



# BONE HEALTH IN FOCUS

A REPORT ABOUT  
**BREAST CANCER'S**  
IMPACT ON BONES



# BONE HEALTH IN FOCUS

## THE SIGNIFICANCE OF BONE HEALTH IN PATIENTS WITH BREAST CANCER

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TODAY'S PATIENT WITH CANCER FACES A DAUNTING AMOUNT OF INFORMATION. SORTING THROUGH IT ALL AND DECIDING WHAT'S IMPORTANT CAN BE AN IMMENSE CHALLENGE. AND WITH SO MANY IMPORTANT ISSUES TO CONSIDER, *BONE HEALTH* MAY NOT BE AT THE TOP OF A PATIENT'S AGENDA.

BUT BREAST CANCER-RELATED BONE DISEASES - RESULTING FROM THE CONSEQUENCES OF CANCER TREATMENT OR FROM METASTASES TO BONE - CAN RESULT IN SIGNIFICANT PAIN AND DISABILITY. STUDIES HAVE ALSO SHOWN A CORRELATION BETWEEN CANCER-RELATED BONE DISEASES AND INCREASED RISK OF MORTALITY.<sup>1</sup> AT THE SAME TIME, IT IS AN UNDER-RECOGNIZED ISSUE THAT MAY NOT RECEIVE ENOUGH ATTENTION FROM PATIENTS - AND SOMETIMES EVEN FROM THEIR HEALTHCARE PROVIDERS.

THIS REPORT AIMS TO FILL THE EDUCATIONAL GAP BY ILLUSTRATING THE SERIOUS CONSEQUENCES OF CANCER-RELATED BONE DISEASES, SPURRING IMPROVED COMMUNICATION BETWEEN PATIENTS WITH BREAST CANCER AND THEIR HEALTHCARE PROVIDERS, AND INSPIRING ACTION TO IMPROVE BONE HEALTH IN PATIENTS WITH CANCER.

## BREAST CANCER-RELATED BONE DISEASES INCLUDE TWO PRIMARY CONDITIONS:

**CANCER TREATMENT-INDUCED BONE LOSS (CTIBL):** Bone loss due to certain breast cancer treatments, such as aromatase inhibitors (AIs).

**BONE METASTASES:** Cancer cells can separate from primary tumors and migrate to bone tissue where they settle and grow. These growing cancer cells then weaken and destroy the bone. The damage the tumor causes to the bone can result in a number of serious complications, collectively called skeletal-related events (SREs).



**Skeletal-related events (SREs) can occur when cancer has spread to the bone (metastasized) and weakened it. SREs include:**

- Pathological fracture
- Spinal cord compression
- Need for surgery to bone
- Radiation to the bone

Many patients with cancer possess limited knowledge about bone health during the course of their treatment. After being diagnosed with cancer, patients are understandably overwhelmed and often experience fear, anger, frustration, and confusion. They may not hear or understand everything a physician explains about treatment, or messages from their healthcare providers might not be clear. Before their diagnosis, patients may not have heard the words and terms they are now discussing with their doctor, and this lack of understanding may contribute to the communication challenges.

## AMY

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**(patient with breast cancer, diagnosed 2005)**

*My doctor mentioned something about it. I couldn't give you a whole lot of information about what he said just because... It was almost like he was speaking a foreign language to me because I didn't understand any of it.*

Recognizing the importance of addressing bone health in cancer and the need for improved dialogue, a committee of prominent patient advocates and Amgen® formed a multidisciplinary steering committee to address the issue. The committee commissioned a survey in partnership with Harris Interactive to assess the communication between patients with cancer and physicians about bone health in cases involving either non-metastatic or metastatic cancer, and to determine awareness levels and concern about bone health and cancer. The results from the Harris Interactive Survey, along with in-depth interviews with breast patients with cancer, are included in this report. For more information about the Harris Interactive Survey and the methodology it used, please refer to page 19 of this report. This report aims to raise awareness, empower patients, and encourage a better patient-physician dialogue around the critical issue of bone health.

## DONNA

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**(patient with breast cancer, diagnosed 2005)**

*No one wants cancer, but it's a journey and an opportunity to learn about yourself. I learned that it's tough but doable.*

## CANCER TREATMENT-INDUCED BONE LOSS IN PATIENTS WITH NON-METASTATIC BREAST CANCER

Adjuvant hormonal therapy for women with breast cancer is any treatment given after primary therapy to increase the chance of long-term survival. In breast cancer this includes aromatase inhibitors (AIs), which are designed to reduce estrogen concentrations in the body, but can also accelerate bone loss and increase the risk of fracture. Bone loss due to AIs is also known as cancer treatment-induced bone loss (CTIBL). Since women treated for adjuvant breast cancer with AIs are often over 65 and may have osteoporosis or pre-existing bone loss, AI therapy places them at an even greater risk of bone loss and fracture.<sup>2</sup>

