CANCERcare® Connect™

Developments in Breast Cancer Treatment

Presented by

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Find out about:

- Genes and breast cancer
- New hormone treatments
- Safer, more effective medications
- Where to gather information

CANCERcare®
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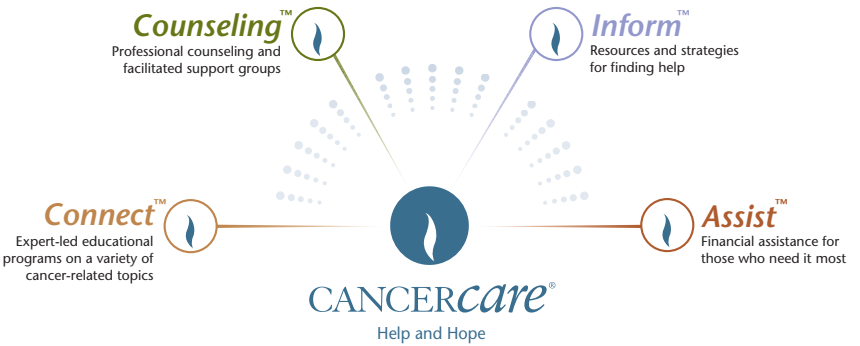

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Contacting CancerCare

National Office
CancerCare
275 Seventh Avenue
New York, NY 10001
E-mail: teled@cancercare.org

Administration
Tel: 212.712.8400
Fax: 212.712.8495
E-mail: info@cancercare.org
Website: www.cancercare.org

Services
Tel: 212.712.8080
1.800.813.HOPE (4673)

Health care professionals interested in ordering bulk quantities of this booklet for their patients should contact *publications@cancercare.org* for more information.

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The information in this booklet is based on a Telephone Education Workshop, conducted by Cancer*Care* and sponsored by the Breast Cancer Alliance, on the latest developments in breast cancer treatment reported at the December 2005 San Antonio Breast Cancer Symposium. This booklet is also based on a November 2003 Telephone Education Workshop conducted by Cancer*Care* in partnership with the Breast Cancer Alliance; The Breast Cancer Research Foundation; Breast Cancer Resource Committee, Inc.; Hadassah, The Women's Zionist Organization of America, Inc.; Intercultural Cancer Council; Living Beyond Breast Cancer; National Alliance of Breast Cancer Organizations (NABCO); Rise Sister Rise; and the Y-ME National Breast Cancer Organization.

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What's happening now in breast cancer treatment is revolutionary.

Deaths from breast cancer are falling. In part, that's due to early detection and better surgical techniques. Scientists have also learned an enormous amount about breast cancer—indeed, about cancer in general—and that has led to better drug treatments for all women with breast cancer, no matter the stage of their disease. We'll focus on those drug treatments. And we'll answer the questions you may have about making the most important medical decisions of your life.

It's All in the Genes

Cancer cells are your own body's cells, with an important difference: the DNA of a tumor cell is abnormal. DNA contains instructions in the form of genes that tell each cell how to behave—which proteins to make so the cell can function. Our increased understanding of these genetic instructions, and how they can become garbled, has led to improved treatments for breast cancer.

You may have heard about the Human Genome Project. Its goal is to provide a roadmap of all of our genes and how they operate. Two genes are especially important for breast cancer diagnosis and treatment. One of them controls the estrogen receptor, which makes the breast cancer cell respond to estrogen. This female hormone, most of which is produced by the ovaries before menopause, promotes the growth of some breast cancers. After menopause, when the ovaries stop functioning, another hormone called androgen is converted into estrogen in the body. Both estrogen and another hormone, progesterone, can fuel the growth of breast cancer cells. To find out whether the cells are **hormone receptor-positive**, doctors conduct special tests.

