are straight overhead bring them in toward your ears. If pulling or discomfort occurs, stop and lower arms back down the wall. The goal is to get your arms to equal height up the wall. You'll be able to reach higher by exercising each day. Repeat five times.



Now turn to the side with your body at a right angle to the wall. Slowly let your fingers on your affected arm climb the wall as you side step to the wall. Keep arm straight and in line with ear. Repeat five times.

Exercise #4 Overhead Reach

Laying flat on the floor, knees bent slightly, grab a rod with both hands. First, extend your arms straight above your head. Slowly lift them in unison over your head towards your knees, keeping your arms straight. Return to original position and try again.



Nutrition & Lifestyle



By eating healthy, exercising and learning stress-reducing strategies, most people feel healthier. Integrating healthier habits into your life is important but can be difficult. Some people are more successful if they make small changes over a period of time. Others find a major change is more effective. Lifestyle change begins with a personal commitment to be healthier. The following suggestions may help.

- Eat a low-fat diet (see right.)
- Stop smoking cigarettes.
- Do not drink alcohol in excess.
- Look at what you eat and its nutritional value.
- Find an exercise program that works for you and stick to it. Any kind of physical activity will help.
- Adjust sleep habits to make sure you get a comfortable night's rest. Avoid sleep cycle interruptions.
- Identify stressors in your life and learn to avoid or change them. If it's work, take a leave of absence. If it's family, confront them and talk about what's stressing you.
- Ask yourself, "What advice would I give if I were my best friend, sister, or daughter?"
- Avoid doing things you don't like. Do things you love. Find a new hobby or resurrect an old one.

Your Diet

You may resume your regular diet as soon as you can take fluids following recovery from anesthesia. We encourage 8-10 glasses of water and non-caffeinated beverages per day, plenty of fruits and vegetables, and lower fat foods. The goal is to create an overall lifestyle change, not to temporarily lose weight on a "crash diet." **Don't forget to read the food labels.**

Recommendations

Examples

Lower fat diet Lower dietary fat to between 10% to 20% of calories	Many choices here Low or nonfat foods with less than 3 grams of fat per serving
Eat more plant-based protein Eat less animal-based protein	More beans Less meats
Minimum daily servings of: grains: 6 per day vegetables: 3-5 per day fruits: 2-4 per day beans: 1-2 per day	Whole grains Cauliflower-like vegetables Fresh Fruits in season Pinto and kidney beans
Drink alcohol in moderation	No more than 3 servings a week
Limit nitrates and cured foods	Avoid hot dogs, processed meats, prepared frozen foods
Decrease food additives	Avoid artificial flavors, colors, and preservatives



What comes after surgery... Radiation Therapy & Chemotherapy

Treatments for breast cancer are grouped into two major categories — local and systemic. Local therapies, meaning those therapies that treat the breast only, include surgery and radiation therapy. Systemic therapies, meaning those therapies that treat the entire body, include chemotherapy and/or hormonal therapy.

Radiation Therapy/Oncology

Radiation therapy uses radiation particles, similar to X-Rays, to treat cancer. Radiation therapy is most commonly used in the local treatment of primary breast cancer following breast-conserving surgery.

Radiation beams are used to target the breast and very little of the surrounding tissue. Radiation can also be used to treat other areas of the body that may harbor breast cancer metastases. Radiation is also a choice to control breast cancer metastases to the spine to stop or slow the growth of disease and prevent damage to the spinal cord and decrease pain.

Radiation treatments are usually given to patients at Carolina Radiation Medicine, a division of 21st Century Oncology. At Carolina Radiation, their emphasis and concern is that you receive the personal attention from your very first visit. After a thorough physical exam, a specialist in radiation cancer therapy will review your

records and discuss with you the treatment options. Radiation therapy after breast cancer typically lasts 5 to 6 weeks. Some patients may be eligible for a shorter 5 to 7-day course of radiation utilizing a balloon device or a catheter bundle device (known as SAVI™, shown at right) inserted in the breast tumor cavity following lumpectomy. Both methods, referred to as accelerated partial breast radiation, allow for ultra-precise targeting of the radiation.



Medical Oncology

Medical oncology is the study of and use of chemotherapy (drugs to treat cancer) and/or hormone therapy (drugs that interfere with the body's hormonal stimulation of tumor growth). Chemotherapy may be given for primary breast cancer either before or after surgery.

Chemotherapy may also be used as treatment for metastatic breast cancer which has spread to other organs of the body. Hormonal therapy can be given for primary or metastatic breast cancer. A medical oncologist has expertise in managing these treatments and the side effects and problems encountered over the course of the illness.