To compound matters, once a patient has a fracture, there is an increased risk for additional fractures.<sup>3</sup> In many cases, bone loss is not even detected until the patient has a fracture.<sup>4</sup> The American Society of Clinical Oncology (ASCO) recognizes the risk of bone loss due to age and/or treatment in women with breast cancer and recommends regular assessment of bone health in this population.<sup>5</sup>

Improvements in cancer care, including earlier diagnosis and new treatment options leading to increases in survival rates, have the secondary effect of putting more patients at greater risk of developing cancer-related bone diseases.<sup>6</sup> The rate of CTIBL in women with breast cancer is unknown and depends on several factors, including the cancer therapy administered and the level of ovarian function.<sup>7</sup>

DESPITE THE SIGNIFICANCE OF CTIBL, MANY PATIENTS WITH BREAST CANCER HAVE RELATIVELY LOW CONCERN ABOUT BONE LOSS DUE TO AIS,<sup>8</sup> AND WOULD BENEFIT FROM ONGOING DISCUSSIONS WITH THEIR PHYSICIANS AROUND THE IMPACT OF AI TREATMENT.

More than two-thirds (69 percent) of the patients with non-metastatic breast cancer surveyed by Harris Interactive were aware that AI therapy could lead to bone loss, yet less than half (39 percent) of those patients who were aware said they were concerned or very concerned about bone loss.<sup>8</sup> In contrast, the vast majority (95 percent) of oncologists considered bone loss to be a serious issue for their patients with non-metastatic breast cancer on AI therapy.<sup>8</sup>

## THE IMPACT OF BREAST CANCER TREATMENT ON BONES

In women with breast cancer, AI therapy can lead to accelerated decrease in bone mineral density, thereby increasing the risk of fracture.<sup>9</sup> Ninety-five percent of the oncologists treating patients with breast cancer surveyed by Harris Interactive consider bone loss a serious issue for their non-metastatic patients on AI therapy.<sup>8</sup> Also, a majority (63 percent) report that their patients are concerned as well.<sup>8</sup> In a clinical trial, women with early stage breast cancer who received AI therapy had a 21 percent increased risk of fracture, directly resulting from bone loss, compared to women with non-metastatic breast cancer who did not receive AI therapy.<sup>10</sup>

MOST ONCOLOGISTS (63 PERCENT) BELIEVE THEIR PATIENTS ARE CONCERNED ABOUT TREATMENT-RELATED BONE LOSS.<sup>8</sup> HOWEVER, PATIENT-REPORTED CONCERN MAY BE LOWER THAN THEY BELIEVE. ONLY 39 PERCENT OF PATIENTS REPORTED MARKED CONCERN ABOUT BONE LOSS DUE TO AI THERAPY.<sup>8</sup>

Fractures can result in hospital and nursing home admissions and home care support services.<sup>11</sup> Pain and disability from a single vertebral fracture can last for several years.<sup>12</sup> Many postmenopausal women (32 percent) suffering an osteoporotic fracture required one or more days in the hospital or confinement to bed, with most individuals (83 percent) reporting limitations in usual activities.<sup>13</sup>

The Harris Interactive Survey reflects these concerns about the serious consequences of fractures. Medical oncologists treating breast cancer cite the following as primary consequences of CTIBL:

- The need for additional medical intervention (90 percent)<sup>8</sup>
- Interruption in cancer treatment (55 percent)<sup>8</sup>
- Changes in treatment regimen (51 percent)<sup>8</sup>

The vast majority of oncologists who treat patients with breast cancer also indicate that functional (92 percent) and physical limitations (89 percent) as well as disruptions to daily living (90 percent) are the most often reported physical consequences of bone fractures due to CTIBL. These categories were followed by surgery (81 percent) and time spent in a nursing home or rehabilitation facility (77 percent).<sup>8</sup>

In addition to the impact on general quality of life, patients with fractures can have a higher risk of death compared to those without a fracture. For example, death rates increase six-to-nine-fold due to hip and vertebral fractures.<sup>14</sup>

PERCENT OF MEDICAL ONCOLOGISTS WHO AGREE THAT THE CONSEQUENCES BELOW CAN RESULT FROM A FRACTURE.<sup>8</sup>



Functional Limitations



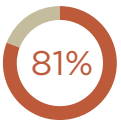
Time away from activities of daily living (social events, family, friends, etc.)



Physical Limitations, Immobility



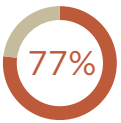
Detrimental to emotional health and well-being



Surgery



Concern about interrupting treatment for primary cancer to address bone complications



Time spent in nursing home or rehab facility

MOST WOMEN WITH EARLY-STAGE BREAST CANCER ARE POSTMENOPAUSAL AND ALREADY AT RISK FOR OSTEOPOROSIS, PLACING THEM AT INCREASED RISK FOR ACCELERATED BONE LOSS AND FRACTURES FROM AI THERAPY.<sup>2,15,16</sup>

## CURRENT TREATMENTS, UNMET NEEDS FOR CTIBL

Treatment options for bone loss are still relatively limited. Guidelines from ASCO for patients with breast cancer receiving AI therapy include calcium and vitamin D supplementation<sup>5</sup> and the use of bisphosphonates<sup>17</sup>, which are not FDA-approved for CTIBL.