Choosing the right treatment for breast cancer depends upon knowing the results of these tests. Although hormone receptor-positive breast cancers can spread to other parts of the body, they tend to grow more slowly than **hormone receptor-negative tumors**. Hormone receptor-positive breast cancers respond to hormone treatments such as tamoxifen (Nolvadex). These treatments slow tumor growth by blocking the attachment of hormones to receptors on breast cancer cells—depriving the tumor cells of the fuel they depend upon for growth.

STOPPING ESTROGEN AT ITS SOURCE

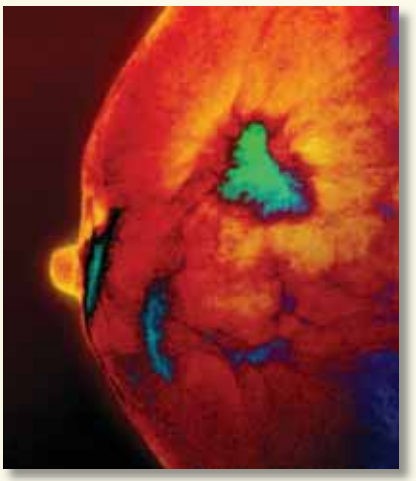
Now there is a new class of drugs that help prevent estrogen from forming. These drugs are called **aromatase inhibitors**. Letrozole (Femara), anastrozole (Arimidex), and exemestane (Aromasin) are a few examples.

As their name implies, these drugs inhibit aromatase, an enzyme that turns androgen, produced in the adrenal glands, into estrogen. In essence, aromatase inhibitors stop estrogen at its source, *before* it's made in the body. So tumors that depend upon estrogen are deprived of the "fuel" they need to grow.

Aromatase inhibitors are intended mostly for postmenopausal

Early Detection—Our Best Weapon

One reason more women are surviving breast cancer is early detection. More women over 40 are getting regular mammograms, the x-ray images of the breast that can find tumors in their earliest, most treatable stage. Mammograms do save lives, no matter how much confusing debate you've heard. Still, most women who should have mammograms do not get them.



Color-enhanced mammogram revealing a tumor (green) in the left breast.

To ensure the most accurate and reliable test, schedule your mammogram at a facility certified by the Food and Drug Administration. It's best when radiologists who specialize in mammography are the ones evaluating your films.

Researchers are now studying new approaches to breast imaging. Of particular promise is magnetic resonance imaging, or MRI. It's a highly accurate and sensitive test. Digital mammography, with it's more precise and detailed pictures, is another technique under study.

women. That's because before menopause, a woman's ovaries make so much estrogen, limiting the action of aromatase doesn't make much difference.

For women at high risk who have not yet reached menopause, some researchers are considering using hormonal injections to

stop the ovaries from making estrogen. Not only would that deprive hormone-dependent breast cancer cells of estrogen, it would also allow aromatase inhibitors to work more effectively.

Clinical trials, the gold standard for testing new treatments, are now comparing tamoxifen with aromatase inhibitors. These studies will help determine which type of medication is best for postmenopausal women whose breast cancer can be treated with the hormones that stop estrogen. It appears that anastrozole and letrozole are a bit better than tamoxifen at preventing breast cancer from returning. But more study is needed to find out whether aromatase inhibitors should be taken *instead of* tamoxifen.

What about women who have already taken tamoxifen, two, three, or even five years ago? Clinical trials have shown that taking aromatase inhibitors *after* tamoxifen can still cut the recurrence rate of breast cancer by half. These medications also reduce the size of new breast tumors by half. It may turn out that women with breast cancer should take aromatase inhibitors for up to 10 years after initial treatment. Until we have more firm answers about the best combination of aromatase inhibitors and tamoxifen, you should talk with your health care team about what's right for you.

You may also wish to talk with your doctor about joining a clinical trial. There's no question that such studies have led to advances in cancer care. Clinical trials have brought us to what many scientists believe is a turning point in the treatment of breast cancer. Your doctor can guide you in making a decision about whether a clinical trial is right for you.

