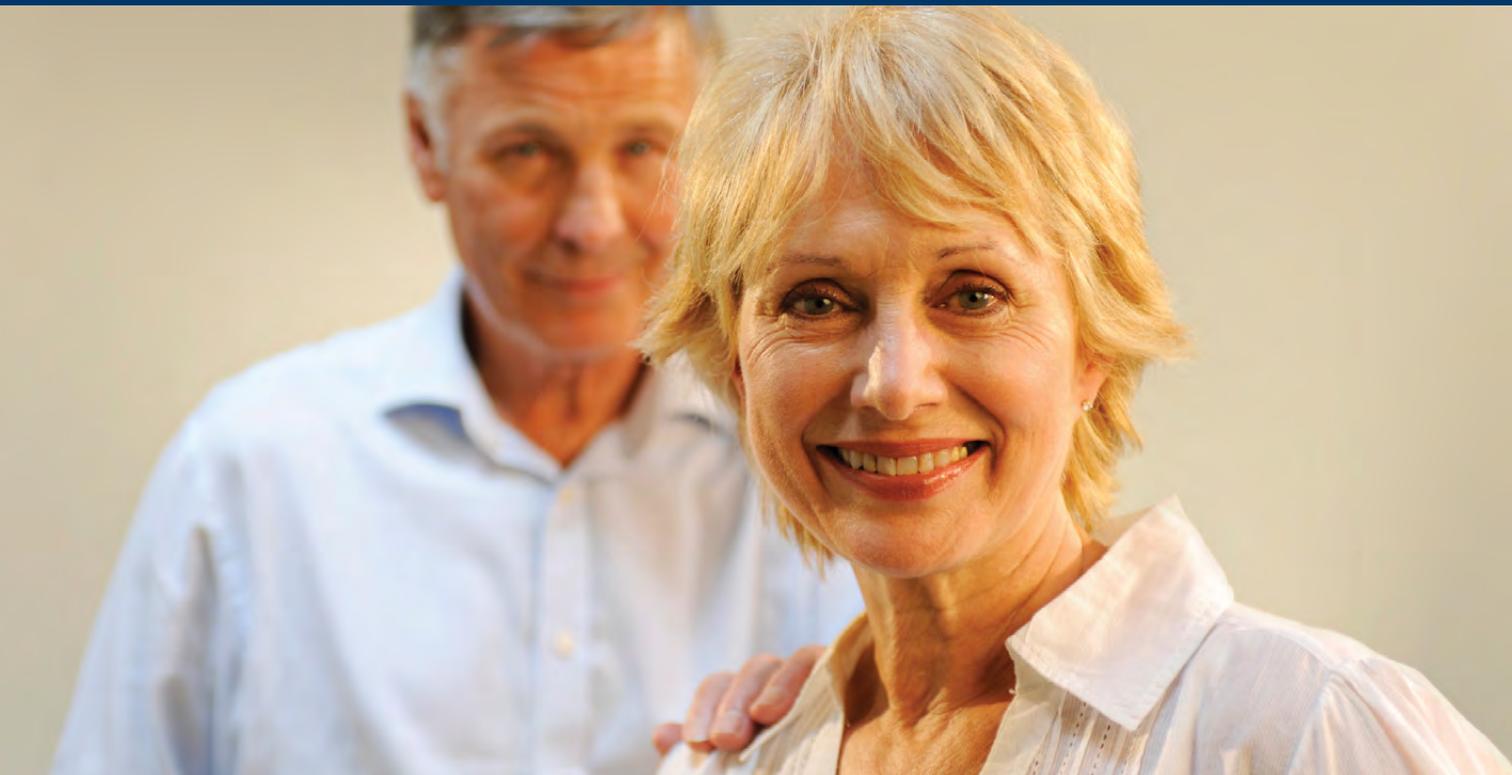


THE
Educated Patient[®]

Bone Metastases

RESOURCE GUIDE



A collection of websites that provide information and support for patients with bone metastases or bone lesions, and the oncology professionals who treat them.

Sponsored by Novartis Pharmaceuticals Corporation

From the Publisher

Bone Metastases

A guide toward better care

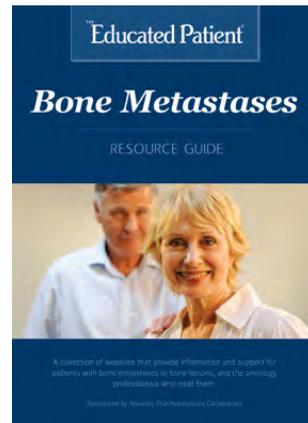
Patients with cancer need to pay extra close attention to bone health, and when cancer spreads to the bone, they need to know where to go for information and assistance with bone metastases.

Bone metastases occur when cancer that originated in one area of the body, such as the breast, prostate, or lung, spreads to the bones. Multiple myeloma, a cancer that starts in the bone marrow, can also cause bone lesions similar to the solid tumors that form with other types of cancer. Bone metastases should not be confused with primary bone cancer, which refers to cancer that *starts* in the bone.

Bone metastases can lead to fractures or nervous system disorders. This *Resource Guide*, sponsored by Novartis Oncology, discusses how bone metastases cause these problems as they develop and affect normal bone. The guide lists risk factors and treatments for this condition and provides questions for patients to ask their health care providers.

This guide not only provides the basics on bone metastases, but it also provides online resources that will further patients' understanding, help them cope, and offer them the support they may need. The website resources in this guide narrow down the sometimes overwhelming flood of information found on the Internet so patients can take a more active role in their care. These resources also provide opportunities for patients to communicate with other patients who may be experiencing similar health issues.

Many people live with bone metastases for years. The right resources and information can help patients make important decisions regarding their well-being. If you are a patient, you have already taken the first steps by opening this resource guide. We sincerely hope it will assist you in your discussions with your health care providers, and help you to pursue the highest possible level of care.



When

Cancer spreads to the bone,
choose to help protect against bone complications with ZOMETA® (zoledronic acid) 4 mg/5 mL Injection*†

ZOMETA (zoledronic acid) 4 mg/5 mL Injection helps reduce and delay bone complications^{1,2}

- FDA approved in 2002
- Prescribed to more than 4 million people around the world

ZOMETA has helped people with bone metastases from the following types of cancer¹:

- Multiple myeloma
- Breast cancer
- Prostate cancer*
- Lung cancer
- Other solid tumor types

Indication

• ZOMETA (zoledronic acid) 4 mg/5 mL Injection is a treatment to reduce and delay bone complications due to multiple myeloma and bone metastases from solid tumors; used with anti-cancer medicines. ZOMETA is not an anti-cancer therapy. If you have prostate cancer, you should have failed treatment with at least one hormonal therapy prior to taking ZOMETA.

Highlights from Important Safety Information

• Do not use ZOMETA if you have had a severe allergic reaction to zoledronic acid or any components of ZOMETA. These reactions, including rare cases of hives and angioedema (swelling often near your eyes and lips), and very rare cases of life-threatening allergic reactions, have been reported. ZOMETA is in a class of drugs called bisphosphonates, and contains the same active ingredient as that found in Reclast® (zoledronic acid). If you are treated with ZOMETA, you should not be treated with Reclast.

• If you have kidney problems, tell your doctor. The risk of adverse reactions (especially related to the kidney) may be greater for you. ZOMETA treatment is not for patients with severe kidney problems. Patients with kidney problems on multiple cycles of ZOMETA or other bisphosphonates are at greater risk for further kidney problems. It is important to get your blood tests while you are receiving ZOMETA. Your doctor will monitor your kidney function before each dose. Tell your doctor if you are on other drugs, including aminoglycosides, loop diuretics, and drugs which may be harmful to the kidney.

Please see full brief summary on the following page.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

People who are 65 years old and older are more likely to have kidney problems. If you are older than 65, your doctor may watch you more closely while taking ZOMETA.

*For prostate cancer patients, ZOMETA is only for those who have failed at least 1 hormonal therapy.

†ZOMETA is given to reduce and delay bone complications from multiple myeloma and solid tumors that spread to the bone. ZOMETA is not an anticancer therapy. ZOMETA is given along with anticancer medicines.

References: 1. ZOMETA [prescribing information]. East Hanover, NJ: Novartis Pharmaceuticals Corp; 2012. 2. Data on file. Novartis Pharmaceuticals Corp.

Zometa® (zoledronic acid) Injection
Ready-to-Use Solution for Intravenous Infusion (For Single Use)
Concentrate for Intravenous Infusion
Initial U.S. Approval: 2001

BRIEF SUMMARY: Please see package insert for full prescribing information.

1 INDICATIONS AND USAGE

1.1 Hypercalcemia of Malignancy

Zometa is indicated for the treatment of hypercalcemia of malignancy defined as an albumin-corrected calcium (cCa) of greater than or equal to 12 mg/dL [3.0 mmol/L] using the formula: $cCa \text{ in mg/dL} = Ca \text{ in mg/dL} + 0.8 (4.0 \text{ g/dL} - \text{patient albumin (g/dL)})$.

1.2 Multiple Myeloma and Bone Metastases of Solid Tumors

Zometa is indicated for the treatment of patients with multiple myeloma and patients with documented bone metastases from solid tumors, in conjunction with standard antineoplastic therapy. Prostate cancer should have progressed after treatment with at least one hormonal therapy.

1.3 Important Limitation of Use

The safety and efficacy of Zometa in the treatment of hypercalcemia associated with hyperparathyroidism or with other nontumor-related conditions has not been established.

4 CONTRAINDICATIONS

4.1 Hypersensitivity to Zoledronic Acid or Any Components of Zometa

Hypersensitivity reactions including rare cases of urticaria and angioedema, and very rare cases of anaphylactic reaction/shock have been reported [see *Adverse Reactions (6.2)*].

5 WARNINGS AND PRECAUTIONS

5.1 Drugs with Same Active Ingredient or in the Same Drug Class

Zometa contains the same active ingredient as found in Reclast® (zoledronic acid). Patients being treated with Zometa should not be treated with Reclast or other bisphosphonates.

5.2 Hydration and Electrolyte Monitoring

Patients with hypercalcemia of malignancy must be adequately rehydrated prior to administration of Zometa. Loop diuretics should not be used until the patient is adequately rehydrated and should be used with caution in combination with Zometa in order to avoid hypocalcemia. Zometa should be used with caution with other nephrotoxic drugs.

Standard hypercalcemia-related metabolic parameters, such as serum levels of calcium, phosphate, and magnesium, as well as serum creatinine, should be carefully monitored following initiation of therapy with Zometa. If hypocalcemia, hypophosphatemia, or hypomagnesemia occur, short-term supplemental therapy may be necessary.

5.3 Renal Impairment

Zometa is excreted intact primarily via the kidney, and the risk of adverse reactions, in particular renal adverse reactions, may be greater in patients with impaired renal function. Safety and pharmacokinetic data are limited in patients with severe renal impairment and the risk of renal deterioration is increased [see *Adverse Reactions (6.1)*]. Preexisting renal insufficiency and multiple cycles of Zometa and other bisphosphonates are risk factors for subsequent renal deterioration with Zometa. Factors predisposing to renal deterioration, such as dehydration or the use of other nephrotoxic drugs, should be identified and managed, if possible.

Zometa treatment in patients with hypercalcemia of malignancy with severe renal impairment should be considered only after evaluating the risks and benefits of treatment. In the clinical studies, patients with serum creatinine greater than 400 µmol/L or greater than 4.5 mg/dL were excluded.

Zometa treatment is not recommended in patients with bone metastases with severe renal impairment. In the clinical studies, patients with serum creatinine greater than 265 µmol/L or greater than 3.0 mg/dL were excluded and there were only 8 of 564 patients treated with Zometa 4 mg by 15-minute infusion with a baseline creatinine greater than 2 mg/dL. Limited pharmacokinetic data exists in patients with creatinine clearance less than 30 mL/min [see *Clinical Pharmacology (12.3) in the full prescribing information*].

5.4 Osteonecrosis of the Jaw

Osteonecrosis of the jaw (ONJ) has been reported predominantly in cancer patients treated with intravenous bisphosphonates, including Zometa. Many of these patients were also receiving chemotherapy and corticosteroids which may be risk factors for ONJ. Postmarketing experience and the literature suggest a greater frequency of reports of ONJ based on tumor type (advanced breast cancer, multiple myeloma), and dental status (dental extraction, periodontal disease, local trauma including poorly fitting dentures). Many reports of ONJ involved patients with signs of local infection including osteomyelitis.