A bone mineral density (BMD) test, which determines the amount of minerals (calcium, phosphorus, magnesium) within certain areas of bone, can predict the risk of fracture and other bone problems. This testing procedure, called bone densitometry (DEXA scan), is painless, non-invasive and involves minimal radiation exposure. Measurements are most commonly made over the lumbar (lower portion of spine) and over the upper part of the hip.<sup>18</sup>



## BISPHOSPHONATES

Although the mechanism of action for bisphosphonates is not completely defined, they are thought to attach to the surface of the bone and inhibit bone loss.<sup>19</sup> Depending on the specific drug and patient need, they are available both orally and intravenously, and can be provided daily, weekly or monthly.

Although most physicians (67 percent) are generally satisfied with current treatment options, a substantial percentage are not satisfied. Among oncologists who treat breast cancer, the Harris Interactive Survey indicated that almost one-third (29 percent) were dissatisfied or very dissatisfied with treatment options for CTIBL among patients with breast cancer.<sup>8</sup>

## CALCIUM AND VITAMIN D SUPPLEMENTS AND LIFESTYLE CHANGES

In addition to drug treatments, the National Osteoporosis Foundation recommends non-pharmacological interventions to reduce fracture risk for the general population. These recommendations include the adequate intake of calcium and vitamin D, regular weight-bearing and muscle-strengthening exercise, strategies for preventing falls and the avoidance of tobacco use and excessive alcohol intake.<sup>20</sup>

## BONE METASTASES: BONE IS A COMMON SITE FOR METASTASES IN PATIENTS WITH BREAST CANCER

Sixty five to 75% of patients with advanced breast cancer can eventually develop bone metastases throughout the course of their disease.<sup>21</sup> In this process, cancer cells travel from the primary tumor to bone tissue, where they settle and grow. The growing cancer cells weaken and destroy the bone around the tumor and can result in a number of serious complications called skeletal-related events (SREs), which are associated with increased pain, illness and death.<sup>1,22,23</sup>

THE MAJORITY OF ONCOLOGISTS ARE CONCERNED ABOUT THEIR PATIENTS WITH BREAST CANCER DEVELOPING BONE METASTASES (82 PERCENT) AND SRES (85 PERCENT). HOWEVER, CONVERSATIONS ABOUT THE TREATMENT OF BONE METASTASES ARE NOT FREQUENT. ONLY 34 PERCENT OF PATIENTS REPORTED DISCUSSING TREATMENT OPTIONS FOR BONE METASTASES WITH THEIR PHYSICIAN.<sup>8</sup>

Bone pain is one of the first signs that cancer has progressed this far,<sup>24</sup> and it affects approximately 70 percent of patients whose cancer has spread to the bone.<sup>25</sup> Bone pain can dominate the daily lives of patients with metastatic disease and can be characterized as severe.<sup>26</sup> It is important for patients to communicate any bone-related symptoms to their doctor as soon as possible so a bone scan can be performed to determine if bone metastases are present.

According to results from the Harris Interactive survey, more than half (53 percent) of oncologists treating breast cancer routinely scan their patients for bone metastases, and among those, 46 percent do so annually and 35 percent scan every six months.<sup>8</sup>

Fear is common among patients with metastatic breast cancer. Helene, a patient with breast cancer, said in a Harris Interactive interview, “Bone cancer progresses, and I hope it doesn’t go to the spine. That’s what absolutely horrifies me.... I’m worried about that. The worry never goes away. The fear is always there...and I have to learn to live with this.”

## SERIOUS CONSEQUENCES REQUIRE PROACTIVE COMMUNICATION: BONE METASTASES AND SKELETAL-RELATED EVENTS

Severe bone pain caused by bone metastases can severely impact a patient’s daily life. In fact, up to two-thirds of patients with bone metastases stemming from cancer experienced severe and debilitating bone pain.<sup>27</sup> Treating bone pain and preventing SREs is an important part of managing metastatic bone disease and should be included as part of the dialogue between physicians and patients.

FAMILIARITY WITH “SKELETAL-RELATED EVENTS” IS VERY LOW AMONG PATIENTS WITH BREAST CANCER, AT 30 PERCENT.<sup>8</sup>

The majority of physicians (66 percent) express concern about the interruption of primary cancer treatments due to the physical consequences of SREs, according to the Harris Interactive Survey.<sup>8</sup> However, this concern contrasts with low treatment rates of bone metastases and little discussion about treatments between patients and physicians.<sup>8,28</sup> The Harris Interactive Survey showed that the majority of patients with metastatic breast cancer surveyed (66 percent) have not discussed bone metastases treatment with their physician.<sup>8</sup>

## TREATING BONE METASTASES AND SKELETAL-RELATED EVENTS IN PATIENTS WITH BREAST CANCER

Patients with cancer continue to live longer, which may increase the likelihood that they experience an SRE.<sup>6</sup> SREs can have negative consequences, as patients with breast cancer without a fracture have been shown to survive longer than those who

experienced a fracture.<sup>29</sup> Current treatment options are underutilized but offer a positive impact on SREs associated with bone metastases, and improved skeletal health may provide important benefits to patients.<sup>27</sup>

