

# ASCO

*Information for  
People Living  
with Cancer*

## BISPHOSPHONATES FOR BREAST CANCER



# Welcome

The American Society of Clinical Oncology (ASCO) is the world's leading professional society of multidisciplinary medical professionals who treat people with cancer. ASCO's more than 20,000 members from the United States and abroad set the standard for patient care worldwide and lead the fight for more effective cancer treatments, increased funding for clinical and translational research, and, ultimately, cures for the many different cancers that affect 1.3 million Americans every year. ASCO publishes the semi-monthly *Journal of Clinical Oncology* (JCO), the foremost, peer-reviewed journal focusing on clinical cancer research, and produces the award-winning website People Living With Cancer ([www.plwc.org](http://www.plwc.org)), which provides oncologist-vetted cancer information to help patients and families make informed health-care decisions.

To help doctors give their patients the best possible care, ASCO asks its medical experts to review the latest research on issues in cancer care and develop recommendations called clinical practice guidelines.

To help patients understand their cancer care, ASCO created this patient guide, based on the guidelines ASCO's experts developed to help people with breast cancer.

As you read this guide, please keep in mind:

- Every person treated for cancer is different. These recommendations are not meant to replace your or your doctors' judgment. The final decisions you and your doctors make will be based on your individual circumstances.
- These recommendations do not apply to clinical trials (research studies). Many of the drugs here continue to be studied in clinical trials. If ASCO does not recommend a drug or practice, it is often because there is not enough information to provide such recommendations, not because they are useless or harmful.

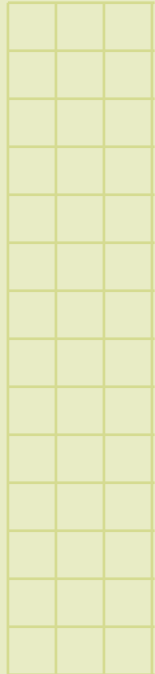


## What is breast cancer?



Breast cancer is a disease in which cells become abnormal, grow and divide without the regulations on normal cells, and form a mass called a tumor. Most breast tumors are benign (not cancer), but those that have the ability to spread to the lymph nodes and other parts of the body are called malignant (cancer).

Breast cancer is the most common type of cancer in women (excluding cancers of the skin), and the second leading cause of cancer death in women (after lung cancer). Although rare, breast cancer is also found in men. When detected at an early stage, breast cancer is very treatable. Sometimes, however, breast cancer is found at a more advanced stage, when the cancer has already spread (metastasized). Breast cancer first spreads to the lymph nodes and then on to other parts of the body such as the liver, brain, or bone. Of the sites that breast cancer has been shown to spread, metastasis to the bone is the most common and the majority of women with advanced breast cancer will experience bone complications. When cancer spreads to the bone, significant pain and loss of movement can occur. Because advanced breast cancer is more difficult to treat and cure, efforts have been made to develop drugs that help to reduce the effects of breast cancer on the bones.



Information in ASCO's patient information materials is not intended as medical advice or as a substitute for the treating doctor's own professional judgment; nor does it imply ASCO endorsement of any product or company.





This booklet discusses a type of drug called bisphosphonates that may be offered to people with advanced (metastatic) breast cancer. These drugs have been shown, in many cases, to reduce the negative effects that breast cancer has on bone. These drugs have not, however, been shown to extend life or slow the growth of cancer.

If breast cancer spreads to the bones, it causes increasing damage to the bones and bone marrow. Normally, people have balanced levels of cells called osteoclasts and osteoblasts that work together to shape and maintain healthy bones. Osteoclasts destroy old bone, and osteoblasts help to build new bone in its place.

People with bone metastases have abnormally high levels of osteoclasts. When osteoclasts break down and absorb old bone faster than new bone is formed, fractures (breaks), bone pain, osteoporosis (thinning of the bones), and hypercalcemia (high levels of calcium in the blood) can result.





## About the Expert Panel

ASCO formed a panel of experts to develop this guideline. The members included medical, surgical, and radiation oncologists, health services researchers, statisticians, and a pharmacist. A patient advocate was also included in the panel's membership.

As they evaluated research, they considered studies that measured the effectiveness of bisphosphonates in different ways.