Cancer patients should maintain good oral hygiene and should have a dental examination with preventive dentistry prior to treatment with bisphosphonates.

While on treatment, these patients should avoid invasive dental procedures if possible. For patients who develop ONJ while on bisphosphonate therapy, dental surgery may exacerbate the condition. For patients requiring dental procedures, there are no data available to suggest whether discontinuation of bisphosphonate treatment

reduces the risk of ONJ. Clinical judgment of the treating physician should guide the management plan of each patient based on individual benefit/risk assessment [see *Adverse Reactions (6.2)*].

5.5 Musculoskeletal Pain

In postmarketing experience, severe and occasionally incapacitating bone, joint, and/or muscle pain has been reported in patients taking bisphosphonates. This category of drugs includes Zometa. The time to onset of symptoms varied from one day to several months after starting the drug. Discontinue use if severe symptoms develop. Most patients had relief of symptoms after stopping. A subset had recurrence of symptoms when rechallenged with the same drug or another bisphosphonate [see *Adverse Reactions (6.2)*].

5.6 Atypical subtrochanteric and diaphyseal femoral fractures

Atypical subtrochanteric and diaphyseal femoral fractures have been reported in patients receiving bisphosphonate therapy, including Zometa. These fractures can occur anywhere in the femoral shaft from just below the lesser trochanter to just above the supracondylar flare and are transverse or short oblique in orientation without evidence of comminution. These fractures occur after minimal or no trauma. Patients may experience thigh or groin pain weeks to months before presenting with a completed femoral fracture. Fractures are often bilateral; therefore the contralateral femur should be examined in bisphosphonate-treated patients who have sustained a femoral shaft fracture. Poor healing of these fractures has also been reported. A number of case reports noted that patients were also receiving treatment with glucocorticoids (such as prednisone or dexamethasone) at the time of fracture. Causality with bisphosphonate therapy has not been established.

Any patient with a history of bisphosphonate exposure who presents with thigh or groin pain in the absence of trauma should be suspected of having an atypical fracture and should be evaluated. Discontinuation of Zometa therapy in patients suspected to have an atypical femur fracture should be considered pending evaluation of the patient, based on an individual benefit/risk assessment. It is unknown whether the risk of atypical femur fracture continues after stopping therapy.

5.7 Patients with Asthma

While not observed in clinical trials with Zometa, there have been reports of bronchoconstriction in aspirin sensitive patients receiving bisphosphonates.

5.8 Hepatic Impairment

Only limited clinical data are available for use of Zometa to treat hypercalcemia of malignancy in patients with hepatic insufficiency, and these data are not adequate to provide guidance on dosage selection or how to safely use Zometa in these patients.

5.9 Use in Pregnancy

Bisphosphonates, such as Zometa, are incorporated into the bone matrix, from where they are gradually released over periods of weeks to years. There may be a risk of fetal harm (e.g., skeletal and other abnormalities) if a woman becomes pregnant after completing a course of bisphosphonate therapy.

Zometa may cause fetal harm when administered to a pregnant woman. In reproductive studies in pregnant rats, subcutaneous doses equivalent to 2.4 or 4.8 times the human systemic exposure resulted in pre- and post-implantation losses, decreases in viable fetuses and fetal skeletal, visceral, and external malformations. There are no adequate and well controlled studies in pregnant women. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to a fetus [see *Use in Specific Populations (8.1)*].

6 ADVERSE REACTIONS

6.1 Clinical Studies Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

Hypercalcemia of Malignancy

The safety of Zometa was studied in 185 patients with hypercalcemia of malignancy (HCM) who received either Zometa 4 mg given as a 5-minute intravenous infusion (n=86) or pamidronate 90 mg given as a 2-hour intravenous infusion (n=103). The population was aged 33-84 years, 60% male and 81% Caucasian, with breast, lung, head and neck, and renal cancer as the most common forms of malignancy. NOTE: pamidronate 90 mg was given as a 2-hour intravenous infusion. The relative safety of pamidronate 90 mg given as a 2-hour intravenous infusion compared to the same dose given as a 24-hour intravenous infusion has not been adequately studied in controlled clinical trials.

Renal Toxicity

Administration of Zometa 4 mg given as a 5-minute intravenous infusion has been shown to result in an increased risk of renal toxicity, as measured by increases in serum creatinine, which can progress to renal failure. The incidence of renal toxicity and renal failure has been shown to be reduced when Zometa 4 mg is given as a 15-minute intravenous infusion. Zometa should be administered by intravenous infusion over no less than 15 minutes [see *Warnings And Precautions (5) and Dosage And Administration (2) in the full prescribing information*].

The most frequently observed adverse events were fever, nausea, constipation, anemia, and dyspnea (see Table 4).

Table 4 provides adverse events that were reported by 10% or more of the 189 patients treated with Zometa 4 mg or Pamidronate 90 mg from the two HCM trials. Adverse events are listed regardless of presumed causality to study drug.

Table 4: Percentage of Patients with Adverse Events ≥10% Reported in Hypercalcemia of Malignancy Clinical Trials by Body System

Laboratory Parameter	Zometa 4 mg		Pamidronate 90 mg	
	n/N	(%)	n/N	(%)
Patients Studied				
Total No. of Patients Studied	86	(100)	103	(100)
Total No. of Patients with any AE	81	(94)	95	(92)
Body as a Whole				
Fever	38	(44)	34	(33)
Progression of Cancer	14	(16)	21	(20)
Cardiovascular				
Hypotension	9	(11)	2	(2)
Digestive				
Nausea	25	(29)	28	(27)
Constipation	23	(27)	13	(13)
Diarrhea	15	(17)	17	(17)
Abdominal Pain	14	(16)	13	(13)
Vomiting	12	(14)	17	(17)
Anorexia	8	(9)	14	(14)
Hemic and Lymphatic System				
Anemia	19	(22)	18	(18)
Infections				
Moniliasis	10	(12)	4	(4)
Laboratory Abnormalities				
Hypophosphatemia	11	(13)	2	(2)
Hypokalemia	10	(12)	16	(16)
Hypomagnesemia	9	(11)	5	(5)
Musculoskeletal				
Skeletal Pain	10	(12)	10	(10)
Nervous				
Insomnia	13	(15)	10	(10)
Anxiety	12	(14)	8	(8)
Confusion	11	(13)	13	(13)
Agitation	11	(13)	8	(8)
Respiratory				
Dyspnea	19	(22)	20	(19)
Coughing	10	(12)	12	(12)
Urogenital				
Urinary Tract Infection	12	(14)	15	(15)

The following adverse events from the two controlled multicenter HCM trials (n=189) were reported by a greater percentage of patients treated with Zometa 4 mg than with pamidronate 90 mg and occurred with a frequency of greater than or equal to 5% but less than 10%. Adverse events are listed regardless of presumed causality to study drug: Asthenia, chest pain, leg edema, mucositis, dysphagia, granulocytopenia, thrombocytopenia, pancytopenia, nonspecific infection, hypocalcemia, dehydration, arthralgias, headache and somnolence.

Rare cases of rash, pruritus, and chest pain have been reported following treatment with Zometa.

Acute Phase Reaction-like Events

Symptoms consistent with acute phase reaction (APR) can occur with intravenous bisphosphonate use. Fever has been the most commonly associated symptom, occurring in 44% of patients treated with Zometa 4 mg and 33% of patients treated with Pamidronate 90 mg. Occasionally, patients experience a flu-like syndrome consisting of fever, chills, flushing, bone pain and/or arthralgias, and myalgias.

Mineral and Electrolyte Abnormalities

Electrolyte abnormalities, most commonly hypocalcemia, hypophosphatemia and hypomagnesemia, can occur with bisphosphonate use.

Grade 3 and Grade 4 laboratory abnormalities for serum creatinine, serum calcium, serum phosphorus, and serum magnesium observed in two clinical trials of Zometa in patients with HCM are shown in Table 5 and 6.

Table 5: Grade 3 Laboratory Abnormalities for Serum Creatinine, Serum Calcium, Serum Phosphorus, and Serum Magnesium in Two Clinical Trials in Patients with HCM

Laboratory Parameter	Zometa 4 mg		Pamidronate 90 mg	
	n/N	(%)	n/N	(%)
Serum Creatinine ¹	2/86	(2%)	3/100	(3%)
Hypocalcemia ²	1/86	(1%)	2/100	(2%)
Hypophosphatemia ³	36/70	(51%)	27/81	(33%)
Hypomagnesemia ⁴	0/71	—	0/84	—

Table 6: Grade 4 Laboratory Abnormalities for Serum Creatinine, Serum Calcium, Serum Phosphorus, and Serum Magnesium in Two Clinical Trials in Patients with HCM

Laboratory Parameter	Zometa 4 mg		Pamidronate 90 mg	
	n/N	(%)	n/N	(%)
Serum Creatinine ¹	0/86	—	1/100	(1%)
Hypocalcemia ²	0/86	—	0/100	—
Hypophosphatemia ³	1/70	(1%)	4/81	(5%)
Hypomagnesemia ⁴	0/71	—	1/84	(1%)

¹Grade 3 (greater than 3x Upper Limit of Normal); Grade 4 (greater than 6x Upper Limit of Normal)

²Grade 3 (less than 7 mg/dL); Grade 4 (less than 6 mg/dL)

³Grade 3 (less than 2 mg/dL); Grade 4 (less than 1 mg/dL)

⁴Grade 3 (less than 0.8 mEq/L); Grade 4 (less than 0.5 mEq/L)

Injection Site Reactions

Local reactions at the infusion site, such as redness or swelling, were observed infrequently. In most cases, no specific treatment is required and the symptoms subside after 24-48 hours.

Ocular Adverse Events

Ocular inflammation such as uveitis and scleritis can occur with bisphosphonate use, including Zometa. No cases of iritis, scleritis or uveitis were reported during these clinical trials. However, cases have been seen in postmarketing use [see Adverse Reactions (6.2)].

Multiple Myeloma and Bone Metastases of Solid Tumors

The safety analysis includes patients treated in the core and extension phases of the trials. The analysis includes the 2,042 patients treated with Zometa 4 mg, pamidronate 90 mg, or placebo in the three controlled multicenter bone metastases trials, including 969 patients completing the efficacy phase of the trial, and 619 patients that continued in the safety extension phase. Only 347 patients completed the extension phases and were followed for 2 years (or 21 months for the other solid tumor patients). The median duration of exposure for safety analysis for Zometa 4 mg (core plus extension phases) was 12.8 months for breast cancer and multiple myeloma, 10.8 months for prostate cancer, and 4.0 months for other solid tumors.

Table 7 describes adverse events that were reported by 10% or more of patients. Adverse events are listed regardless of presumed causality to study drug.

Table 7: Percentage of Patients with Adverse Events ≥10% Reported in Three Bone Metastases Clinical Trials by Body System

Laboratory Parameter	Zometa 4 mg		Pamidronate 90 mg		Placebo	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Patients Studied						
Total No. of Patients	1031	(100)	556	(100)	455	(100)
Total No. of Patients with any AE	1015	(98)	548	(99)	445	(98)
Blood and Lymphatic						
Anemia	344	(33)	175	(32)	128	(28)
Neutropenia	124	(12)	83	(15)	35	(8)
Thrombocytopenia	102	(10)	53	(10)	20	(4)
Gastrointestinal						
Nausea	476	(46)	266	(48)	171	(38)
Vomiting	333	(32)	183	(33)	122	(27)
Constipation	320	(31)	162	(29)	174	(38)
Diarrhea	249	(24)	162	(29)	83	(18)
Abdominal Pain	143	(14)	81	(15)	48	(11)
Dyspepsia	105	(10)	74	(13)	31	(7)
Stomatitis	86	(8)	65	(12)	14	(3)
Sore Throat	82	(8)	61	(11)	17	(4)
General Disorders and Administration Site						
Fatigue	398	(39)	240	(43)	130	(29)
Pyrexia	328	(32)	172	(31)	89	(20)
Weakness	252	(24)	108	(19)	114	(25)
Edema Lower Limb	215	(21)	126	(23)	84	(19)
Rigors	112	(11)	62	(11)	28	(6)
Infections						
Urinary Tract Infection	124	(12)	50	(9)	41	(9)
Upper Respiratory Tract Infection	101	(10)	82	(15)	30	(7)
Metabolism						
Anorexia	231	(22)	81	(15)	105	(23)
Weight Decreased	164	(16)	50	(9)	61	(13)
Dehydration	145	(14)	60	(11)	59	(13)
Appetite Decreased	130	(13)	48	(9)	45	(10)

(continued)

Table 7: Percentage of Patients with Adverse Events ≥10% Reported in Three Bone Metastases Clinical Trials by Body System

	Zometa 4 mg n (%)	Pamidronate 90 mg n (%)	Placebo n (%)
Musculoskeletal			
Bone Pain	569 (55)	316 (57)	284 (62)
Myalgia	239 (23)	143 (26)	74 (16)
Arthralgia	216 (21)	131 (24)	73 (16)
Back Pain	156 (15)	106 (19)	40 (9)
Pain in Limb	143 (14)	84 (15)	52 (11)
Neoplasms			
Malignant Neoplasm Aggravated	205 (20)	97 (17)	89 (20)
Nervous			
Headache	191 (19)	149 (27)	50 (11)
Dizziness (excluding vertigo)	180 (18)	91 (16)	58 (13)
Insomnia	166 (16)	111 (20)	73 (16)
Paresthesia	149 (15)	85 (15)	35 (8)
Hypoesthesia	127 (12)	65 (12)	43 (10)
Psychiatric			
Depression	146 (14)	95 (17)	49 (11)
Anxiety	112 (11)	73 (13)	37 (8)
Confusion	74 (7)	39 (7)	47 (10)
Respiratory			
Dyspnea	282 (27)	155 (28)	107 (24)
Cough	224 (22)	129 (23)	65 (14)
Skin			
Alopecia	125 (12)	80 (14)	36 (8)
Dermatitis	114 (11)	74 (13)	38 (8)

Grade 3 and Grade 4 laboratory abnormalities for serum creatinine, serum calcium, serum phosphorus, and serum magnesium observed in three clinical trials of Zometa in patients with bone metastases are shown in Tables 8 and 9.