Chemotherapy

Chemotherapy for breast cancer is usually a combination of drugs. The drugs may be given by mouth as pills or by injection through an intravenous (IV) needle. Either way, chemotherapy is a systemic therapy because the drugs enter the bloodstream and travel throughout the body to slow cancer cell growth or kill them. The oncologists at Physicians East®, division of Hematology and Oncology will recommend a treatment plan suited to your individual case. Your treatment will depend on your age, whether or not you're still having periods, the stage of your cancer,

the risk for spread or recurrence, and your general health.

Chemotherapy is used to decrease the chance that cancer will come back after your surgery. Sometimes, it is given before surgery (called neoadjuvant) in order to shrink a large or advanced breast cancer. It can also control breast cancer that has metastasized to the lungs, bones, liver, brain, or other parts of the body.

Treatment can be as short as a few months or as long as a year. Chemotherapy is usually given in cycles where you receive treatment for a period of time, and then you have a few weeks to recover before your next treatment.

Depending on the drugs you're given, you may receive your chemotherapy at your doctor's office, in a clinic, in the hospital's outpatient department, or in the hospital. The frequency and duration of your chemotherapy will depend on the type and stage of your breast cancer, the drugs utilized and how your body responds to the treatment and the goals of the treatment.

Throughout chemotherapy, your oncologist and your nurse will monitor how you respond to the therapy. You'll have
(continued on next page)

Chemotherapy (continued)

frequent physical exams and blood tests. Check with your doctor before taking other medications during treatment.

Chemotherapy may cause short-term and long-term side effects which vary from patient to patient, depending on the drugs used. Common short-term side effects that may appear during chemotherapy include: loss of appetite, nausea, vomiting, diarrhea, constipation, fatigue, bleeding, infections, weight change, mouth sores, and sore throat. Some of these problems may continue for some time after chemotherapy ends. Some drugs cause short-term hair loss. Hair will grow back during treatment or after treatment is completed. Before starting chemotherapy, you may want to cut your hair short, or buy a wig, hat, or scarves that you can wear while undergoing treatment. Serious long-term side effects may include weakening of the heart, damage to ovaries, infertility, early meno-

pause, or second cancers such as leukemia (cancer of the blood). These side effects may not appear until later, some time after chemotherapy is completed.

Hormonal Therapy

The female hormone estrogen is known to stimulate the growth and development of breast cancer. It does so through special receptors found on the breast cancer cells called estrogen receptor (ER) or progesterone receptor (PR). Hormonal therapy can be useful if a particular person's breast cancer makes these hormone receptors, usually designated as ER+ or PR+. It works by blocking the hormones from their receptor, thus inhibiting their growth effects on cancer cells. The most common estrogen blocker used in the treatment of breast cancer is Tamoxifen (Nolvadex[®]), although newer agents, such as: Arimidex[®], Femara[®] Aromasin[®] are increasingly being utilized.

Age-specific Probabilities of Developing Invasive Female Breast Cancer*

If current age is:	The probability of developing breast cancer in the next 10 years is:	or 1 in:
20	0.06%	1,681
30	0.43%	232
40	1.45%	69
50	2.38%	42
60	3.45%	29
70	3.74%	27
Lifetime risk	12.15%	8

*Among those free of cancer at beginning of age interval. Based on cases diagnosed 2005-2007. Percentages and "1 in" numbers may not be numerically equivalent due to rounding. Probability derived using NCI DevCan Software, V 6.5.0. American Cancer Society, Surveillance Research, 2011.

Notes, Questions and Things You Would Like to Discuss

Helpful Phone Numbers

Carolina Breast & Oncologic Surgery	(252) 413-0036
Physicians East – Medical Oncology	(252) 752-6101
Vidant Radiation Oncology	(252) 329-0025
Vidant Surgicenter	(252) 847-7700
Vidant Medical Center	(252) 847-4100

Helpful Websites

www.carolinabreast.com	Main website for Carolina Breast & Oncologic Surgery. Providing comprehensive breast care to the community.
www.cancer.gov	The National Cancer Institute's website delivering information on the latest research activities and clinical trials relating to all cancers.
www.cancer.net	People Living With Cancer, the patient information website of the American Society of Clinical Oncology (ASCO), provides live chats, message boards, a drug database, and links to patient support organizations.
www.breastcancer.net	Provides up-to-date news information on breast cancer and is a program from the National Breast Cancer Foundation, Inc.®
www.cancer.org	This is the American Cancer Society's website. In addition to providing helpful links and information, it has access to support groups and information.

Glossary of Helpful Terms

American College of Radiology (ACR) Accreditation- Equipment, professional expertise and quality control for mammography services which meet standards set by the ACR.

Baseline Mammogram- The first mammogram including two views of each breast; used for comparison with future mammograms.

Bereavement- The experience of losing a loved one.

Biopsy- Removal of a small portion of tissue either with surgery or using a large-gauge needle for diagnosis.