THE RIGHT TREATMENT FOR THE RIGHT PERSON

For some breast cancers, there's another contributing genetic problem, aside from hormone receptors. A gene called **HER2** makes a protein, also called HER2, which controls cell division. If a cancer cell has too much HER2—that is, if it's HER2 positive—it tends to grow more rapidly. But several treatments

Better Surgery

One of the biggest advances in better breast cancer treatment is improved surgery. About two thirds of all women with breast cancer are diagnosed with early-stage disease. Studies show that their chances of survival are equally good whether they have a mastectomy (full removal of the breast) or a lumpectomy (removal of just the tumor with some surrounding tissue) followed by radiation.

Another significant step forward is **sentinel node mapping**. This term refers to finding the first (or sentinel) lymph node in the armpit into which breast cancer cells would migrate. If the sentinel node is cancer-free, chances are that other, nearby **lymph nodes** are also clean and can be left in place.

In the past, surgeons routinely cut out many **axillary lymph nodes** for biopsy to find out whether the cancer had spread. But if the doctor can be assured that it's not necessary to remove those nodes, the woman with breast cancer can avoid a painful swelling of the arm called lymphedema.

actually work better in women whose tumors are HER2 positive. For instance, a biologically engineered antibody called trastuzumab (Herceptin) targets and kills those cancer cells, as do the drugs paclitaxel (Taxol) and doxorubicin (Adriamycin).

Scientists have expressed great enthusiasm about the recent results of several large clinical trials that tested trastuzumab. They are calling the results "simply stunning" and strong enough to change the way breast cancer is treated. Clinical trials showed that trastuzumab, when used as a treatment

after surgery or in combination with paclitaxel, reduced the risk of recurrence by half. Unlike chemotherapy, trastuzumab is a targeted treatment designed to zero in on cancer cells and leave healthy cells alone. In the next few years, researchers will know more about how long women should use trastuzumab.

By understanding the genes that cause cancer, we can be more selective in choosing the right treatment. You could say that treating cancer is becoming more like treating an infection. When a patient has an infection, the doctor cultures organisms from the site of the infection to find out what antibiotics would work best, rather than shooting in the dark.

Safer, More Effective Treatment

Everyone knows the old saying, "The cure is worse than the disease." Some people with cancer may still feel that way, especially when the drugs they are taking make them feel sick.

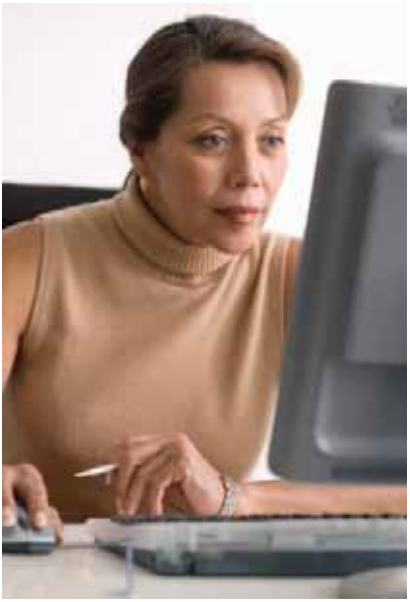
Doctors used to believe that high doses of medication were needed to treat cancer. But the drugs were so toxic to healthy cells that doctors were forced to cut back the doses or give them less frequently, making treatment less effective. The question became: Can we use lower doses more often, still kill cancer cells, and keep bad side effects at bay? It turns out that doctors can apply mathematical models to answer this question. These models accurately predict how fast a tumor grows and how quickly a patient responds to medication.

A large clinical trial conducted in the United States and Canada proved that pushing drugs to their highest possible level is not necessarily the right thing to do. Rather, taking a moderate dose more often—say, every two weeks instead of every three—is a better way to kill more cancer cells. In addition, giving patients a drug such as filgrastim (Neupogen) or pegfilgrastim (Neulasta) promotes the body's own defenses to help ward off infection. Researchers continue to refine treatment to make it less toxic and much more effective.