Table 8: Grade 3 Laboratory Abnormalities for Serum Creatinine, Serum Calcium, Serum Phosphorus, and Serum Magnesium in Three Clinical Trials in Patients with Bone Metastases

Laboratory Parameter	Grade 3					
	Zometa 4 mg		Pamidronate 90 mg		Placebo	
	n/N	(%)	n/N	(%)	n/N	(%)
Serum Creatinine ^{1*}	7/529	(1%)	4/268	(2%)	4/241	(2%)
Hypocalcemia ²	6/973	(<1%)	4/536	(<1%)	0/415	—
Hypophosphatemia ³	115/973	(12%)	38/537	(7%)	14/415	(3%)
Hypermaghemia ⁴	19/971	(2%)	2/535	(<1%)	8/415	(2%)
Hypomagnesemia ⁵	1/971	(<1%)	0/535	—	1/415	(<1%)

¹Grade 3 (greater than 3x Upper Limit of Normal); Grade 4 (greater than 6x Upper Limit of Normal)

*Serum creatinine data for all patients randomized after the 15-minute infusion amendment

²Grade 3 (less than 7 mg/dL); Grade 4 (less than 6 mg/dL)

³Grade 3 (less than 2 mg/dL); Grade 4 (less than 1 mg/dL)

⁴Grade 3 (greater than 3 mEq/L); Grade 4 (greater than 8 mEq/L)

⁵Grade 3 (less than 0.9 mEq/L); Grade 4 (less than 0.7 mEq/L)

Table 9: Grade 4 Laboratory Abnormalities for Serum Creatinine, Serum Calcium, Serum Phosphorus, and Serum Magnesium in Three Clinical Trials in Patients with Bone Metastases

Laboratory Parameter	Grade 4					
	Zometa 4 mg		Pamidronate 90 mg		Placebo	
	n/N	(%)	n/N	(%)	n/N	(%)
Serum Creatinine ^{1*}	2/529	(<1%)	1/268	(<1%)	0/241	—
Hypocalcemia ²	7/973	(<1%)	3/536	(<1%)	2/415	(<1%)
Hypophosphatemia ³	5/973	(<1%)	0/537	—	1/415	(<1%)
Hypermaghemia ⁴	0/971	—	0/535	—	2/415	(<1%)
Hypomagnesemia ⁵	2/971	(<1%)	1/535	(<1%)	0/415	—

¹Grade 3 (greater than 3x Upper Limit of Normal); Grade 4 (greater than 6x Upper Limit of Normal)

*Serum creatinine data for all patients randomized after the 15-minute infusion amendment

²Grade 3 (less than 7 mg/dL); Grade 4 (less than 6 mg/dL)

³Grade 3 (less than 2 mg/dL); Grade 4 (less than 1 mg/dL)

⁴Grade 3 (greater than 3 mEq/L); Grade 4 (greater than 8 mEq/L)

⁵Grade 3 (less than 0.9 mEq/L); Grade 4 (less than 0.7 mEq/L)

Among the less frequently occurring adverse events (less than 15% of patients), rigors, hypokalemia, influenza-like illness, and hypocalcemia showed a trend for more events with bisphosphonate administration (Zometa 4 mg and pamidronate groups) compared to the placebo group.

Less common adverse events reported more often with Zometa 4 mg than pamidronate included decreased weight, which was reported in 16% of patients in the Zometa 4 mg group compared with 9% in the pamidronate group. Decreased appetite was reported in slightly more patients in the Zometa 4 mg group (13%) compared with the pamidronate (9%) and placebo (10%) groups, but the clinical significance of these small differences is not clear.

Renal Toxicity

In the bone metastases trials, renal deterioration was defined as an increase of 0.5 mg/dL for patients with normal baseline creatinine (less than 1.4 mg/dL) or an increase of 1.0 mg/dL for patients with an abnormal baseline creatinine (greater than or equal to 1.4 mg/dL). The following are data on the incidence of renal deterioration in patients receiving Zometa 4 mg over 15 minutes in these trials (see Table 10).

Table 10: Percentage of Patients with Treatment Emergent Renal Function Deterioration by Baseline Serum Creatinine*

Patient Population/Baseline Creatinine				
Multiple Myeloma and Breast Cancer	Zometa 4 mg		Pamidronate 90 mg	
	n/N	(%)	n/N	(%)
Normal	27/246	(11%)	23/246	(9%)
Abnormal	2/26	(8%)	2/22	(9%)
Total	29/272	(11%)	25/268	(9%)
Solid Tumors				
	Zometa 4 mg		Placebo	
	n/N	(%)	n/N	(%)
Normal	17/154	(11%)	10/143	(7%)
Abnormal	1/11	(9%)	1/20	(5%)
Total	18/165	(11%)	11/163	(7%)
Prostate Cancer				
	Zometa 4 mg		Placebo	
	n/N	(%)	n/N	(%)
Normal	12/82	(15%)	8/68	(12%)
Abnormal	4/10	(40%)	2/10	(20%)
Total	16/92	(17%)	10/78	(13%)

*Table includes only patients who were randomized to the trial after a protocol amendment that lengthened the infusion duration of Zometa to 15 minutes.

The risk of deterioration in renal function appeared to be related to time on study, whether patients were receiving Zometa (4 mg over 15 minutes), placebo, or pamidronate.

In the trials and in postmarketing experience, renal deterioration, progression to renal failure and dialysis have occurred in patients with normal and abnormal baseline renal function, including patients treated with 4 mg infused over a 15-minute period. There have been instances of this occurring after the initial Zometa dose.

6.2 Postmarketing Experience

The following adverse reactions have been reported during postapproval use of Zometa. Because these reports are from a population of uncertain size and are subject to confounding factors, it is not possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Osteonecrosis of the Jaw

Cases of osteonecrosis (primarily involving the jaws) have been reported predominantly in cancer patients treated with intravenous bisphosphonates including Zometa. Many of these patients were also receiving chemotherapy and corticosteroids which may be a risk factor for ONJ. Data suggests a greater frequency of reports of ONJ in certain cancers, such as advanced breast cancer and multiple myeloma. The majority of the reported cases are in cancer patients following invasive dental procedures, such as tooth extraction. It is therefore prudent to avoid invasive dental procedures as recovery may be prolonged [see Warnings And Precautions (5)].

Musculoskeletal Pain

Severe and occasionally incapacitating bone, joint, and/or muscle pain has been reported with bisphosphonate use [see Warnings And Precautions (5)].

Atypical subtrochanteric and diaphyseal femoral fractures

Atypical subtrochanteric and diaphyseal femoral fractures have been reported with bisphosphonate therapy, including Zometa [see Warnings and Precautions (5.6)].

Ocular Adverse Events

Cases of uveitis, scleritis, episcleritis, conjunctivitis, iritis, and orbital inflammation including orbital edema have been reported during postmarketing use. In some cases, symptoms resolved with topical steroids.

Hypersensitivity Reactions

There have been rare reports of allergic reaction with intravenous zoledronic acid including angioedema, and bronchoconstriction. Very rare cases of anaphylactic reaction/shock have also been reported.

Additional adverse reactions reported in postmarketing use include:

CNS: taste disturbance, hyperesthesia, tremor; **Special Senses:** blurred vision; **Gastrointestinal:** dry mouth; **Skin:** Increased sweating; **Musculoskeletal:** muscle cramps; **Cardiovascular:** hypertension, bradycardia, hypotension (associated with syncope or circulatory collapse primarily in patients with underlying risk factors); **Respiratory:** bronchoconstriction; **Renal:** hematuria, proteinuria; **General Disorders and Administration Site:** weight increase, influenza-like illness (pyrexia, asthenia, fatigue or malaise) persisting for greater than 30 days; **Laboratory Abnormalities:** hyperkalemia, hypernatremia.

7 DRUG INTERACTIONS

In-vitro studies indicate that zoledronic acid is approximately 22% bound to plasma proteins. *In-vitro* studies also indicate that zoledronic acid does not inhibit microsomal CYP450 enzymes. *In-vivo* studies showed that zoledronic acid is not metabolized, and is excreted into the urine as the intact drug.

7.1 Aminoglycosides

Caution is advised when bisphosphonates are administered with aminoglycosides, since these agents may have an additive effect to lower serum calcium level for prolonged periods. This effect has not been reported in Zometa clinical trials.

7.2 Loop Diuretics

Caution should also be exercised when Zometa is used in combination with loop diuretics due to an increased risk of hypocalcemia.

7.3 Nephrotoxic Drugs

Caution is indicated when Zometa is used with other potentially nephrotoxic drugs.

7.4 Thalidomide

No dose adjustment for Zometa 4 mg is needed when co-administered with thalidomide. In a pharmacokinetic study of 24 patients with multiple myeloma, Zometa 4 mg given as a 15 minute infusion was administered either alone or with thalidomide (100 mg once daily on days 1-14 and 200 mg once daily on days 15-28). Co-administration of thalidomide with Zometa did not significantly change the pharmacokinetics of zoledronic acid or creatinine clearance.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Pregnancy Category D [see Warnings and Precaution (5.9)]

There are no adequate and well-controlled studies of Zometa in pregnant women. Zometa may cause fetal harm when administered to a pregnant woman. Bisphosphonates, such as Zometa, are incorporated into the bone matrix and are gradually released over periods of weeks to years. The extent of bisphosphonate incorporation into adult bone, and hence, the amount available for release back into the systemic circulation, is directly related to the total dose and duration of bisphosphonate use. Although there are no data on fetal risk in humans, bisphosphonates do cause fetal harm in animals, and animal data suggest that uptake of bisphosphonates into fetal bone is greater than into maternal bone. Therefore, there is a theoretical risk of fetal harm (e.g., skeletal and other abnormalities) if a woman becomes pregnant after completing a course of bisphosphonate therapy. The impact of variables such as time between cessation of bisphosphonate therapy to conception, the particular bisphosphonate used, and the route of administration (intravenous versus oral) on this risk has not been established. If this drug is used during pregnancy or if the patient becomes pregnant while taking or after taking this drug, the patient should be apprised of the potential hazard to the fetus.

In female rats given subcutaneous doses of zoledronic acid of 0.01, 0.03, or 0.1 mg/kg/day beginning 15 days before mating and continuing through gestation, the number of stillbirths was increased and survival of neonates was decreased in the mid- and high-dose groups (≥ 0.2 times the human systemic exposure following an intravenous dose of 4 mg, based on an AUC comparison). Adverse maternal effects were observed in all dose groups (with a systemic exposure of ≥ 0.07 times the human systemic exposure following an intravenous dose of 4 mg, based on an AUC comparison) and included dystocia and periparturient mortality in pregnant rats allowed to deliver. Maternal mortality may have been related to drug-induced inhibition of skeletal calcium mobilization, resulting in periparturient hypocalcemia. This appears to be a bisphosphonate-class effect.