Since their introduction, IV bisphosphonates have become a mainstay for managing metastatic bone disease from breast cancer, as reflected in the ASCO guidelines.<sup>5</sup> They have been shown to reduce cancer-related bone complications in specific malignancies by delaying the time to a first SRE and reducing the risk of developing a subsequent bone complication.<sup>30,31,32</sup> Regular monitoring of renal function is recommended when IV bisphosphonates are used for patients with bone metastases due to the potential consequence of renal deterioration.<sup>19,33,34</sup>

While IV bisphosphonate therapy may prove beneficial to patients, based on individual benefit and risk assessments, it may not be appropriate for all patients. Therefore, some patients may go untreated, remaining at risk for SREs. In fact, a recent study found that 54 percent of patients whose breast cancer had metastasized to the bone remained untreated with IV bisphosphonates for bone metastases.<sup>28</sup>

ALTHOUGH PHYSICIANS ARE GENERALLY SATISFIED WITH CURRENT TREATMENT OPTIONS, A SUBSTANTIAL PERCENTAGE ARE NOT SATISFIED. AMONG ONCOLOGISTS WHO TREAT BREAST CANCER, 20 PERCENT WERE SOMEWHAT DISSATISFIED OR NOT AT ALL SATISFIED WITH CURRENT OPTIONS TO TREAT OR DELAY SRES.<sup>8</sup>

## SURGICAL AND RADIATION TREATMENT OPTIONS FOR PATIENTS WITH ADVANCED CANCER

If a bone is at risk of fracture or has already fractured, surgery to the bone is performed to manage or prevent further complications. For patients with advanced-stage cancer, surgery to the bone is a major operation, and recovery can often be challenging and require hospitalization.

When drug treatments are not effective, one option to treating bone pain due to metastases in the spine is the injection of a special kind of cement, a technique called Vertebroplasty, into the bone of the vertebra. Kyphoplasty, another option for cancer that has spread to the spine, repairs fractures and restores the vertebrae to the correct position using a balloon that creates a mold for bone cement.<sup>35</sup>

Two current trends in radiation therapy for bone pain are hypofractionation, in which oncologists administer fewer larger radiation doses rather than many smaller doses,<sup>36</sup> and stereotactic body radiation therapy in which the dose is focused on a specific portion of bone or other tissue, often over several days.<sup>37,38</sup>

# PATIENTS WITH BREAST CANCER SPEAK OUT ABOUT BONE HEALTH

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The emotional consequences of cancer can be difficult to manage. And when cancer has metastasized to bone, the emotional repercussions can increase exponentially.



## DIKLA\*

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Dikla, 40, from Los Angeles, was first diagnosed in 2002 with stage 3 breast cancer. The diagnosis was upgraded two years later to stage 4 when bone metastases were clearly evident. PET/CT scans, which enable physicians to “see” tumor, showed a sub-centimeter speck on her T7 vertebrae (thoracic spine). But a year after chemotherapy and radiation, Dikla developed excruciating back pain. In 2004, another PET/CT scan and biopsy found a growing tumor on her spine (where the “speck” was first found), which caused a fracture and threatened her spinal cord. Soon after radiation treatments began, the tumor was removed surgically. While she still has metastases – small but stable lesions in her lungs diagnosed in 2007 – none are present in her bones.

Dikla was seeing one oncologist until 2007, when the oncologist moved. Now she sees an oncologist and an integrative oncologist” simultaneously, both at UCLA and both kept abreast of each other’s work. Dikla says her physicians are accessible; they respond to emails and answer all her questions.

Bone metastases, however, were not discussed when Dikla was first diagnosed, since her bone problems were not discovered immediately. Nevertheless, she found out about bone health issues through support groups. She says her first oncologist didn’t even consider a bone density test; she had to request one. The focus, Dikla says, was on the breast cancer. The only one who brought it up was the integrative oncologist. “I still have to remind my regular oncologist to do scans.”

“Oncologists provide great care but sometimes they are so focused on the problem at hand that they may forget about the accumulating downstream effects of cancer and the side effects of treatment,” she says.

As a self-described patient activist – she works out, takes vitamin supplements and participates in support groups at UCLA and online – Dikla says she would have liked a patient advocate to guide her at the very beginning – “a point person I could have talked to.” She says nurse navigators are starting to appear in the area but it’s still spotty. “Some clinics are good at providing advocates, others are not. I trained myself.”

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\*UCLA has a Center for Integrative Oncology.



## LAURALEE\*

Lauralee, who is 56 and lives in Sandusky, Ohio, has stage 4 breast cancer, first diagnosed in 2002. She has had significant bone metastases in her vertebrae, discovered by a bone biopsy and magnetic resonance imaging (MRI). Lauralee saw a local oncologist, whom she knew (Lauralee is a nurse). The oncologist recommended an NIH (National Institutes of Health) protocol, which was endorsed by a second opinion. As a result, she was treated with an aromatase inhibitor.