Knowledge Is Power

When you're first diagnosed with cancer, it's like suddenly finding yourself in an alien environment. The language is new, the customs aren't clear, you're not sure what to expect from those around you. But as with any strange and new experience, the key to finding your way is to gather information. Knowledge *is* power.

Here are some ways to navigate around this strange new world:



Do your research The Internet is a great place to start, but even if you're not computer savvy, there is a lot of information available through the mail and by telephone. Organizations such as Cancer*Care* offer free—and reliable—information. Visit www.cancercare.org or call 1-800-813-HOPE (4673). Cancer*Care* has worked with the American Society of Clinical Oncology on a website called *People Living with Cancer* (www.plwc.org). For more resources, see page 16.

Take your time You have some difficult medical decisions to make. Don't rush. When you're first diagnosed, or even when you have had a recurrence, you may feel a sense of urgency, the need to act immediately. But you do have a window of time. Don't let anybody stampede you into choices that you do not feel comfortable with. Gather the facts you need before you make your decision.

Speak up When you talk with your doctor, it's important

to remember this: There are two experts in the room during your conversations. Your doctor is the expert in biology and medicine. You are the expert about your own life. Don't be afraid to bring up any topic of concern to you. Your doctor can't treat a problem if you don't make him or her aware of it.

Questions to ask your doctor:

- What is the long-term treatment plan?
- Are you basing this plan on peer-reviewed clinical trials?
- What are the risks and benefits of my treatment?
- Who will be on my treatment team?
- Who is the key nurse or doctor I can talk with if there's a problem?

Let your doctor know that you want to be a member of your treatment team and that being informed will make it easier for you to adhere to the treatment prescribed. There will always be people who say, "Doctor, I don't want to know. Just do whatever you have to." And that's fine if that is your coping style. But most people would prefer to know more—it helps them feel that they are in control.

Seek a second opinion

Don't hesitate to ask about seeking a second opinion if you're unsure about the information your doctor is offering you. Any good health care professional is not going to be offended or upset if you want to talk to somebody else before you make a decision that will have a profound impact on your life.

Sometimes, no matter how highly recommended the doctor, you may find that you cannot get along. If this creates a barrier,

talk to your doctor about the problem. But if the relationship just won't work, let the doctor know you would like to make a change. Be sure your decision to make a change is based on reality and not on the (understandable) need to find someone who will tell you what you want to hear.

THE ZEN OF DECISION MAKING

Sometimes it's hard to choose among various options; the decisions are just too close and the differences too subtle. Here's a technique that may help you: Once you gather as much information as you can, let it roll around in your head without obsessing about making a decision. Psychologists call this "incubating." Over a period of time—it could be hours or days—the right decision becomes obvious. Trust yourself, and the choices you ultimately make will be the best ones for you and for your family.

Frequently Asked Questions

Q How long after stopping tamoxifen would it still be effective to take letrozole?

A The short answer is we don't yet know for sure. Clinical trials were structured so that patients began using letrozole immediately after a five-year period of taking tamoxifen. But one study included women who did not take letrozole until many years after stopping tamoxifen, and they still benefited from it. Of course, the longer you stay cancer-free after your initial treatment, the lower is your risk of relapse. However, the risk of developing a new tumor in the affected breast or in the breast on the other side is still real. The question of how late you can start letrozole after tamoxifen is being studied further. But some oncologists are already prescribing letrozole no matter how long ago a woman stopped using tamoxifen. New tests suggest that it could be used instead of tamoxifen.

Q I had HER2-positive breast cancer. My chemotherapy ended five years ago. Would Herceptin still help me?

A At a recent scientific meeting, the consensus was that if a woman with breast cancer has finished her chemotherapy within a year of her diagnosis, adding Herceptin as part of her treatment should be considered. Right now we just don't have any information about using Herceptin two or more years after finishing treatment. New studies will be trying to fill in that gap.