In pregnant rats given a subcutaneous dose of zoledronic acid of 0.1, 0.2, or 0.4 mg/kg/day during gestation, adverse fetal effects were observed in the mid- and high-dose groups (with systemic exposures of 2.4 and 4.8 times, respectively, the human systemic exposure following an intravenous dose of 4 mg, based on an AUC comparison). These adverse effects included increases in pre- and postimplantation losses, decreases in viable fetuses, and fetal skeletal, visceral, and external malformations. Fetal skeletal effects observed in the high-dose group included unossified or incompletely ossified bones, thickened, curved or shortened bones, wavy ribs, and shortened jaw. Other adverse fetal effects observed in the high-dose group included reduced lens, rudimentary cerebellum, reduction or absence of liver lobes, reduction of lung lobes, vessel dilation, cleft palate, and edema. Skeletal variations were also observed in the low-dose group (with systemic exposure of 1.2 times the human systemic exposure following an intravenous dose of 4 mg, based on an AUC comparison). Signs of maternal toxicity were observed in the high-dose group and included reduced body weights and food consumption, indicating that maximal exposure levels were achieved in this study.

In pregnant rabbits given subcutaneous doses of zoledronic acid of 0.01, 0.03, or 0.1 mg/kg/day during gestation (≤ 0.5 times the human intravenous dose of 4 mg, based on a comparison of relative body surface areas), no adverse fetal effects were

observed. Maternal mortality and abortion occurred in all treatment groups (at doses ≥ 0.05 times the human intravenous dose of 4 mg, based on a comparison of relative body surface areas). Adverse maternal effects were associated with, and may have been caused by, drug-induced hypocalcemia.

8.3 Nursing Mothers

It is not known whether zoledronic acid is excreted in human milk. Because many drugs are excreted in human milk, and because of the potential for serious adverse reactions in nursing infants from Zometa, a decision should be made to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother. Zoledronic acid binds to bone long term and may be released over weeks to years.

8.4 Pediatric Use

Zometa is not indicated for use in children.

The safety and effectiveness of zoledronic acid was studied in a one-year active-controlled trial of 152 pediatric subjects (74 receiving zoledronic acid). The enrolled population was subjects with severe osteogenesis imperfecta, aged 1-17 years, 55% male, 84% Caucasian, with a mean lumbar spine BMD of 0.431 gm/cm², which is 2.7 standard deviations below the mean for age-matched controls (BMD Z-score of -2.7). At one year, increases in BMD were observed in the zoledronic acid treatment group. However, changes in BMD in individual patients with severe osteogenesis imperfecta did not necessarily correlate with the risk for fracture or the incidence or severity of chronic bone pain. The adverse events observed with Zometa use in children did not raise any new safety findings beyond those previously seen in adults treated for hypercalcemia of malignancy or bone metastases. However, adverse reactions seen more commonly in pediatric patients included pyrexia (61%), arthralgia (26%), hypocalcemia (22%) and headache (22%). These reactions, excluding arthralgia, occurred most frequently within 3 days after the first infusion and became less common with repeat dosing. Because of long-term retention in bone, Zometa should only be used in children if the potential benefit outweighs the potential risk.

Plasma zoledronic acid concentration data was obtained from 10 patients with severe osteogenesis imperfecta (4 in the age group of 3-8 years and 6 in the age group of 9-17 years) infused with 0.05 mg/kg dose over 30 min. Mean C_{max} and AUC_(0-last) was 167 ng/mL and 220 ng.h/mL, respectively. The plasma concentration time profile of zoledronic acid in pediatric patients represent a multi-exponential decline, as observed in adult cancer patients at an approximately equivalent mg/kg dose.

8.5 Geriatric Use

Clinical studies of Zometa in hypercalcemia of malignancy included 34 patients who were 65 years of age or older. No significant differences in response rate or adverse reactions were seen in geriatric patients receiving Zometa as compared to younger patients. Controlled clinical studies of Zometa in the treatment of multiple myeloma and bone metastases of solid tumors in patients over age 65 revealed similar efficacy and safety in older and younger patients. Because decreased renal function occurs more commonly in the elderly, special care should be taken to monitor renal function.

10 OVERDOSAGE

Clinical experience with acute overdosage of Zometa is limited. Two patients received Zometa 32 mg over 5 minutes in clinical trials. Neither patient experienced any clinical or laboratory toxicity. Overdosage may cause clinically significant hypocalcemia, hypophosphatemia, and hypomagnesemia. Clinically relevant reductions in serum levels of calcium, phosphorus, and magnesium should be corrected by intravenous administration of calcium gluconate, potassium or sodium phosphate, and magnesium sulfate, respectively.

In an open-label study of zoledronic acid 4 mg in breast cancer patients, a female patient received a single 48-mg dose of zoledronic acid in error. Two days after the overdose, the patient experienced a single episode of hyperthermia (38°C), which resolved after treatment. All other evaluations were normal, and the patient was discharged seven days after the overdose.

A patient with non-Hodgkin's lymphoma received zoledronic acid 4 mg daily on four successive days for a total dose of 16 mg. The patient developed paresthesia and abnormal liver function tests with increased GGT (nearly 100U/L, each value unknown). The outcome of this case is not known.

In controlled clinical trials, administration of Zometa 4 mg as an intravenous infusion over 5 minutes has been shown to increase the risk of renal toxicity compared to the same dose administered as a 15-minute intravenous infusion. In controlled clinical trials, Zometa 8 mg has been shown to be associated with an increased risk of renal toxicity compared to Zometa 4 mg, even when given as a 15-minute intravenous infusion, and was not associated with added benefit in patients with hypercalcemia of malignancy [see Dosage And Administration (2.4) in the full prescribing information].

16 STORAGE

Store at 25°C (77°F); excursions permitted to 15-30°C (59-86°F) [see USP Controlled Room Temperature].

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- Patient assistance for low-income and uninsured patients
- Patients pre-qualified via phone screening for the Patient Assistance Program (PAP) will be sent a 30-day supply of their needed medication while completing the application

Understanding Bone Metastases:

When Cancer Spreads to the Bones

BONES—most of us take them for granted. Although we go through most of our life not thinking much about them, bones have many jobs. They store minerals. They protect our organs. They allow us to stand and move. When cancer spreads to the bone, known as *bone metastasis* (meh-TASS-tuh-sis), any of these functions can be affected.

If you have bone metastases, it's important to learn as much as possible about your condition and treatment options. Understanding bone metastases can give you the information you need to team up with your doctor as you make decisions about your treatment. By taking an active role in your own care, you'll be taking an important step toward feeling more in control of your bone health.

What Are Bone Metastases?

Cancer can spread from where it originally began to other parts of the body through the bloodstream, despite treatment. This process is called **metastasis**. When cancer spreads to the bones, the condition is called **bone metastasis**.¹

Cancer cells that have metastasized to the bone can damage the bone and make it weaker and more likely to break.¹

Although cancer can spread to any bone in the body, metastases are most often found in the bones near the center of the body.¹ The most common sites of bone metastases are the:

- Upper legs and arms
- Pelvis
- Rib cage
- Skull
- Spine

When cancer spreads to the bones, the tumors that develop at the new location are not new cancers, but an extension of the original cancer.¹ For example, if the original tumor was in the lung, and it spread to one or more bones, it would be called lung cancer with bone metastases.

Bone metastases should not be confused with primary bone cancer, a rare disease, which starts at the bone.²

How Do Bone Metastases Damage the Bone?

Bone metastases can wear away portions of the bone, leaving small holes.¹ These holes cause the bone to be weaker and more fragile. Sometimes bone metastases can cause the build up of abnormal bone. In both cases, this new abnormal bone is weak and unstable, and more prone to break or collapse.^{1,2} Because of this, one of the most common complications of bone metastases is a bone fracture (broken bone). Surgery may be needed to treat a fracture or to stabilize a weak area to prevent a fracture.¹

Who Gets Bone Metastases?

Some people with cancer develop bone metastases, and some do not.¹ Although it is impossible for doctors to predict which patients will develop bone metastases, certain risk factors can increase the likelihood of developing the condition.¹

Certain types of cancer are more likely to spread to the bone. These include:

- Breast cancer
- Prostate cancer
- Lung cancer

Multiple myeloma, also known as *myeloma*, is a cancer of the blood.² Metastases occur in up to 95% of patients with multiple myeloma, in up to 75% of patients with advanced breast or prostate cancer, and

Cancers With High Incidence of Bone Metastases

Type of Cancer	Incidence
Myeloma	70% to 95%
Breast	65% to 75%
Prostate	65% to 75%
Lung	30% to 40%

Adapted from Roodman GD. Pathophysiology of bone metastases. In: Kardamakis D, Vassiliou V, Chow E (eds). *Bone Metastases: A Translational and Clinical Approach*. Springer Science + Business Media; 2009:31.

in 30% to 40% of patients with lung cancer (see Table, “Cancers With High Incidence of Bone Metastases”).³ People with large tumors or tumors that have spread to the lymph nodes are more likely to have their cancer spread to bones.¹ Lymph nodes are small, pea-sized organs that act as filters or traps for foreign particles. They are important for the proper functioning of the immune system, which protects people against disease.¹

When a cancer is first discovered after it has spread to other organs, a patient’s risk of bone metastases increases.¹ If the cancer is detected early, before it spreads, a person may have a better chance of successful treatment and a lower risk of bone metastases.¹

Symptoms and Complications

Bone metastases can damage the bone and produce many different problems that can affect overall health. Receiving treatment for bone metastases as early as possible may help prevent complications later.¹

A few common symptoms and side effects of bone metastases may include:

Fractures. When bones are weakened by cancer, they can break more easily. Broken bones from metastases take longer to heal than normal fractures. In some cases, a fracture is the first sign of bone metastases.

The long bones of the arms and legs, and the bones of the spine, are the most common sites of fracture.⁴

Spinal cord compression. When cancer spreads to the spine, it can squeeze (compress) the spinal cord.¹ This can show up in different ways:

- Numbness of the legs or stomach
- Leg weakness or trouble moving the legs
- Unexpectedly passing urine or stool (incontinence), or problems passing urine¹

When patients notice symptoms like these, they should call the doctor immediately or go to the emergency room. If not treated right away, serious injury to the spinal cord can occur. In severe cases, spinal cord compression can lead to collapse of the spinal cord and paralysis (the inability to move).¹

High blood calcium levels. As cancer cells damage the bones, calcium is released into the blood. High levels of calcium in the blood (known as *hypercalcemia*) can cause the following symptoms¹:

- Reduced appetite
- Nausea
- Thirst
- Constipation
- Tiredness
- Confusion

Patients with any of these symptoms should discuss them with a doctor to be sure these symptoms are not due to hypercalcemia. Without treatment, hypercalcemia can become serious and cause abnormal heart rhythm or coma.¹

Patients need to tell their doctor right away if they have any new bone symptoms or changes in old symptoms. Treating the symptoms of bone metastases early may help reduce the chances of developing more problems later on.¹

Treatment

It is difficult when a patient hears that he or she has bone metastases, but knowing that there are many treatment options available to help manage any symptoms or complications should be reassuring. When a doctor determines the need for treatment, understanding all of the options is important for the patient.

Below are brief descriptions of the different kinds of treatment available for bone metastases. Selecting the right treatment approach will depend on what type of cancer the patient has, the extent of the metastases, and other individual characteristics.

Radiation therapy. Radiation can help ease bone pain caused by cancer. Radiation is a beam of energy aimed at the cancer that has spread to the bones. Doctors use this to help shrink or slow down cancer growth. Radiation is usually given several times to the place that needs treatment. If the bone is too weak, doctors may first have to reinforce the bone through surgery.¹

Surgery. A doctor may recommend surgery on the patient's bone to ease pain and to keep it from breaking. To do this, doctors may place metal or glue in the bone to support it. After surgery, the patient may need to stay in the hospital for several weeks. It may take several months before they can put weight on the affected bone.¹

Other Therapies

Build strength: Several measures can be taken to help strengthen the bones. For example, physical therapy can help restore maximum function. In addition, a doctor may recommend that a patient take the following oral supplements every day:

- **Calcium**, to help fortify the bones
- **Vitamin D**, to help the body absorb and use calcium⁵

Together, a patient and his or her doctor can discuss the various alternative therapies and decide which one(s) are appropriate for the particular patient.