Her physician prescribed an IV bisphosphonate to strengthen the bone and to help diminish the metastases. Her oncologist always conducted renal tests before every infusion to make sure her kidneys were functioning well. After three and half years, her physician recommended that Lauralee stop the infusions because her bones had improved, though she had to resume bone loss treatment in late 2009, because a DEXA scan indicated the presence of osteopenia.

Lauralee is very involved in Breast Cancer Network of Strength and has consulted with over 100 women with similar conditions. She regularly discusses her condition and the plan of action with her oncologist, usually armed with questions and the latest scientific articles. She believes information and hope are strong medicines.

"I was told I had a 9 percent chance of surviving my cancer and my doctor said the patient of his who survived the longest with stage 4 lasted 14 years. But I'm planning to be here for my 50th wedding anniversary, just like my parents and grandparents."

\*Patient testimonials were collected separately from the Harris Interactive Survey and are not affiliated with Harris Interactive.

BE YOUR OWN ADVOCATE. DO YOUR RESEARCH AND LEARN ALL YOU CAN. GET INVOLVED WITH PATIENT ADVOCACY ORGANIZATIONS. DON'T BE AFRAID TO ASK QUESTIONS.

## ROLE OF EFFECTIVE COMMUNICATION

As with any medical issue, the quality, accuracy and timeliness of communications between physicians and patients are critical to successful outcomes. Nurses also play a significant role in effective communications, as they spend a great amount of time counseling the patient about treatments, possible risks and consequences and overall health issues.

## INFORMATION IS AVAILABLE

Knowledge is power. This is especially true for patients with breast cancer. So, as the ultimate consumers of healthcare, patients can make the best decisions about their treatment by becoming educated. Information is available to help patients understand their diagnosis and treatment options.

As one patient with breast cancer, Renee, put it, "I want to know all the facts as soon as they're available. And, yeah, I think it's very appropriate that you know from the beginning what you're dealing with."

In fact, among those patients with breast cancer surveyed by Harris Interactive, half of the patients wanted to learn more information about bone health earlier in their cancer treatment.<sup>8</sup>

Perhaps underscoring low awareness of the severity of the issue, nearly half of the patients with breast cancer (40 percent) did not actively seek out bone health information.<sup>8</sup> For those who do actively seek information outside of physician discussions, Internet research was their top resource for information related to bone health (60 percent), followed by nurses (26 percent).<sup>8</sup>

## THE SUPPORT OF FAMILY AND FRIENDS - A NETWORK OF SUPPORT

Having the support and help of friends and loved ones is also very important. Bringing someone along to medical appointments, for example, not only provides emotional support, but also gives the patient a critical back-up; someone who can listen carefully to directions, think of questions to ask, and remember details the patient may have forgotten.<sup>39</sup>

IN THE HARRIS INTERACTIVE SURVEY, ALMOST THREE-QUARTERS OF PATIENTS WITH BREAST CANCER (72 PERCENT) RELIED ON FRIENDS, AND 61 PERCENT RELIED ON THEIR SPOUSE OR SIGNIFICANT OTHER ON THEIR PATH TO RECOVERY.<sup>8</sup>

## KEEP RECORDS

To improve and maintain effective communications, patients should prepare a list of specific questions beforehand and write down responses from their healthcare providers, to prevent important concerns from being forgotten during medical appointments.<sup>39</sup> Taking notes also helps the patient review the information later when there is more time to concentrate or do research. It may even make sense for patients to tape-record their visits, with the doctor's consent.<sup>39</sup> (Many of today's "smart phones" have a recording function.) Patients who record their visits can listen to specific information again or share it with family members or friends.

Another way for patients to record information about their specific diagnosis and keep track of details is to keep a journal or notebook. It is a good way to track not just appointments, blood tests, medications and side effects, but everything that is happening, including the patient's feelings.

## SPEAK UP

In any conversation with a doctor, patients should feel free to be assertive. If they don't know what a word means or don't understand the doctor's directions, they have a right to ask. Patients can also request a phone appointment or follow-up visit if more time is needed for discussion.<sup>39</sup>



TEAR-OUT FOR YOUR NEXT VISIT



# ASK KEY QUESTIONS

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**Here are some questions patients with breast cancer might ask their doctors or nurses about their treatment and follow-up<sup>39</sup>:**

WHAT ARE MY TREATMENT OPTIONS?

WHAT IS THE RECOMMENDED TREATMENT? WHY?

HOW OFTEN WILL I RECEIVE TREATMENT?

WHAT ARE THE POSSIBLE SIDE EFFECTS?

WHAT ARE THE POSSIBLE BENEFITS AND RISKS OF THIS TREATMENT?

IF MY DOCTOR IS NOT AVAILABLE, WHO CAN I ASK? FOR EXAMPLE, IS A NURSE, SOCIAL WORKER OR OTHER SPECIALIST AVAILABLE?