- Number of bone fractures per year (also called skeletal related events or SREs)
- Time to first bone fracture after beginning bisphosphonate treatment
- Number of bone fractures that needed treatment with radiation therapy for pain control
- If patients who take bisphosphonates live longer than those who don't
- How bisphosphonates are given (by mouth or intravenously)
- If patients who take bisphosphonates have less pain than those who don't
- If patients function better overall on bisphosphonates than not (performance status)

The panel worked together using the evidence and their own expertise, and formed their opinions by *consensus* (agreement from everyone in the group).

## What are the recommendations?

### Who may receive bisphosphonates?

The two bisphosphonates given to women with breast cancer are pamidronate and zoledronic acid. They have been found in research studies to be equally effective, but differ in cost (pamidronate is less expensive) and amount of time required to administer each dosage.

**Pamidronate:** Given every three to four weeks; each infusion takes two hours to administer.

**Zoledronic acid:** Given every three to four weeks; each infusion takes 15 minutes to administer.

Both are given intravenously (IV) in a chemotherapy infusion room at a doctor's office or hospital.

Through results of clinical trials, these drugs have been found to be appropriate for women in these situations:

- Women whose x-rays show bone metastases
- Women whose x-rays are normal, but whose bone scans, computed tomography (CT) scans, or magnetic resonance imaging (MRI) scans show evidence of bone metastases

Bisphosphonates are not recommended for women who have an abnormal bone scan but normal x-rays, CT scans, and MRI scans.





## What will your doctor watch for when you are taking bisphosphonates?

Based on current research, bisphosphonates are best monitored using these guidelines:

- Women with pre-existing renal (kidney) disease and a blood creatinine level less than 3.0 mg/dL may safely take bisphosphonates. Creatinine is a type of protein in the blood that may indicate kidney damage if found at levels above 3.0 mg/dL.
- Infusion times should be at least two hours for pamidronate and at least 15 minutes for zoledronic acid.
- According to the FDA, blood creatinine levels should be tested before each infusion of any bisphosphonate. Blood tests for calcium, electrolytes, phosphate, magnesium, and hematocrit/hemoglobin should also be monitored regularly.

## Can biochemical markers tell if bone damage has already occurred?

For some types of cancer, doctors can test a person's blood for higher than normal levels of certain substances that might indicate that a tumor is spreading, has come back, or has stayed the same. These substances are called biochemical markers, biomarkers, or tumor markers. Based on available research, there are no biochemical markers that may help doctors monitor how bisphosphonates are working in women with breast cancer.



## How long should bisphosphonates be used?

How long bisphosphonates are used should be decided according to each woman's overall health and preference. Bisphosphonates are safe to use as long as a woman remains able to perform her normal daily activities (called performance status).



## Can bisphosphonates help control pain?

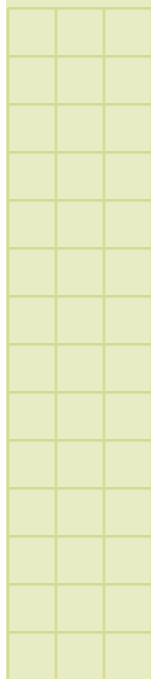
There are many ways to help control pain for women who have bone damage from breast cancer. These include painkillers, nonsteroidal anti-inflammatory drugs (NSAIDs), steroids, certain surgical procedures, and radiation therapy.

Radiation therapy may be effective at helping to control pain for women who have bone damage from breast cancer. However, there is not enough evidence to suggest bisphosphonates be given along with radiation therapy unless chemotherapy and/or hormonal therapy is also being used.

## Can bisphosphonates be used to prevent or slow bone metastases?

Research is ongoing to determine if bisphosphonates can be used to prevent or slow bone metastases. At this time, women in these situations should take bisphosphonates *only* as part of a clinical trial:

- Women who have not developed detectable bone metastases
- Women who have breast cancer that has spread to other areas of the body but not the bones
- Women with breast cancer who are at high risk of bone metastases





## What is the risk of developing osteoporosis?

Most women with breast cancer are at risk of developing osteoporosis. Risk of both breast cancer and osteoporosis increases with age. Also, many cancer treatments can lead to osteoporosis, so it is important for women and their doctors to try to detect osteoporosis as early as possible. There are many ways to treat or slow down osteoporosis.

- Taking calcium and vitamin D supplements
- Exercising
- Avoiding smoking
- Using bisphosphonates alendronate and risedronate
- Taking raloxifene may help some women, but it is not recommended for women who have already taken tamoxifen for five years. Raloxifene is a kind of selective estrogen receptor modulator (SERM) that behaves in some ways like estrogen.

Hormone treatments (such as estrogen and progesterone) are frequently given to women who have not been diagnosed with breast cancer. Hormone treatments are not safe for women with breast cancer.