Taking Control

Regular physical activity can help improve how well patients function physically. Before beginning any type of physical activity, patients need to check with their doctors.

The importance of a patient's personal role in his or her own care can't be overstated. By being informed about their disease, patients may be better able to make decisions that are right for them. Following are

Questions to Ask the Doctor

Knowing what questions to ask the health care provider can help patients secure the answers they need to make cancer treatment decisions that are right for them. Below are some sample questions for patients to ask at their doctor visits:

Are there possible complications from bone metastases? If so, what preventive measures can I take?

What are my treatment options?

What are the risks and benefits of each kind of treatment?

What are the side effects of each treatment, and what can I do to help reduce or manage these side effects?

How will we know if treatment is working?

How will I know if any pain I experience is from bone metastases or something else (such as arthritis)?

How will each treatment affect my daily routine or that of my loved ones?

Are there new treatments or clinical trials that I should consider?

Should I have routine bone tests to monitor the health of my bones?

Indication

- ZOMETA (zoledronic acid) 4 mg/5 mL Injection is a treatment for hypercalcemia of malignancy (HCM; a condition resulting in high calcium blood levels due to cancer). ZOMETA is also used to reduce and delay bone complications due to multiple myeloma and bone metastases from solid tumors; used with anti-cancer medicines. ZOMETA is not an anti-cancer therapy. If you have prostate cancer, you should have failed treatment with at least one hormonal therapy prior to taking ZOMETA.

Important Safety Information

- Do not use ZOMETA if you have had a severe allergic reaction to zoledronic acid or any components of ZOMETA. These reactions, including rare cases of hives and angioedema (swelling often near your eyes and lips), and very rare cases of life-threatening allergic reactions, have been reported. ZOMETA is in a class of drugs called bisphosphonates, and contains the same active ingredient as that found in Reclast® (zoledronic acid). If you are treated with ZOMETA, you should not be treated with Reclast.
- If you have HCM, you should drink plenty of clear fluids before using ZOMETA. If you have kidney problems, tell your doctor. The risk of adverse reactions (especially related to the kidney) may be greater for you. ZOMETA treatment is not for patients with severe kidney problems. Patients with kidney problems on multiple cycles of ZOMETA or other bisphosphonates are at greater risk for further kidney problems. It is important to get your blood tests while you are receiving ZOMETA. Your doctor will monitor your kidney function before each dose. Tell your doctor if you are on other drugs, including aminoglycosides, loop diuretics, and drugs which may be harmful to the kidney.
- Osteonecrosis of the jaw (ONJ) has been reported mainly in cancer patients treated with intravenous bisphosphonates, including ZOMETA. Many of these patients were also receiving anti-cancer drugs and corticosteroids, which may make it more likely to get ONJ. If you have advanced breast cancer or a type of cancer called multiple myeloma, or if you have had dental extraction, periodontal disease, local trauma, including poorly fitting dentures, you may be at greater risk of getting ONJ. Many reports of ONJ involved patients with signs of local infection, including bone/bone marrow inflammation. You should maintain good oral hygiene and have a dental examination with preventive dentistry prior to beginning ZOMETA. While on treatment, avoid invasive dental procedures, if possible, as recovery may take longer. If you develop ONJ while on bisphosphonate therapy, dental surgery may worsen the condition. If you require dental procedures, there are no data available to suggest whether stopping ZOMETA treatment reduces the risk of ONJ. A causal relationship between bisphosphonate use and ONJ has not been established. Based on your condition, your doctor will determine the treatment plan you will receive.
- Do not use ZOMETA if you are pregnant or plan to become pregnant, or if you are breast-feeding.
- Severe and occasionally incapacitating bone, joint, and/or muscle pain has been reported in patients taking bisphosphonates, including ZOMETA. Do not continue using ZOMETA if severe symptoms develop, as some patients had the symptoms reappear after taking ZOMETA or another bisphosphonate again. In aspirin sensitive patients, bronchoconstriction (tightening of the airways in the lungs) has been observed while taking bisphosphonates.
- Report any hip, thigh, or groin pain to your doctor, as unusual thigh bone fractures have been reported in patients receiving bisphosphonates, including ZOMETA. These fractures may occur with little or no trauma. It is unknown whether the risk of fracture continues after stopping therapy.
- If you are an HCM patient with liver problems, talk to your doctor about whether ZOMETA is appropriate for you.
- HCM patients may experience flu-like symptoms (fever, chills, flushing, bone pain and/or joint or muscle pain). Common side effects in HCM patients include fever, nausea, constipation, anemia, shortness of breath, diarrhea, abdominal pain, worsening of cancer, insomnia, vomiting, anxiety, urinary tract infection, low phosphate levels, confusion, agitation, a fungal infection called moniliasis, low potassium levels, coughing, skeletal pain, low blood pressure, and low magnesium levels. Redness and swelling may occur at the site that you are injected.
- Common side effects for patients with multiple myeloma and bone metastases due to solid tumors include bone pain, nausea, fatigue, anemia, fever, vomiting, constipation, shortness of breath, diarrhea, weakness, muscle pain, anorexia, cough, joint pain, lower-limb swelling, worsening of your cancer, headache, dizziness (excluding vertigo), insomnia, decreased weight, back pain, numbness/tingling, and abdominal pain. These side effects are listed regardless of any potential association with the medications used in registration studies of ZOMETA in bone metastases patients.
- Eye-related side effects may occur with bisphosphonates, including ZOMETA. Cases of swelling related to fluid build-up in the eye, as well as inflammation of the uvea, sclera, episclera, conjunctiva, and iris of the eye have been reported.
- Patients with multiple myeloma and bone metastases from solid tumors should be taking an oral calcium supplement of 500 mg and a multiple vitamin containing 400 IU of vitamin D daily.
- **Please see full Prescribing Information and talk to your doctor for more information.**
- You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

The Treatment Team

Depending on the type of cancer, the treatment team may include:

MEDICAL ONCOLOGIST

A doctor who specializes in diagnosing and treating cancer.

ONCOLOGY NURSE

A nurse who specializes in helping people with cancer, and who may also be responsible for administering treatment, ordering tests, and prescribing medication under a doctor's supervision.

ONCOLOGY SOCIAL WORKER OR COUNSELOR

A social worker or counselor who specializes in helping patients and loved ones cope with the emotional impact of cancer, and who may also help identify other needed resources.

ORTHOPEDIC ONCOLOGIST

A medical doctor and surgeon who specializes in diagnosing and treating bone tumors. You may be referred to an orthopedic oncologist for a bone fracture.

PATHOLOGIST

A doctor who specializes in diagnosing cancer by studying tissue, fluid, or blood.

PATIENT NAVIGATOR

A nurse, social worker, or trained layperson who assists patients and loved ones on their journey through the health care system.

RADIATION ONCOLOGIST

A doctor who specializes in treating cancer using various forms of radiation by directing it on the tumor site in the body.

SURGEON

A doctor who performs surgeries to remove cancerous growths in the body.

some suggestions for patients to help them prepare to talk with their doctor:

- **Be prepared for every office visit.** Before each medical appointment, take some time to write down any questions or concerns.
- **Listen carefully during doctor appointments.** Take notes during appointments, and write down any instructions a doctor gives you so you can remember them once you leave the office.
- **Make sure you understand everything your doctor says.** If anything is unclear, ask your doctor to explain it.
- **Keep all appointments.** It's important to attend all of your doctor and treatment appointments to ensure the best outcome. If you're not feeling well or you're fatigued, ask someone to drive you to your appointment and stay with you.

The importance of a patient's personal role in his or her own care can't be overstated. By being informed about the disease, patients may be better able to make decisions that are right for them.

Finding Support

Finding support through family, friends, or local support groups can help patients deal with the emotional effects of cancer. Being able to share frustrations and feelings with family and friends is important.

Ask others for help. In many cases, friends, family, and members of the community may want to help, but they don't know how. The following strategies may help patients to involve these people:

- Make a list of things with which you'd like help. When people ask if they can help, give them an assignment from your list.
- Get rides to your doctor appointments. Ask people close to you to stay with you during doctor visits, and take notes about what your doctor says.
- Joining a support group and talking with other people who have bone metastases can help ease your feelings of isolation. In a support group, you can discuss your concerns, gain new insights, and secure some help solving problems. Your doctor or hospital may be able to provide information about local support groups. Support groups are all different, so look for one that is specific and interesting to you. If one doesn't meet your needs, don't hesitate to try another.

The list of online resources on the following pages offers support and information to help patients take control of their disease. ■

References

1. American Cancer Society. Bone metastasis. Available at: www.cancer.org/cancer/bone-metastasis. Accessed September 22, 2011.
2. American Cancer Society. Multiple myeloma. Available at: www.cancer.org/cancer/multiplemyeloma. Accessed September 22, 2011.
3. Roodman GD. Pathophysiology of bone metastases. In: Kardamakis D, Vassiliou V, Chow E, eds. *Bone Metastases: A Translational and Clinical Approach*. Dordrecht, Netherlands: Springer Science+Business Media BV; 2009:31-50.
4. American Cancer Society. Breast cancer. Available at: www.cancer.org/cancer/breastcancer. Accessed September 22, 2011.
5. American Cancer Society. Calcium. Available at: www.cancer.org/Treatment/TreatmentsandSideEffects/ComplementaryandAlternativeMedicine/HerbsVitaminsandMinerals/calcium. Accessed September 22, 2011.
6. National Comprehensive Cancer Network. Exercising during cancer treatment. Available at: <http://www.nccn.com/living-with-cancer/managing-symptoms/90-exercise-during-cancer-treatment.html>. Accessed September 22, 2011.

Breastcancer.org

www.breastcancer.org

The screenshot shows the Breastcancer.org homepage. At the top left is the logo, a red flower-like shape, followed by the text "BREASTCANCER.ORG". To the right is a search bar with "Search Breastcancer.org" and a "Search" button. Further right are links for "About Us" and "Donate". Below the header is a navigation menu with five categories: "Symptoms & Diagnosis", "Treatment & Side Effects", "Day-to-Day Matters", "Lower Your Risk", and "Community". Each category has a list of sub-links. For example, "Symptoms & Diagnosis" includes "Your Diagnosis", "Understanding Breast Cancer", "Screening and Testing", "Types of Breast Cancer", and "More Topics >". The "Treatment & Side Effects" category includes "Surgery", "Radiation Therapy", "Chemotherapy", "Complementary Medicine", and "More Topics >". The "Day-to-Day Matters" category includes "Nutrition", "Lymphedema", "Sex and Intimacy", "Breast Cancer & Your Job", and "More Topics >". The "Lower Your Risk" category includes "Understanding Risk", "Breast Cancer Risk Factors", "Organic Living", and "More Topics >". The "Community" category includes "Discussion Boards", "Blog", "Chat Rooms", and "More Topics >". Below the navigation menu is a large promotional banner for Stonyfield. The banner features the text "1,000,000 CUC = \$10 for Breastcancer.org" and "CAN HOLIDAY RECIPES BE HEALTHY AND DELICIOUS? YES! GET GREAT RECIPES". It also includes the Stonyfield logo and a "START HERE" button. To the right of the banner is a "Featured Content" section with links: "Support Breastcancer.org With an Easy Click", "Visit our Lower Your Risk Section", "Breast Cancer Diagnosis Guide iPhone App", "My Breast Cancer Coach", and "Breastcancer.org En Español". Below the banner is a "Breast Cancer in the News" section with a sub-header "Breast Cancer in the News" and a paragraph: "Breaking news about current breast cancer research. News articles provided by MedPage Today® with commentary from our Breastcancer.org experts." Below this is a link to "Family History of BRCA Mutation Not Cancer Risk Factor for Women Who Test Negative" dated "Nov 1, 2011". To the right of the news section is a "Donate to Breastcancer.org" button with a right-pointing arrow. Below the button is a paragraph: "Breastcancer.org is a nonprofit organization dedicated to providing the most reliable, complete, and up-to-date information about breast cancer and breast health as well as an active and supportive online community."

ADDRESS:
7 E. Lancaster Ave.
3rd Floor
Ardmore, PA 19003

CONTACT INFO:
Email: [Online form](#)

Breastcancer.org is a nonprofit organization that provides accurate and up-to-date information to patients with breast cancer. By clicking on the **Symptoms and Diagnosis** tab at the top of the homepage, then on **Types of Breast Cancer**, then on **Recurrent and Metastatic Breast Cancer**, visitors will find helpful information on **Where Breast Cancer Might Come Back and How to Detect It**, **Living with Metastatic Disease**, **Treatments for Metastatic Cancer**, and more. **Day-to-Day Matters** also includes a section on **Bone Health**, tailored specifically to patients with cancer.