IS THERE ANY INFORMATION THAT I CAN READ ABOUT THIS TREATMENT OR PROCEDURE?

IS THERE ANYTHING ELSE I SHOULD KNOW?



**BONE HEALTH**  
IN FOCUS

# RECOMMENDATIONS FOR EFFECTIVE COMMUNICATION BETWEEN CLINICIANS AND PATIENTS

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## MANAGING COMMUNICATIONS

Some medical centers start things off by arranging a patient meeting with the surgeon, oncologist and radiation oncologist before treatment begins. As a result, even a proposed course of treatment can be discussed so everyone understands, thus minimizing confusion along the way.

Providers can continue to collaborate on a course of treatment by having regular multi-disciplinary conferences that could include oncologists, radiologists and surgeons as well as various supportive specialties. When all doctors are under the same roof (or on the same call) periodically, communication is often easier and better, resulting in clearer information for the patient.

Most doctors encourage their patients to equip themselves with facts, providing educational materials and referring them to both local and national support groups. While not everyone wants to participate, support groups can be an important part of recovery.

Not all doctors are communicating with patients as much as they can. In a recent interview, Helene, a patient with breast cancer, said, “[My doctor] has not discussed any [potential SREs] with me, because it hasn’t happened. My doctor is a very busy woman. We do not discuss all the possibilities, all the things that could possibly happen on this cancer voyage. She just doesn’t have enough time,” she explains.

“There are things that oncologists just assume patients know,” Helene adds. “She answers all my questions, and she’s available by e-mail...[but] I’m perfectly capable of going to the medical literature myself and seeking out responses.”

Meanwhile, some patients want help to get appropriate information quickly, with simple language, about their conditions. Amy said her oncologist was “the type of doctor who uses all the medical terms, and I prefer the type of doctor that, I guess you could say, dumbs it down for me so I can understand it.”

## PATIENTS NEED TO BE THEIR OWN BEST ADVOCATE

Based on the research and information collected in this report, it is clear that:

- Cancer-related bone diseases are a serious problem and prevalent with a potentially devastating impact on patients.
- The bone complications of metastatic breast cancer, if left untreated, can make a compromised health situation increasingly more difficult
- Patient knowledge about bone health is not as high as it should be, and most patients want more information. Even among patients who are satisfied with the amount of information available to them, many would have preferred more information about bone health earlier in the cancer treatment process.
- More and higher quality communication is needed between physicians and their patients, and physicians' staff members have a great opportunity to provide information, while also recommending other information sources.

The data also show that physicians who treat patients with breast cancer have high levels of awareness and concern about bone health and are open to new, more effective and easier to administer treatment options.

The entire healthcare community must take coordinated action to make cancer-related bone diseases more of a priority throughout the treatment continuum. Better bone health cannot be achieved by patients or their healthcare providers alone. The effort to understand the science and develop novel therapies to address the root cause of bone loss and bone destruction in patients with cancer is ongoing. In the meantime, patients, physicians, support groups and other advocates can do a great deal more to help alleviate pain and suffering and reduce the clinical and emotional effects of cancer-related bone diseases by prioritizing discussions about this critical topic.

THE EFFECTIVE TREATMENT OF CANCER REQUIRES A CONSIDERABLE EFFORT BY THE PATIENT AND PHYSICIAN. FORMING A STRONG PARTNERSHIP, WHICH SHOULD ALSO INCLUDE FAMILY, FRIENDS, ONCOLOGY NURSES, SOCIAL WORKERS AND PATIENT SUPPORT GROUPS, IS NOT ONLY HELPFUL BUT CRUCIAL TO EFFECTIVE DISEASE MANAGEMENT AND TREATMENT.

Working closely together with this network, patients can and should:

- Achieve the highest standard of care and work with their physicians to develop a treatment plan that is tailored to their needs.
- Comply fully with an agreed-upon treatment plan. If side effects or other issues prevent this, communication is critical.
- Take enough time to exchange relevant information and maintain an ongoing dialogue with healthcare providers about their progress and treatment options.
- Make sure they get answers to questions they ask their healthcare providers.
- Obtain other professional opinions and use other support services that may benefit recovery.
- Seek out emotional, social and practical support that may help them during cancer treatment.

## THE FOLLOWING RESOURCES CAN PROVIDE A HELPFUL START:

Breast Cancer Network of Strength ([www.networkofstrength.org](http://www.networkofstrength.org))

CURE ([www.curetoday.com](http://www.curetoday.com))

YourShoes® 24/7 Breast Cancer Support Center (1-800-221-2141)

## SELF-REPORTED PATIENT SURVEY METHODOLOGY

The patients with breast cancer survey was conducted online within the United States by Harris Interactive between February 17 and March 8, 2010, on behalf of Amgen and in partnership with Breast Cancer Network of Strength. Respondents included 212 patients with breast cancer who were recruited from Harris' Chronic Illness Panel. Breast cancer data was weighted to be representative of the respective patient populations. All patient surveys averaged 10 minutes in length.