## Areas for further research



The information available on bisphosphonate use for women with breast cancer still has many gaps. Bisphosphonates are a promising form of treatment and support for women with breast cancer. Through participation in clinical trials, answers to these questions may one day be available:

- How effective are the other bisphosphonates besides pamidronate and zoledronic acid?
- What dose, length of treatment, and length of infusion time is the most effective with the fewest side effects?
- Are bisphosphonates useful in treating early breast cancer by preventing or delaying the development of bone metastases?
- What other types of drugs are available to help slow bone damage in women with breast cancer?

## Where can I get more information?

The original guidelines were published in ASCO's *Journal of Clinical Oncology* (*J Clin Oncol* Nov 1 2003;21). For a copy of the original guidelines, visit [www.asco.org](http://www.asco.org), call 703-299-0150, or send an e-mail to: [guidelines@asco.org](mailto:guidelines@asco.org).

For more information about cancer, visit People Living With Cancer at [www.plwc.org](http://www.plwc.org), ASCO's website for patients, families, and the public.

For more information about bisphosphonates, patients should speak directly with their doctor.

## Resources

Many organizations offer support to people with cancer and their families. Ask your doctor or call your local hospital to find out about such groups in your community. In addition, these organizations can provide information or educational materials about breast cancer.

### **Living Beyond Breast Cancer**

10 E. Athens Avenue, Suite 204  
Ardmore, PA 19003  
610-645-4567  
[www.lbbc.org](http://www.lbbc.org)

### **Cancer Care**

National Office  
275 7th Avenue  
New York, NY 10001  
800-813-HOPE (4637)  
[www.cancercares.org](http://www.cancercares.org)

### **National Alliance of Breast Cancer Organizations**

9 East 37th Street, 10th Floor  
New York, NY 10016  
888-80-NABCO (806-2226)  
[www.nabco.org](http://www.nabco.org)

### **Nueva Vida, Inc.**

2000 P St., NW, Suite 740  
Washington, DC 20036  
202-223-9100  
[www.nueva-vida.org](http://www.nueva-vida.org)

**SHARE: Self-help for Women with Breast or Ovarian Cancer**

1501 Broadway, Suite 1720  
New York, NY 10036  
866-891-2392  
[www.sharecancersupport.org](http://www.sharecancersupport.org)

**Sisters Network, Inc.**

National Headquarters  
8787 Woodway Drive, Suite 4206  
Houston, TX 77063  
866-781-1808  
[www.sistersnetworkinc.org](http://www.sistersnetworkinc.org)

**The National Breast Cancer Coalition**

1707 L Street, NW, Suite 1060  
Washington, DC 20036  
800-622-2838  
[www.natlbcc.org](http://www.natlbcc.org)

**The Susan G. Komen Breast Cancer Foundation, Inc.**

5005 LBJ Freeway, Suite 250  
Dallas, TX 75244  
800-IM-AWARE (462-9273)  
[www.komen.org](http://www.komen.org)

**Y-ME National Breast Cancer Organization, Inc.**

212 W. Van Buren Street, Suite 500  
Chicago, IL 60607  
Hotline, English: 800-221-2141  
Hotline, Spanish: 800-986-9505  
[www.y-me.org](http://www.y-me.org)

# —THE ASCO— FOUNDATION

## **A Commitment to Service**

Through charitable giving, friends of The ASCO Foundation can become partners in the effort to reach our goal: the progressive control and ultimate cure of cancer.

## **Types of Giving**

Philanthropic funding of the educational programs is more important than ever. There are a number of ways to provide support for a better understanding and treatment of cancer.

**Unrestricted gifts** provide the flexibility needed to move quickly in unexpected directions in research and clinical applications, and help to cover the costs of those critical services of ASCO that are not entirely financed by other support.

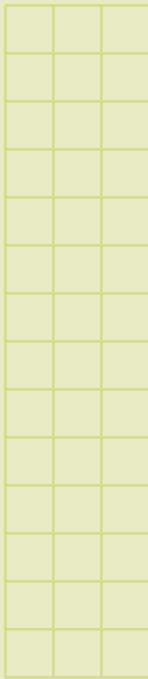
**Restricted gifts** benefit specific programs of the donor's choosing in any of the ASCO initiatives in patient care and education.

**Tribute gifts** can be made as memorial tributes, remembrance gifts, or as a way of honoring the Society's membership.

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# Notes



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