Y-ME National Breast Cancer Organization

www.y-me.org

The screenshot shows the Y-ME National Breast Cancer Organization website. At the top, there are language options: English, En Español, По-русски, Bằng tiếng Việt Nam, Sa Tagalog, 한국어, and 中文. The main header features the Y-ME logo with the tagline 'Breast cancer support today.' and navigation links for 'Contact Us' and 'Join Mailing List'. Below the header is a menu with categories: Information, Emotional Support, Programs & Services, Get Involved, and Donate Now. On the left side, there is a sidebar with links to 'YourShoes', 'E-mail YourShoes', 'Survivor Match Program', 'Partner Match Program', 'Wig and Prosthesis Bank', 'Gerry Weinberg Library', 'ShareRing Transcript Archives', and 'Support Groups'. A 'PDF Transcript »' button is also visible. The main content area displays the title 'Bone Health and Managing Bone Metastases' and a page navigation bar (Page: 1 | 2 | 3 | 4 | 5 | 6). The text of the transcript begins with 'ARLINE KALLICK: Thank you. Hello everyone, and welcome to the Y-ME ShareRing Network National Teleconference. The call will begin tonight with our speaker, Dr. Charles Shapiro. Dr. Shapiro is Professor of Medicine in the Department of Internal Medicine at the Ohio State University College of Medicine in Columbus. Dr. Shapiro received his medical degree at the State University of New York in Buffalo, and completed an internship and residency in internal medicine at Temple University Hospital in Philadelphia. And he completed his postdoctoral training with a fellowship in medical oncology at the Dana-Farber Cancer Institute in Boston. Dr. Shapiro is currently serving as the principle investigator of the Lance Armstrong Survivorship Center of Excellence at the Ohio State University College of Medicine, and is the Director of the Symptom Intervention Committee of the Cancer and Leukemia Group B. His research interests include treatments related toxicities of cancer therapy, and Phase I and II clinical evaluation of new drugs for the treatment of breast cancer.' The text continues with 'Our topic tonight is: "Bone Health and Managing Bone Metastases." The presentation will be followed by a question and answer session, and then we will end with small group discussions. We realize it's difficult to answer everyone's question in a one-hour teleconference, so if your question does not get presented during the question and answer portion or the group discussion, please contact Y-ME Hotline at (800) 221-2141. The hotline is answered by certified peer counselors who are breast cancer survivors, and it is available to you 24/7. When presenting a question to Dr. Shapiro, please be courteous to other callers by keeping your question brief and realizing that it cannot be a private consultation. A transcript of each call will be available at our Web site one week following the call. Our Web site is www.y-me.org.' The text concludes with 'We are now ready to begin with tonight's teleconference, and welcome Dr. Charles Shapiro. You may begin. DR. CHARLES SHAPIRO: Good evening everyone. I'm going to talk to you about a topic that's very relevant for survivors and those living with cancer, which I consider survivors too. It's bone health, and spread of cancer to the bones, we call them bone metastases. First, why are we so concerned about bone health for all women, and especially for breast cancer survivors? Well, bone health is important because everyone loses bone related to age, both men and women. Women have the added effect of going through menopause, which decreases the estrogen levels the body produces when they're having their menstrual period. In other words, when you become post-menopausal, your estrogen levels decrease. And estrogen has a very protective effect on bone. So women not only have the age related bone loss, which begins at about 35 years of old, but also have the added loss due to estrogen levels decreasing with the menopause. Now why is this important? Because osteoporosis, or fracture due to this bone loss will occur. And his

ADDRESS:
135 S. LaSalle St.
Suite 2000
Chicago, IL 60603

CONTACT INFO:
Phone: (800) 221-2141
(150 languages)
E-mail: yourshoes@y-me.org

For more than 30 years, Y-ME National Breast Cancer Organization has been providing emotional support and information to people concerned about breast cancer. When you call the Y-ME Hotline, you can reach a peer counselor who is also a breast cancer survivor, 24 hours a day, 7 days a week, 365 days a year. The [Getting Support](#) link can be accessed by selecting the [Risk & Detection](#) tab at the top of the homepage. The homepage also contains other ways to get support through the [Ask Via Email](#), [Forums](#), and [Match Program](#). The Breast Cancer Survivor Match Program pairs callers with peer counselors who share a commonality: the same diagnosis, the same age, or having experienced similar challenges. Other main tabs on the homepage include [Just Diagnosed](#), [Treatment](#), [Survivorship](#), [Get Involved](#), and [About Y-ME](#).

Living Beyond Breast Cancer

www.lbbc.org

LIVING BEYOND BREAST CANCER

LBBC Blog • Message Boards • Press Room • Stay Informed • Share

SEARCH

Text Size: A A A

UNDERSTANDING BREAST CANCER | LEARNING FROM OTHERS | EVENTS | DONATE | GET INVOLVED | ABOUT LBBC

Did You Know

Nearly 200,000 women will be diagnosed with breast cancer this year.

Help Us Reach Them.

LBBC empowers all women affected by breast cancer to live as long as possible with the best quality of life.

I Am Living Beyond

- Newly Diagnosed
- Metastatic Breast Cancer
- African-American
- Latina
- Young Women
- High Risk

Upcoming Events

11/17/2011

Creating a More Positive Body Image

During our November teleconference, Anne Katz, RN, PhD, will explore the impact breast cancer may have on your body image and discover strategies to improve self-acceptance.

Feature

Headlines

Washington, DC Residents Wowed by Yoga on the Steps® Success

Living Beyond Breast Cancer's national expansion initiative for Yoga on the Steps® kicked off in Washington, DC, where

ADDRESS:
354 West Lancaster Ave.
Suite 224
Haverford, PA 19041

CONTACT INFO:
Phone: (610) 645-4567, (484) 708-1550
E-mail: mail@lbbc.org

Living Beyond Breast Cancer (LBBC), founded in 1991 by radiation oncologist Marisa C. Weiss, MD, addresses a woman's need for breast-cancer-related information, connection and support after completing treatment. The foundation's mission is to empower all women affected by breast cancer to live as long as possible with the best quality of life. The website offers an array of information for breast cancer patients such as: **Breast Cancer Basics**, **Beyond the Basics**, **Breast Cancer News**, and information on clinical trials and research studies. In the **Guides to Understanding Breast Cancer**, you will find full-color, downloadable guides about Newly Diagnosed, Treatment Research Studies, Fear of Recurrence, Metastatic Treatment Options, and more.

Susan G. Komen for the Cure

www.komen.org

The screenshot shows the Susan G. Komen for the Cure website homepage. At the top, there is a navigation bar with links for 'About Us', 'Blog', 'Message Boards', 'myKomen', 'Español', and a 'SEARCH' box. Below this is a row of five pink buttons: 'I'VE BEEN DIAGNOSED WITH BREAST CANCER', 'SOMEONE I KNOW WAS DIAGNOSED', 'DONATE TO END BREAST CANCER', 'SHARE YOUR STORY', and 'JOIN US AND STAY INFORMED'. A main navigation bar contains links for 'Understanding Breast Cancer', 'Get Involved', 'Research & Grants', 'Partners & Sponsors', 'ShopKomen.com', and 'Donate'. The main content area features a large banner for 'WHAT ARE CANCER CLUSTERS?' with a 'LEARN MORE' button. To the right, there are sections for 'FIND A RACE', 'BECOME AN ADVOCATE', and 'Breast Cancer News' with a list of recent news items. Below the main banner, there are three smaller promotional boxes: 'RACE WITH US IN PARADISE! JANUARY 14, 2012', 'ShopKomen.com', and '21 YEARS RUNNING' celebrating a partnership with New Balance. The footer contains a list of links (Help & FAQs, Site Map, Media Center, Contact Us, Affiliate Corner, Privacy Policy & Legal, Disclosure Statement), copyright information (© 2011 Susan G. Komen for the Cure®), and contact information (1-877 GO KOMEN). There are also logos for Charity Navigator and BBB.

ADDRESS:
5005 LBJ Freeway
Suite 250
Dallas, TX 75244

CONTACT INFO:
Phone: (877) GO-KOMEN
(877) 465-6636
E-mail: Online

Susan G. Komen for the Cure provides information and support to women with breast cancer. For information on bone metastases, highlight [Understanding Breast Cancer](#), then select [Understanding Breast Cancer Guide](#) in the drop-down menu. Toward the middle of the page, [Pain management related to metastatic breast cancer](#) and [Additional care for metastatic breast cancer](#) are just 2 sections under the “Metastatic Breast Cancer” tab. For more informative articles on topics including living with metastatic breast cancer, go to [Komen Perspectives](#) under the [Research & Grants](#) tab in the top navigation bar.

Prostate Cancer Foundation

www.pcf.org

The screenshot shows the Prostate Cancer Foundation website. At the top, there are navigation links: DONATE NOW, SHOP THE PCF STORE, FAQs, CONTACT US, and a search bar. The main header features the Prostate Cancer Foundation logo and the tagline "Accelerating the world's most promising research". Below this is a navigation menu with options: HOME, ABOUT PCF, UNDERSTANDING PROSTATE CANCER (highlighted), RESEARCH, FACES OF PROSTATE CANCER, and TAKE ACTION. The breadcrumb trail reads: Home > Understanding Prostate Cancer > Advanced Disease. The main content area is titled "UNDERSTANDING PROSTATE CANCER" and "ADVANCED DISEASE". A paragraph explains that advanced disease is typically not curable with surgery or radiation alone and often requires hormonal therapy. A list of topics includes: Managing Bone Metastases and Pain, Hormone Therapy, Chemotherapy, and Provenge. The left sidebar contains sections for "ABOUT PROSTATE CANCER", "LIVING WITH PROSTATE CANCER", and "HELPFUL RESOURCES". The right sidebar includes a "DONATE" button, a "GET INVOLVED" section, a "STAY INFORMED" newsletter sign-up, and a "FREE PROSTATE CANCER GUIDES" section with an image of guide covers.

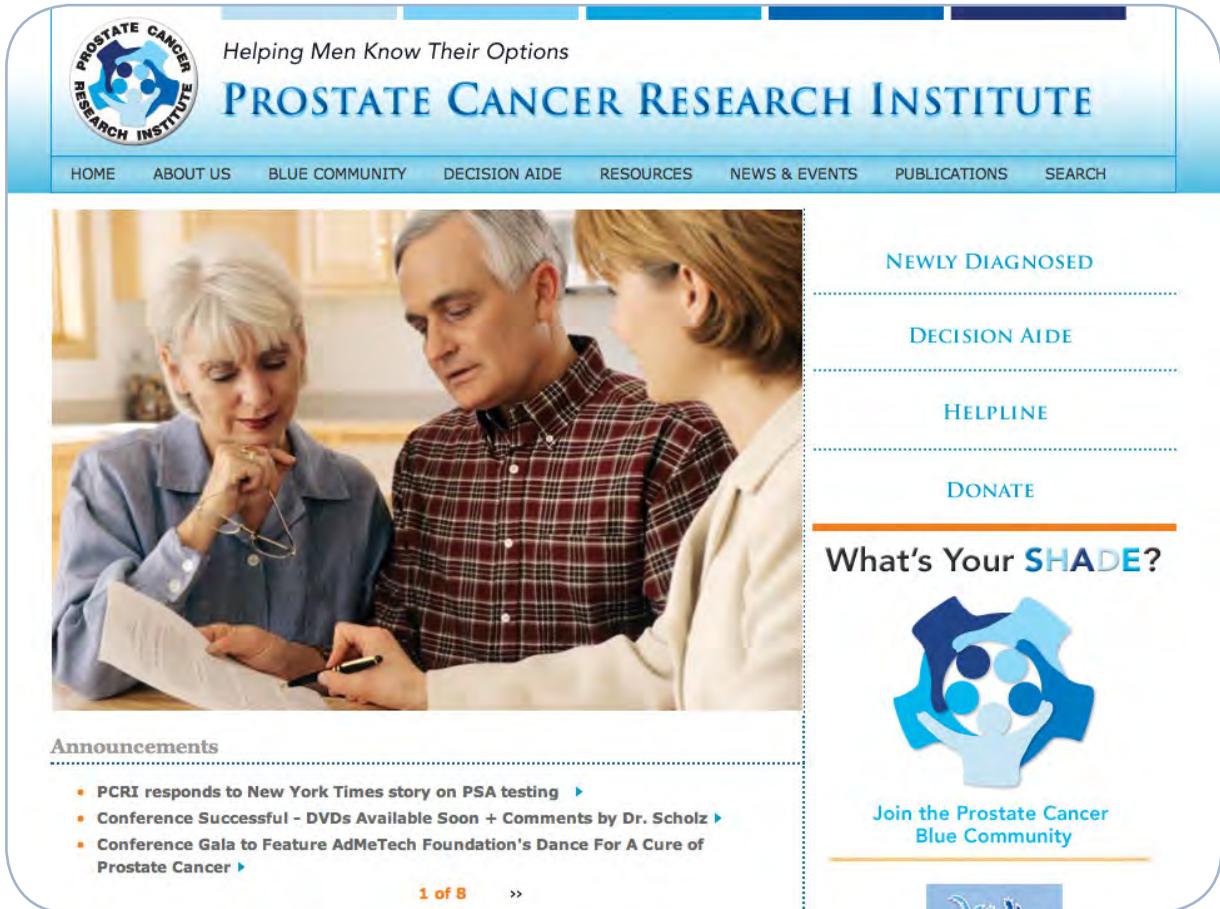
ADDRESS:
1250 Fourth Street
Santa Monica, CA 90401

CONTACT INFO:
Phone: (800)757-CURE [2873]
E-mail: info@pcf.org

The Prostate Cancer Foundation funds prostate cancer research worldwide and provides information for patients at its website. Highlighting **Understanding Prostate Cancer** on the homepage brings up a drop-down menu. Selecting **Advanced Disease** will take you to a page that links to sections on **Managing Bone Metastases**, **Hormone Therapy**, **Chemotherapy**, and other treatments. Access **Helpful Resources** in the lefthand navigation bar for excellent support and education information.