Q Should a woman who has osteoporosis take an aromatase inhibitor?

A One of the side effects of aromatase inhibitors such as letrozole, anastrozole, or exemestane is to deprive bone of estrogen and to promote osteoporosis—so-called brittle bone disease. That might be a problem if we didn't have other ways to prevent and treat osteoporosis. But there are bone-building drugs available such as alendronate (Fosamax) and risedronate (Actonel), both of which can be taken by mouth. Most women who take an aromatase inhibitor are automatically given one of these drugs as well. An intravenous drug called zoledronic acid (Zometa) can prevent the bone loss associated with aromatase inhibitors. In the future we hope to have aromatase inhibitors that don't deprive the bones of their strength, as well as better bone-building drugs.

Q I've heard that aromatase inhibitors can cause joint pain, sometimes severe enough to stop treatment. What do doctors know about this?

A Various clinical trials for breast cancer have linked aromatase inhibitors with higher rates of joint and muscle pain than tamoxifen or placebo (dummy pills). For example, in a Canadian study of nearly 5,200 women, 21 percent of those on letrozole experienced joint pain compared with 16 percent of the women taking placebo. Although research is continuing, right now it appears that the only way to stop the joint pain is to stop taking the medication.

Q I'm on an aromatase inhibitor, and I feel so tired all the time. How can I deal with fatigue?

A Fatigue is a problem for many people with cancer, whether they are taking an aromatase inhibitor or not. This is a symptom to which attention *must* be paid. That's because, although it might be caused by something as simple as stress, fatigue can

also signal something as serious as anemia or a low white blood cell count, which can lead to infection. So the first thing you and your doctor must do is determine *why* you feel tired.

If your fatigue is caused by a low white blood cell count, your doctor may prescribe a white blood cell-promoting drug such as filgrastim or pegfilgrastim. Both keep up the number of infection-fighting white blood cells.

If your fatigue is caused by anemia, or a loss of red blood cells, your doctor may prescribe a drug such as epoetin alfa (Procrit) or darbepoetin alfa (Aranesp) to stimulate the bone marrow to produce more red blood cells. Injections of these drugs can ward off anemia and the need for blood transfusions.

If your fatigue is caused by depression or stress, your doctor may suggest counseling or an antidepressant medication. You may also find meditation or hypnosis helpful.

As researchers study ways to fight fatigue with drugs such as methylphenidate (a sedative for children with attention deficit/hyperactivity disorder, but a stimulant in adults), and other techniques, such as acupuncture, there are steps you can take now to relieve fatigue:

Pace yourself Try to stay active, but find your own comfort level. Conserve your energy for your top priorities.

Take frequent power naps Thirty-minute naps offer a boost without upsetting the day/night sleep schedule.

Delegate When relatives and friends ask how they can help, give them a concrete task. Ask them to run errands, do household chores, or pick up the dry cleaning.

Do simple exercises Walking and yoga help many people with cancer regain their energy. Small studies at Johns Hopkins University found that breast cancer patients benefited from a self-paced walking program that gradually increased from 10 to 30 or 45 minutes a day. At Cancer*Care,* people with cancer have improved their energy levels by taking yoga classes.

Q Can removing the ovaries prevent breast cancer?

A The bottom line is we're not sure. But large clinical trials now under way hope to answer that question. Some women at high risk for breast or ovarian cancer have had their ovaries (and/or breasts) removed as a preventive measure. It's a drastic step and a big decision. Whether such procedures are right for you depends on a number of factors. Are you still planning a family? Are you prepared to deal with side effects such as a loss of sex drive? How high is your cancer risk (that is, do you have a genetic mutation in either the genes BRCA1 or BRCA2)? This is a complex and uncertain area. You need to discuss your particular case with your doctor.

Q Should I join a clinical trial?

