

**SIMPLIFIED
SURGERY**

**PERSONALIZED
TREATMENT**

**MORE PRECISE
DIAGNOSIS**

TARGETING **Breast Cancer**

**DRAMATIC ADVANCES IN DIAGNOSIS, TREATMENT &
SURGERY ARE IMPROVING—AND SAVING—MANY LIVES**

Just a decade ago, breast cancer treatment was one-size-fits-all and the therapies were few. More women than necessary underwent radical surgery, radiation and chemotherapy and experienced such side effects as nausea, hair loss, fatigue and chronic arm swelling. “Today we have more sophisticated diagnostic techniques and treatment options,” says Wendy Chen, M.D., M.P.H., an oncologist at the Dana-Farber Cancer Institute in Boston. “If you’re diagnosed with breast cancer, you’ll get the treatment that fits you.” Here, see how far we’ve come.

By Christina Frank

Differences in Diagnosis

THEN Mammography and biopsies

NOW Sophisticated biopsy techniques, digital mammography and genetic tests identify tumors as one of three types (this helps determine your menu of treatments):

▶ **ER-positive and/or PR-positive** Tumors with receptors that attach to hormones estrogen and/or progesterone.

▶ **HER2-positive** Tumors that contain too much of a growth-promoting protein called HER-2.

▶ **Triple-negative** Tumors that test negative for hormone receptors and HER-2.

THE FUTURE Research seeks to identify the characteristics and behavior of genes associated with breast cancer, pinpoint each cancer's unique "fingerprint" and personalize treatment further. "We are also trying to identify markers in the blood that can tell us whether cancer has traveled beyond the breast," says Vered Stearns, M.D., associate professor of oncology and co-director, Breast Cancer Program, Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins Hospital in Baltimore.

Trends in Treatment

THEN Overkill in use of radiation and chemotherapy, both of which have potentially serious side effects.

NOW Identification of three breast cancer subtypes and the advent of medications for each subtype have shown chemotherapy is not always indicated. More than half of U.S. women with breast cancer have estrogen-receptor-positive tumors that have not spread to the lymph nodes.

YOUR BREAST CANCER EXPERTS

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What you need to know

➔ 89 percent of women with breast cancer survive for five years or more, thanks to better detection and more personalized therapies

➔ Experts now divide breast cancer into three subtypes, and are developing treatments for each type

➔ More than half of breast cancer sufferers can skip chemo and radiation and opt for medications with fewer side effects, like tamoxifen

70

The percentage of women with breast cancer who can choose breast-sparing lumpectomy instead of total mastectomy

These can often be treated with oral hormonal therapies, such as tamoxifen (Nolvadex and others). Women with HER-2 positive tumors can be treated with trastuzumab (Herceptin). The side effects of these newer drugs are generally more easily tolerated than those of chemotherapy.

For women who can benefit from chemotherapy, there are many more options along with new add-on medications that can help prevent side effects such as nausea and vomiting. On the radiation front, some women with early-stage cancers may be candidates for a three-week course instead of the standard six-week course. Women with stage 1 or stage 2 tumors no bigger than three centimeters may qualify for a targeted type of radiation, MammoSite. This pinpoints the area in which cancer is most likely to recur while sparing surrounding tissue.

THE FUTURE Increasingly targeted treatments will continue to reduce the number of women who require radiation and chemotherapy. A major goal is to find a cure for breast cancer that has spread (metastatic cancer).

Strides in Surgery

THEN Removal of the entire breast (mastectomy) was the gold standard. In addition, surgeons took up to 30 lymph nodes from the armpit if even one or two tested positive.



Avoid chemo? New gene test may say yes

When deciding whether to prescribe chemotherapy after breast cancer surgery, doctors have traditionally relied on the size and grade of a woman's breast tumor, along with the cancer status of her lymph nodes. For the past couple of years, women with early-stage ER-positive breast cancer have had another test at their disposal. The Oncotype DX test, which examines the activity level of 21 genes within tumor cells, can predict how aggressive a tumor is and how likely cancer is to recur. This helps doctors identify women who may not benefit from chemotherapy.

BIGSTOCK

A RECENT STUDY SHOWS MOST SURGICAL BIOPSIES COULD BE REPLACED BY LESS INVASIVE NEEDLE BIOPSIES . . .

NOW Lumpectomy—in which only the tumor and the area around it are removed—has replaced the need for mastectomy in at least 70 percent of women. At the same time, more women with breast cancer or at high risk for it are electing to have mastectomies, influenced largely by new reconstructive techniques that reduce scarring, notes Patricia Dawson, M.D., Ph.D., a breast cancer surgeon at Seattle's Swedish Cancer Institute.

A groundbreaking study in the February 2011 issue of the *Journal of the American Medical Association (JAMA)* has dramatically altered practice standards regarding

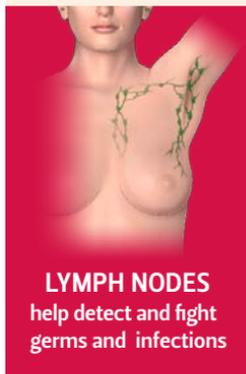
92 percent of women with early breast cancer that has spread to a lymph node can avoid complications of extensive lymph node removal

lymph-node removal as well. The study showed that for women whose cancers meet certain criteria (less than five centimeters and with no more than three nodes containing tumor cells), leaving the axillary, or armpit, nodes in place has no effect on long-term survival. This means some 92 percent of women with early-stage breast cancers that have spread to a nearby lymph node can avoid complications commonly caused by extensive lymph node removal (see “Less Lymphedema?” at top right).

THE FUTURE Doctors continue to strive to make breast surgery even less visually damaging. Nipple-sparing mastectomy, which removes the breast but allows a woman to keep her nipple and areola, will likely become more widely available in carefully selected patients, as more surgeons perfect these techniques.

Less Lymphedema?

When doctors take out numerous lymph nodes to halt cancer's spread, it can compromise your lymphatic system, which filters harmful fluids from your tissues. Fluids can build up under your skin, causing uncomfortable, unsightly arm swelling called *lymphedema*. This may require extensive physical therapy. Last February's *JAMA* study (see second paragraph at left) may reduce the rates of this common post-surgical problem.



LYMPH NODES
help detect and fight
germs and infections

 **Can electric blankets cause breast cancer?** Get the answer by paying a visit to healthcommunities.com/blankets.