Prostate Cancer Research Institute

www.prostate-cancer.org



The screenshot shows the website's header with the logo and tagline "Helping Men Know Their Options". The main navigation menu includes: HOME, ABOUT US, BLUE COMMUNITY, DECISION AIDE, RESOURCES, NEWS & EVENTS, PUBLICATIONS, and SEARCH. Below the navigation is a large image of a doctor consulting with an elderly couple. To the right of the image are four menu items: NEWLY DIAGNOSED, DECISION AIDE, HELPLINE, and DONATE. Below these is a section titled "What's Your SHADE?" with the SHADE logo and the text "Join the Prostate Cancer Blue Community". At the bottom left of the screenshot is an "Announcements" section with three bullet points and a "1 of 8" indicator.

PROSTATE CANCER RESEARCH INSTITUTE
Helping Men Know Their Options

HOME ABOUT US BLUE COMMUNITY DECISION AIDE RESOURCES NEWS & EVENTS PUBLICATIONS SEARCH

NEWLY DIAGNOSED
DECISION AIDE
HELPLINE
DONATE

What's Your **SHADE**?

Join the Prostate Cancer Blue Community

Announcements

- [PCRI responds to New York Times story on PSA testing](#) ▶
- [Conference Successful - DVDs Available Soon + Comments by Dr. Scholz](#) ▶
- [Conference Gala to Feature AdMeTech Foundation's Dance For A Cure of Prostate Cancer](#) ▶

1 of 8 >>

ADDRESS:
5777 W. Century Blvd.
Suite 800
Los Angeles, CA 90045

CONTACT INFO:
Phone: (310) 743-2116
E-mail: info@pcri.org
Helpline: (800) 641-PCRI or
help@pcri.org

The Prostate Cancer Research Institute was founded by medical oncologists to educate patients and their families about prostate cancer. Selecting [Helpline](#) provides links to staff who can clearly explain diagnosis and treatment options. [PCRI Papers](#) contain educational information on prostate cancer treatments and their side effects, including novel therapies.

Us TOO International

www.ustoo.org

The screenshot shows the Us TOO International website interface. At the top, there is a navigation bar with links for 'ABOUT US TOO', 'CONTACT US', 'EVENTS', 'SITE MAP', 'HOME', and a search bar. Below the navigation bar is a banner with the text 'Someone to talk to... who understands!' and three small images labeled 'PATIENTS', 'FAMILY AND COMPANIONS', and 'HEALTH CARE PROFESSIONALS'. The main content area is titled 'Post-Treatment Issues' and includes a sub-section for 'Erectile Dysfunction/Impotence'. The text discusses the impact of prostate cancer treatment on sexual health and provides resources for support. A sidebar on the left contains various navigation links, and a 'RELATED LINKS' section is on the right.

Us TOO
PROSTATE CANCER
EDUCATION & SUPPORT

GET INVOLVED

- Make a Donation
- Volunteer
- Start a New Chapter
- Corporate Sponsors
- Advocacy

CHAPTERS & SUPPORT GROUPS

- Find a Chapter Near You
- Online Communities
- Support for Companions & Families

ABOUT PROSTATE CANCER

- Overview & Statistics
- Early Detection
- Newly Diagnosed
- Treatment Options
- Post-Treatment Issues
- Experienced a Relapse
- Advanced Disease
- Clinical Trials & Studies
- Emerging Treatments
- Special News for African American Men

HELPFUL RESOURCES

- Monthly Newsletter: The HotSheet
- Prostate Cancer NEWS You Can Use
- Audio, Video, Tools & Links
- Chapter Leader Resources
- Media Room
- Visit Our Store

Someone to talk to... who understands!

Post-Treatment Issues

[Erectile Dysfunction/Impotence](#) | [Incontinence/Urine Leakage](#) | [Bone Health](#) | [Follow-up Appointments](#) | [Nutrition](#) | [Glossary](#)

You've made it through prostate cancer treatment successfully, and your doctor has pronounced you cancer-free. You are probably feeling an overwhelming sense of relief! The last thing you ever want to think about is that the cancer may come back. It is up to you now to make sure it doesn't by visiting your doctor regularly and committing to a healthy lifestyle.

Awareness of your personal health has probably never been this high – you have had to endure uncomfortable tests, even more uncomfortable treatments, and maybe even some undesirable side effects. Because you have successfully navigated through all of these experiences, you can now help other men and their families to understand the disease, how it is treated, and what they can expect physically and emotionally, as well as provide them with a source of support and inspiration. Becoming an advocate for prostate cancer patients and their families can not only help other men and their families, but can improve your own emotional recovery from the disease.

This section gives a brief summary of what you need to do for the long-term to keep the chance of cancer recurrence low. It also describes ways in which you can become an advocate for prostate cancer awareness.

Erectile Dysfunction/impotence

A prostate cancer diagnosis can be devastating for the patient and his spouse or companion. The often-resulting erectile dysfunction and/or incontinence due to surgery or other treatment can bring additional grief, confusion and trauma to couples during an already stressful time. After treatment, many couples feel utterly unprepared to deal with the physical and emotional impact on their intimate relationship. One spouse confessed, "I thought ED was the guy down the street, not a medical condition that could devastate my marriage."

Couples facing prostate cancer often feel the need to be more connected than ever. Instead, confusion, embarrassment and fear caused by ED can cause both parties to feel alone and disconnected.

In the midst of this difficult news, it is important to know that there is HOPE. Perhaps more importantly, there are **options** that make mutually satisfactory sexual relationships possible in the presence of ED and impotence. In this instance, information truly is power. Paired with open and frank discussion and a willingness to explore options, couples facing ED can find satisfying solutions.

Prostate Cancer & ED

So what exactly is ED and why is it so closely linked with prostate cancer?

Normal male sexual function is a constellation of processes, including desire, emotional and psychological considerations, and physical function. Erectile dysfunction -- commonly known as impotence -- is defined as the inability to achieve or maintain an erection that is sufficient for satisfactory sexual activity. However, almost all men who have ED/impotence can overcome it.

The link to prostate cancer: The prostate is a small gland located at the bottom of the bladder. Common treatments for prostate cancer include pelvic surgery to remove the prostate (called a radical prostatectomy) radiation and/or hormone therapy.

ED following major pelvic surgery is not uncommon. The nerves which allow for an erection lie within millimeters of the prostate. These nerves may be injured by being cut or separated from the prostate during surgery. This may cause temporary or permanent impotence, although sexual desire and the ability to achieve orgasm should remain. Radiation can also impact this group of nerves. Hormone therapy can also cause a reduction in libido and possible difficulties with erections. This is generally reversible when the therapy is discontinued.

[Top](#)

[Visit our On-line Store](#)

RELATED LINKS

- [American Urological Association](#)
- [Managing Impotence - A Patient Guide](#)
- ["Intimacy with Impotence" Book by Ralph & Barbara Alterowitz](#)
- [Prostate Cancer and Intimacy \(PCAI\) Mailing List](#)
- [Make a Donation](#)

ADDRESS:
5003 Fairview Ave.
Downers Grove, IL 60515

CONTACT INFO:
Phone: (800) 808-7866
E-mail: ustoo@ustoo.org

Us TOO International is a prostate cancer education and support network. It was started in 1990 by prostate cancer survivors for prostate cancer patients, survivors, their spouses/partners, and families. Selecting **Post-Treatment Issues** from the **About Prostate Cancer** section enables visitors to access a **Bone Health** link at the top of the page to obtain information on bone metastases. Additional links cover spinal fractures, tips on bone health, and treatment options. **Audio, Video, Tools & Links** provides helpful publications and other educational resources.

Lung Cancer Alliance

www.lungcanceralliance.org

ADDRESS:
888 16th St. NW
Suite 150
Washington, DC 20006

CONTACT INFO:
Phone: (202) 463-2080
(800) 298-2436
E-mail: info@lungcanceralliance.org

The Lung Cancer Alliance (LCA) is a national nonprofit organization dedicated to supporting patients with lung cancer and keeping them informed. Several resources on the website address how bone metastases might affect patients with lung cancer. Information can be found under the **Facing Lung Cancer** tab, in the **About Lung Cancer** section. Visitors can find a **Phone Buddy** and read about patients who have experienced bone metastases in **Stories of Hope** in the **Support** section. LCA helps match patients with lung cancer to appropriate clinical trials.

International Myeloma Foundation

www.myeloma.org

The screenshot shows the homepage of the International Myeloma Foundation. At the top left is the IMF logo, a red circle with a white figure. To its right is the text "INTERNATIONAL MYELOMA FOUNDATION" and the tagline "Improving the quality of life of myeloma patients while working toward prevention and a cure". On the right side of the header, there is a search bar, a "Need help? Click to Talk" button with a phone icon, and a "Contact Us" button. Below the header is a navigation menu with links: "about myeloma", "research", "health professionals", "support", "webcasts", "meetings", "advocacy", "fundraising", "media", "blogs", and "about IMF". The main content area is divided into several sections. On the left, a large image of a smiling woman in blue scrubs is accompanied by the text "PROVIDE YOUR PATIENTS WITH THE NEWEST RESEARCH." and "The International Myeloma Foundation is here to help healthcare professionals gain access to the most up to date research." Below this is a "LEARN MORE >>" link. To the right of this image is a "New & Noteworthy" section with three bullet points: "IMF Nurse Leadership Board (NLB) Survivorship Care Plan published this month >>", "Going to ASH? Pre-register now for 'Myeloma Questions and Controversies: New Developments in 2011 That Impact Diagnosis, Prognosis, and Treatment' >>", and "Audio posted for the 8/8/11 teleconference: The Importance of Clinical Trial Participation >>". Below the main image is a "Donate!" section with text: "This year we received more qualified applications for the Novis Research Grants than we have ever received! We want to respond to this increase in applications by increasing the amount we can award. You can help. [Make your donation by 9-30-11](#) to fund one additional Junior and one additional Senior grant." Below this text is a "CHARITY NAVIGATOR" logo with "Four Star Charity" and the text "IMF receives Charity Navigator's highest rating". To the right of the "Donate!" section is a "Newly Diagnosed?" section with text: "You are not alone. The IMF is here to help you. Myeloma can very often be treated successfully, and many patients live long and productive lives after being diagnosed. We encourage you to learn as much as possible and to seek the best care possible. We are here to help you do that, while we work toward better treatments and a cure." Below this text is a "LEARN MORE >" link and a photo of a smiling couple. To the right of the "Newly Diagnosed?" section is a "Latest on a Search for a Cure..." section with text: "The International Myeloma Working Group, the research division of the IMF, is made up of 145 leading myeloma researchers who conduct a broad range of translational research projects, bringing new treatments from bench to bedside." Below this text is a "MORE >>" link. At the bottom of the page, there is a footer with the text "We thank our website sponsors" followed by a list of sponsors: "Amgen", "Binding Site", "Celgene Corporation", "Diplomat Specialty Pharmacy", and "Onyx Pharmaceuticals".