A A well-structured clinical trial is the only way scientists can improve cancer care. Not only can trials benefit those who take part, they help untold numbers of patients in the future. Participants are usually placed randomly into one of two groups: those who receive the highest-quality standard treatment, and those who receive the experimental treatment, which scientists have reason to believe *may* prove to work better. Few cancer trials use placebos ("dummy pills"). And no clinical trial would deprive a person of the high-quality standard treatment known to benefit their condition. Careful laboratory and animal studies are conducted before new treatments are given to people with cancer. By the time clinical trials reach phase III, which usually involve large numbers of patients, doctors are confident the experimental treatment is safe.

To find out more, talk with your doctor and visit the website of the National Cancer Institute (www.cancer.gov/clinicaltrials) or call 1.800.4.CANCER (1.800.422.6237) Monday through Friday, 9 AM to 4:30 PM local time. Deaf and hard-of-hearing callers with TTY equipment may call 1.800.332.8615.

Glossary

aromatase inhibitors Drugs that block estrogen at its source by interfering with the production of estrogen in postmenopausal women. An effective treatment for estrogen receptor-positive breast tumors.

axillary lymph nodes Lymph nodes in the armpit (axilla). They are connected to the breast by lymph vessels. When cancer spreads beyond the breast, the tumor cells travel along these vessels to axillary nodes and from there to other sites throughout the body.

HER2 A gene that makes a protein, also called HER2, that controls cell division. If a breast cancer cell has too much HER2 —that is, if it's HER2 positive—it tends to grow more rapidly.

hormone receptor-negative tumors Breast cancer tumors that lack receptors, or entryways, for female hormones. Such tumors do not depend on hormones for their growth. These breast tumors tend to grow more quickly than hormone receptor-positive tumors.

hormone receptor-positive tumors Breast cancer tumors that depend on female hormones for their growth. These tumors tend to grow more slowly than hormone receptor-negative tumors and respond better to hormonal treatments.

lymph nodes Small, bean-shaped collections of immune system cells, important in fighting infections.

sentinel node mapping Finding the first (or sentinel) lymph node in the armpit into which breast cancer cells would migrate. If the sentinel node is cancer-free, chances are that other, nearby lymph nodes are also clean and do not have to be removed during surgery.

Resources

Cancer*Care*
1.800.813.HOPE (4673)
www.cancercare.org

American Cancer Society
1.800.ACS.2345
www.cancer.org

American Society of Clinical Oncology
People Living With Cancer
www.plwc.org

National Cancer Institute
Cancer Information Service
1.800.4.CANCER
www.cancer.gov

Breast Cancer Alliance
203.698.0014
www.breastcanceralliance.org

Breast Cancer Resource Committee
202.463.8040
www.bcresource.org

Susan G. Komen Breast Cancer Foundation
1.800.462.9273
www.komen.org

Living Beyond Breast Cancer
888.753.5222
www.lbbc.org

Rise Sister Rise
www.bcresource.org/rise.htm

Y-ME National Breast Cancer Organization
1.800.221.2141 (English)
1.800.986.9505 (Spanish)
www.y-me.org

The information presented in this patient booklet is provided for your general information only. It is not intended as medical advice and should not be relied upon as a substitute for consultations with qualified health professionals who are aware of your specific situation. We encourage you to take information and questions back to your individual health care provider as a way of creating a dialogue and partnership about your cancer and your treatment.

All people depicted in the photographs in this booklet are models and are used for illustrative purposes only.

DNA illustration on page 2 courtesy of US Department of Energy Human Genome Project; mammogram on page 4 © 2006 Zephyr/Photo Researchers, Inc.

From the moment of diagnosis, let the hope begin.

When Fran was diagnosed with cancer, she knew that she and her daughter, Rachel, would need support. Both found help and hope with Cancer*Care*.

Since 1944, our professional oncology social workers have provided **free** counseling, education and practical help for anyone touched by cancer. Cancer*Care* is with you every step of the way.

If we can help you and your family, please call us at 1-800-813-HOPE (4673) or visit www.cancercare.org.

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Help and Hope

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