Breast Cancer Support Group- Peer or professionally-guided meetings for breast cancer survivors, people undergoing treatment for breast cancer and/or their families.

Breast Prosthesis- Artificial substitute for an absent breast.

Breast Reconstruction- Surgical reconstruction of a breast after removal of breast tissue.

Breast Self-Examination (BSE)- A technique to examine one's own breasts by looking and feeling for changes.

Chemotherapy- Treatment of cancer with certain drugs that are poisonous to cancer cells.

Clinical Breast Exam- Examination by a trained health professional of the breasts & surrounding areas, conducted by touch and sight.

Clinical Trials- Carefully designed and monitored studies of new methods of treating or preventing cancer.

Complementary Therapies- Treatments such as acupuncture, chiropractic, homeopathy, massage, meditation, art, dance or nutrition which may reduce stress and/or boost the immune system. Often used along with traditional medical treatment.

Computerized Tomography (CT)- Cross-sectional x-rays which detect or monitor tissue abnormalities.

Counseling- Treatment of emotional discomfort through the use of psychological techniques which encourage communication of conflict, insight into problems and personal growth.

Detection- Finding abnormalities or disease.

Family Support Services- Counseling and/or support groups for the families or caregivers of cancer patients.

Financial Assistance- Direct assistance or referral to appropriate sources which may provide financial counseling or direct monetary support for medical procedures and treatments.

Genetic Risk Counseling- Education, information and discussion of genetic factors which may put certain family members at risk for inheriting the potential to develop breast cancer.

Hormone Therapy- Treatment of some cancers; known to stabilize or shrink if certain hormones are administered, removed or blocked.

Hospice- A philosophy and delivery of care emphasizing comfort, peace of mind and control of symptoms, usually invoked when life expectancy is short. Available to cancer patients, families and friends.

Hotline- Telephone service staffed by knowledgeable individuals to deliver specialized referral information.

Lumpectomy- Surgical removal of a cancerous lump and surrounding tissue without removing the entire breast.

Lymphedema- Swelling of arms and legs caused by bulky tumors, surgery or radiation. Can be seen after an axillary node dissection.

Magnetic Resonance Imaging (MRI)- A method of creating 3D images of the body using a magnet and radio waves, instead of x-rays.

Mammography- A low-dose x-ray, which usually includes two views of each breast, used to detect abnormalities.

Mastectomy- Surgical removal of all of the breast and sometimes underlying muscles and lymph nodes.

Medicaid- Federal program; reimburses hospitals/doctors for health care given to qualifying people who can't afford medical expenses.

Medicare- U.S. Social Security Administration Program; reimburses doctors and hospitals for health care given to qualified patients over 65 years of age or qualified disabled.

Metastasis- The spread of cancer out of the primary site into far-away organs such as bone, liver, lung and brain.

Nutritional Support- Medically-developed and supervised diets for use by cancer patients during treatment.

Oncology/Oncologist- The study, diagnosis and treatment of cancer / a physician who specializes in the treatment of cancer.

Patient Information & Education- Brochures, pamphlets, videos, posters, classes or workshops to educate cancer patients on disease, treatment options, stress-reduction and/or recovery plans.

Physical Therapy- Treatment by physical methods such as massage and exercise after surgery, treatment or injury to restore strength and range of motion.

Post-Operative Apparel- Swimsuits, bras and lingerie specially designed for use after breast surgery.

Primary Care Provider- Physician or other health care provider whom patient identifies as the main source of her general medical care.

Radiation Therapy- Treatment by x-ray machines delivering high-energy beams directed at the breast; Commonly used to reduce the size of tumors or the risk that the tumor would come back in the breast.

Reach to Recovery- Free American Cancer Society program; specially-trained breast cancer survivors visit recently-diagnosed patients.

Referral- Directing individuals to service providers, such as specialists or support groups.

Road to Recovery - Free American Cancer Society service provided by local volunteers to assist in the transportation needs of cancer patients to and from medical appointments.

Second Opinion - Examination of a patient or a patient's records by another physician for treatment recommendations.

Spiritual Counseling - A system of support that focuses on the individual's soul and spirit.

Stereotactic Biopsy - Removal of small samples of breast tissue for microscopic evaluation using a hollow needle which is precisely guided to the correct location via x-rays and computer coordinates.

Tumor Board - Panel of experts in radiology, oncology, surgery and/ or pathology that makes treatment recommendations.

Tumor Registry - System designed for collection, management and analysis of information about patients with a diagnosis of cancer.

Ultrasound - Non-invasive medical imaging that uses high-frequency sound waves to generate images of the body.

Website - Specific address or location on the Internet.

Glossary provided by Carolina Breast & Oncologic Surgery as an educational resource.

Booklet prepared by Nizar Habal, MD, FACS. Updated 10/2019



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