## SELF-REPORTED PHYSICIAN SURVEY METHODOLOGY

All physicians were interviewed online by Harris Interactive between February 19 and April 16, 2010, on behalf of Amgen and in partnership with Breast Cancer Network of Strength. Respondents included 141 medical oncologists. Medical oncologists were recruited by postal mail using the American Medical Association (AMA) master physician list, and the sample was supplemented with respondents from Harris' Physician Panel. All physician surveys averaged 10 minutes in length. Physician data was weighted to be representative of the populations of the respective physician populations.

# DEFINITIONS

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**Skeletal-related events (SREs)** can occur when cancer has spread to the bone (metastasized) and weakened it. SREs include:

**Pathological fracture:** A fracture to bone for a patient with advanced cancer is significant and can require surgery. It can cause serious impairment and disability in addition to pain.<sup>22</sup>

**Spinal cord compression:** If the bone metastasis is in or around the vertebral column, expansion from the bone can put pressure on the spinal cord. This can lead to serious complications such as paralysis, incontinence and numbness.<sup>40</sup>

**Surgery to bone:** If a bone is at risk of fracture or has already fractured, surgery to the bone is performed to manage or prevent further complications. With patients with advanced cancer, surgery to the bone is a major operation, and recovery can often be challenging and require hospitalization.<sup>22,23</sup>

**Radiation to the bone:** Radiation to the bone is performed to treat the bone metastasis and alleviate pain.<sup>41</sup> However, due to the effects of radiation on the bone, it is generally only performed on smaller areas.

**Overall survival rate:** This term refers to the percentage of people in a study or treatment group who are alive for a certain period of time after they were diagnosed with or treated for a disease. The overall survival rate is often stated as a five-year survival rate, which is the percentage of people in a study or treatment group who are alive five years after diagnosis or treatment.<sup>42</sup>

# REFERENCES

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- 1 Yong M, Jensen A, Jacobsen J, Nørgaard M, Fryzek J, Sørensen H. The incidence of bone metastases and skeletal-related events in breast cancer patients: a population-based cohort study in Denmark (1999-2007). *Cancer Res* 2009;69(24 Suppl). Abstract and poster.
- 2 Brufsky AM. Cancer treatment-induced bone loss: pathophysiology and clinical perspectives. *Oncologist*. 2008;13:187-195.
- 3 Klotzbuecher CM, Ross PD, Landsman PM, Abbott TA, Berger M. Patients with prior fractures have an increased risk of future fractures: a summary of the literature and statistical synthesis. *J Bone Miner Res*. 2000;15:721-729.
- 4 National Osteoporosis Foundation. Fast facts on osteoporosis. 2006:1-7.
- 5 Hillner BE, Ingle JN, Chlebowski RT, et al. American Society of Clinical Oncology 2003 update on the role of biophosphonates and bone health issues in women with breast cancer. *J Clin Oncol*. 2003;21:4042-4057.
- 6 Papagelopoulos PJ, Savvidou OD, Galanis EC, et al. Advances and challenges in diagnosis and management of skeletal metastases. *Orthopedics*. 2006;29:609-622.
- 7 Michaud LB, Goodin S. Cancer-treatment-induced bone loss, part 1. *Am J Health-Syst Pharm*. 2006;63:419-430.
- 8 Harris Interactive Bone Health Survey. Data on file. Amgen Inc. July 27, 2010.
- 9 Hadji P, Body JJ, Aapro MS, et al. Practical guidance for the management of aromatase inhibitor-associated bone loss. *Ann Oncol*. 2008;19:1407-1416.
- 10 Mincey BA, Duh MS, Thomas SK, et al. Risk of cancer treatment-associated bone loss and fractures among women with breast cancer receiving aromatase inhibitors. *Clin Breast Cancer*. 2006;7:127-132.
- 11 Burge R, Dawson-Hughes B, Solomon DH, Wong JB, King A, Tosteson A. Incidence and economic burden of osteoporosis-related fractures in the United States, 2002-2005. *J Bone Miner Res*. 2007;22:465-475.
- 12 Ross PD, Davis JW, Epstein RS, Wasnich RD. Pain and disability associated with new vertebral fractures and other spinal conditions. *J Clin Epidemiol*. 1994;47:231-239.
- 13 Fink HA, Ensrud KE, Nelson DB, et al. *Osteoporos Int*. 2003;14:69-76.
- 14 Cauley JA, Thompson DE, Ensrud KC, Scott JC, Black D. Risk of mortality following clinical fractures. *Osteoporos Int*. 2000;11:556-561.
- 15 Eastell R, Adams JE, Coleman RE, et al. Effect of anastrozole on bone mineral density: 5-year results from the Anastrozole, Tamoxifen, Alone or in Combination Trial 18233230. *J Clin Oncol*. 2008;26:1051-1058.
- 16 The ATAC Trialists Group. Anastrozole alone or in combination with tamoxifen versus tamoxifen alone for adjuvant treatment of postmenopausal women with early-stage breast cancer. *Cancer*. 2003;98:1802-1810.
- 17 Lipton A. Toward new horizons: the future of bisphosphonate therapy. *Oncologist*. 2004;9 (suppl 4):38-47.
- 18 BMD testing. National Osteoporosis Foundation website. <http://www.nof.org/osteoporosis/bmdtest.htm>. Accessed August 31, 2010.
- 19 Zometa® (zoledronic acid) prescribing information, Novartis.
- 20 Clinician's Guide to Prevention and Treatment of Osteoporosis. National Osteoporosis Foundation website. [http://www.nof.org/professionals/pdfs/NOF\\_ClinicianGuide2009\\_v7.pdf](http://www.nof.org/professionals/pdfs/NOF_ClinicianGuide2009_v7.pdf). Accessed September 19, 2010.

- 21 Coleman RE. Skeletal complications of malignancy. *Cancer*. 1997;80(suppl):1588-1594.
- 22 Costa L, Badia X, Chow E, Lipton A, Wardley A. Impact of skeletal complications on patients' quality of life, mobility, and functional independence. *Support Care Cancer*. 2008;16:879-889.
- 23 Weinfurt KP, Anstrom KJ, Castel LD, Schulman KA, Saad F. Effects of zoledronic acid on pain associated with bone metastasis in patients with prostate cancer. *Ann Oncol*. 2006;17:986-989.
- 24 Ripamonti C, Fulfaro F. Malignant bone pain: pathophysiology and treatments. *Curr Rev Pain*. 2000;4:187-196.
- 25 Cleeland CS, Gonin R, Hatfield AK, et al. Pain and its treatment in outpatients with metastatic cancer. *N Engl J Med*. 1994;330:592-596.
- 26 Diel I. Effectiveness of bisphosphonates on bone pain and quality of life in breast cancer patients with metastatic bone disease: a review. *Support Care Cancer*. 2007;15:1243-1249.
- 27 Gralow J, Tripathy, D. Managing metastatic bone pain: the role of bisphosphonates. *J Pain Symptom Manage*. 2007;33:462-472.
- 28 Mortimer JE, Schulman K, Kohles JD. Patterns of bisphosphonate use in the United States in the treatment of metastatic bone disease. *Clin Breast Cancer*. 2007;7:682-689.
- 29 Saad F, Lipton A, Cook R, Chen YM, Smith M, Coleman R. Pathologic fractures correlated with reduced survival in patients with malignant bone disease. *Cancer*. 2007;110:1860-1867.
- 30 Rosen LS, Gordon D, Tchekmedyian NS, et al. Long-term efficacy and safety of zoledronic acid in the treatment of skeletal metastases in patients with nonsmall cell lung carcinoma and other solid tumors: a randomized, Phase III, double-blind, placebo-controlled trial. *Cancer*. 2004;100:2613-2621.
- 31 Saad F, Gleason DM, Murray R, et al. Long-term efficacy of zoledronic acid for the prevention of skeletal complications in patients with metastatic hormone-refractory prostate cancer. *J Natl Cancer Inst*. 2004;96(suppl 11):879-882.
- 32 Lipton A, Theriault RL, Nortobagyi GN, et al. Pamidronate prevents skeletal complications and is effective palliative treatment in women with breast carcinoma and osteolytic bone metastases. *Cancer*. 2000;88(suppl 5):1082-1090.
- 33 Lipton A, Uzzo R, Amato RJ, et al. The science and practice of both health in oncology. *J Natl Compr Canc Netw*. 2009;7:S1-S29.
- 34 Aredia (pamidronate disodium) prescribing information, Novartis.
- 35 Compression fractures of the back. National Library of Medicine website. <http://www.nlm.nih.gov/medlineplus/ency/article/000443.htm>. Accessed August 31, 2010.
- 36 Dictionary of Cancer Terms—hypofractionation. National Cancer Institute website. <http://www.cancer.gov/dictionary>. Accessed August 31, 2010.
- 37 Dictionary of Cancer Terms—stereotactic body radiation therapy. National Cancer Institute website. <http://www.cancer.gov/dictionary>. Accessed August 31, 2010.
- 38 Down To The Bone. CureToday website. <http://www.curetoday.com>. Accessed August 31, 2010.
- 39 Doctor Can We Talk? Cancer Care website. [http://www.cancercare.org/pdf/fact\\_sheets/fs\\_doctor\\_talk\\_en.pdf](http://www.cancercare.org/pdf/fact_sheets/fs_doctor_talk_en.pdf). Accessed August 31, 2010.
- 40 Dictionary of Cancer Terms—spinal cord compression. National Cancer Institute website. <http://www.cancer.gov/dictionary>. Accessed August 31, 2010.
- 41 Janjan NA. Radiation for bone metastases. *Cancer*. 2000;80:1628-1645.
- 42 Dictionary of Cancer Terms—overall survival rate. National Cancer Institute website. <http://www.cancer.gov/dictionary>. Accessed August 31, 2010.
- 43 Sugar SM. Integrative oncology in North America. *J Soc Integrative Oncol*. 2006;4 (suppl 1):27-39.









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