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12650 Riverside Drive
Suite 206
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CONTACT INFO:
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(818) 487-7455
E-mail: TheIMF@myeloma.org

Multiple myeloma is a hematologic malignancy characterized by destructive, progressive bone diseases. In addition to supporting research on myeloma's causes and cures and advocating on behalf of patients, the International Myeloma Foundation provides overviews on every aspect of the disease. Typing "bone" into the search field at the top of the page brings up a list of resources, including a link to a section containing [Bone Articles](#), which features webcasts and discussions with physicians on bone disease in myeloma.

Multiple Myeloma Research Foundation

www.themmr.org

The screenshot shows the homepage of the Multiple Myeloma Research Foundation (MMRF). At the top left is the MMRF logo with the tagline "Powerful Thinking Advances the Cure™". To the right is a "DONATE NOW" button and a search bar. Below the logo is a navigation menu with four tabs: "ABOUT THE MMRF", "LIVING WITH MULTIPLE MYELOMA" (which is highlighted in orange), "RESEARCH PROGRAMS", and "DONATE NOW TAKE ACTION".

The main content area is titled "NEWLY DIAGNOSED PATIENTS" and features an article titled "HOW MYELOMA AFFECTS NORMAL BONE PROCESSES". The article includes a list of five steps in the bone remodeling process:

1. Osteoclasts are attracted to areas of worn-out bone.
2. The activity of the osteoclasts creates a cavity in the bone; this process is known as **bone resorption**.
3. Osteoblasts are attracted to the cavity in the bone.
4. The osteoblasts fill in the cavity with a matrix or framework for new bone.
5. New bone forms to fill the cavity.

The article also explains that myeloma cells interfere with this process, leading to bone pain, fractures, and hypercalcemia. A sidebar on the left lists various resources for newly diagnosed patients, such as "Your Top Questions Answered", "What is Multiple Myeloma", and "Choosing Your Doctor".

At the bottom of the page, there are social media links for Facebook, YouTube, and Twitter, along with contact information and a copyright notice for 2011.

ADDRESS:
383 Main Avenue
5th Floor
Norwalk, CT 06851

CONTACT INFO:
Phone: (203) 229-0464
E-mail: info@themmr.org

The Multiple Myeloma Research Foundation sponsors research programs to discover new therapies for myeloma. Patient information is housed under **Living with Multiple Myeloma**. Bone disease is discussed under **Newly Diagnosed Patients: What is Multiple Myeloma**. In the section titled "Bone," visitors will find a link to **Learn more** about how the disease affects bone processes. Choose the **VIEW X-RAY** link to see what myeloma-associated bone damage looks like.

American Cancer Society

www.cancer.org

The screenshot shows the American Cancer Society website interface. At the top, there is a navigation bar with links for HOME, LEARN ABOUT CANCER, STAY HEALTHY, FIND SUPPORT & TREATMENT, EXPLORE RESEARCH, GET INVOLVED, and MY ACS. The main heading is 'LEARN ABOUT CANCER' with a sub-heading 'Find information and resources for a specific cancer topic'. Below this, there are three columns of content: 'Bone Metastasis' with a detailed description and three sub-sections (Circle Of Sharing, Clinical Trials, Talking About Cancer), a 'QUICK FINDER' sidebar with 'Detailed Guide' and 'Overview Guide' links, and a 'HOW CAN WE HELP YOU?' search bar. The American Cancer Society logo and 'THE OFFICIAL SPONSOR OF BIRTHDAYS' tagline are visible in the top left corner.

ADDRESS:
National Home Office
1599 Clifton Road NE
Atlanta, GA 30329-4251

CONTACT INFO:
Phone: (800) 227-2345
E-mail: Online form

The American Cancer Society offers information and support to patients with every type of cancer and their caregivers. To find information on bone metastases, highlight **Learn About Cancer** in the navigation bar, click **Show All Cancer Types**, and select **Bone Metastasis**. This section offers a **Bone Metastasis Overview Guide** for patients who have just begun to learn about cancer and a **Bone Metastasis Detailed Guide** for patients seeking extensive medical information on this complication of cancer.

Bone & Cancer Foundation

www.boneandcancerfoundation.org

The screenshot shows the homepage of the Bone & Cancer Foundation. At the top right, contact information is provided: Bone and Cancer Foundation, 120 Wall Street, Suite 1602 • New York, NY 10005-4035. Tel: 212 509-5188 • Toll Free: 888 862-0999. Fax: 212 509-8492 • Email: bcdn@aol.com. The left sidebar contains a navigation menu with categories: Information for Patients (List of Patient Publications, Television Public Service Announcement), Information for Health Professionals (Educational Resources, Conference), Other Resources (Related Links), and About Us (Governance, Privacy Statement, General Disclaimer). The main content area features a central announcement box: "Now Available for Health Professionals" regarding a "New Slide Set: Clinical Perspectives on the Treatment of Bone Metastasis" with a link to view it. Below this is a "Welcome" message and a statement of the foundation's mission, which includes providing information for patients and family members, for health professionals, and advocating for research funding. The right sidebar contains a "NEWSLETTERS" section with a link to download the newsletter and a link to the "1st BONE AND CANCER FOUNDATION NEWSLETTER SUMMER 2010". Below this is a "How To Order Publications" section with links for patients and health professionals, and a "Glossary" and "FAQ" section. At the bottom of the right sidebar is a link to "Information About Clinical Trials".

ADDRESS:
120 Wall Street
Suite 1602
New York, NY 10005-4035

CONTACT INFO:
Phone: (212) 509-5188;
(888) 862-0999
E-mail: bcdn@aol.com

The Bone & Cancer Foundation serves as an information resource for patients and health care professionals on the treatment of bone cancer and bone metastases. The side bar includes a link to a [List of Patient Publications](#). This section features articles on [Managing Pain Related to Cancer and Bone](#), [Surgical Management of Cancer that Spreads to the Bone](#), and [Questions & Answers About Prostate Cancer, Bone Metastases and Treatment-Related Osteoporosis](#), along with articles on bone complications associated with breast cancer, lung cancer, and myeloma bone disease.

CancerCare

www.cancercare.org

CANCERCare® Free, professional support for anyone affected by cancer

En Español

Our Services Help By Diagnosis or Topic Stories of Help and Hope Ask CancerCare

Find financial help and resources for cancer-related costs
learn more >

For Patients and Survivors
For Caregivers and Loved Ones
For Healthcare Professionals

Calendar at a Glance

OCT 1	Fundraising Event Walk/Run for Hope – 5K for Mom Cranford, NJ
OCT 2	Fundraising Event Walk for Hope Long Branch, NJ
OCT 3	Fundraising Event Longest Day of Golf Fairfield, CT
OCT 5	Connect Education Workshop Update on Diffuse Large B-cell Lymphoma
OCT 7	Connect Education Workshop Caring for Your Bones When You Have Breast Cancer
OCT 10	Connect Education Workshop

From Our Blog

Working During Cancer Treatment
In the latest issue of The Oncology Nurse, CancerCare Director of Education and Training Carolyn Messner, DSW provides tips on coping with cancer treatments while continuing to... (continue)

Sensitivity to All Backgrounds, Cultures Crucial to Patient Care

Resources for Coping with Ovarian Cancer

Learn More About CancerCare's Specialized Services for Men, Women, Children, and Families

Featured Video

Our annual Walks for Hope take place across the country to raise awareness and help support our free services for anyone facing cancer—patients, survivors, loved ones.

Highlights from the past year at CancerCare.

Online Support Groups

ADDRESS:
275 Seventh Ave.
22nd Floor
New York, NY 10001

CONTACT INFO:
Phone: (212) 712-8400
(800) 813-HOPE (4673)
E-mail: info@cancercare.org

CancerCare is a national nonprofit organization dedicated to providing information and support to patients with cancer and their loved ones. The **Publications** link at the bottom of the page brings up an archive of downloadable publications sorted by category. The **Prostate Cancer** section contains articles on bone health and more. Choosing **For Patients and Survivors** takes visitors to professional support services. Find **Help by Diagnosis or Topic** in the top menu enables individuals to navigate to the breast or prostate cancer pages.

Healthline

www.healthline.com

The screenshot shows the Healthline website interface. At the top left is the Healthline logo with the tagline "Connect to Better Health". To the right is a search bar containing the text "Bone Metastases" and a "Search" button. Below the search bar are navigation links for "Symptom Search", "Treatment Search", "Doctor Search", and "Drug Search". A horizontal menu below that contains "Home", "Health A to Z", "Healthy Living", and "Check Your Symptoms". The main content area features a "Sponsored Links" section with two links: "Bone Metastases Info" (with a description and URL) and "Metastatic Bone Cancer" (with a description and URL). Below this is the "Results for Bone Metastases" section, which includes a sub-header "Understanding Bone Health" with an image of a human skeleton and a list of links: "Know Bone Metastases: Symptoms", "Know Bone Metastases: Diagnosis", "Know Bone Metastases: Managing Bone Pain", "Know Bone Metastases: Questions for Your Doctor", "Know Bone Metastases: Tips for Stronger Bones", and "Know Bone Metastases: Staying Active". To the right of this list is a "Symptoms" box containing "Bone Pain", "Spontaneous Fractures", "Hypercalcemia", and a "Go to Symptom Search" link. Below the symptoms box is a "Drugs" section listing "Aredia".

ADDRESS:
660 Third Street
San Francisco, CA 94107

CONTACT INFO:
Phone: (415) 281-3100
E-mail: Online form

Healthline is an online medical database designed to help consumers find accurate information on any health-related topic. To retrieve information on bone metastases, type “bone metastases” in the search bar at the top of the page. This brings up a list of physician-reviewed articles, videos, and images that include what secondary cancer is, how it is treated, questions for the doctor, tips for stronger bones, and staying active.

Compass

www.CompassSupportProgram.com

Compass
navigating how cancer may affect your bones*

Prescribing Information | Important Safety Information

AA Type size | Print page | E-mail page

Home | Living with Bone Metastases | Living with Multiple Myeloma | Patient Information Center | Support & Resources | Caregiver Corner

Welcome to Compass

An Education & Support Resource About How Cancer May Affect Bones

Compass about Bone Metastases from Solid Tumors

Learn about how cancer can affect your bones and the condition known as bone metastases

[enroll](#)

Compass about Multiple Myeloma

Get information about bone complications that develop in most people with multiple myeloma

[enroll](#)

Important Safety Information

Do not use ZOMETA if you have had a severe allergic reaction to zoledronic acid or any components of ZOMETA. These reactions, including rare cases of hives and angioedema (swelling often near

Click here for [Important Safety Information](#)

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch or call 1-800-FDA-1088.

People who are 65 years old and older are more likely to have kidney problems. If you are older than 65, your doctor may watch you more closely while taking ZOMETA.

*For prostate cancer patients, ZOMETA is only for those who have failed at least one hormonal therapy.

Brought to you by the makers of **ZOMETA** (zoledronic acid) 4mg/5mL Injection

Indication

ZOMETA (zoledronic acid) 4mg/5mL Injection is a treatment for hypercalcemia of malignancy (HCM; a condition resulting in high calcium blood levels due to cancer). ZOMETA is also used to reduce and delay bone complications due to multiple myeloma and bone metastases from solid tumors; used with anti-cancer medicines. ZOMETA

Patient Information Center

Find answers to FAQs about bone metastases and bone complications from multiple myeloma.

[Learn more](#)

Patient Stories

"I've had to overcome some things, and I don't let it get me down." -Jim

[View videos](#)

ADDRESS:
One Health Plaza
East Hanover, NJ 07936-1080

CONTACT INFO:
Phone: (888) 669-6682
E-mail: Online form

Compass is an online resource on bone metastases created by Novartis Oncology, makers of ZOMETA[®] (zoledronic acid) 4mg/5mL Injection. In the center of the page, visitors can choose **Bone Metastases** and click **enroll** to input details of their condition and receive e-mailed information, as well as a *Personalized Doctor Discussion Guide*. They can select **Living with Bone Metastases** from the top bar to learn about the topic, including the life cycle of bone, when metastases form, common symptoms, diagnosis, and the importance of treating bone metastases.

Indication

- ZOMETA (zoledronic acid) 4 mg/5 mL Injection is a treatment for hypercalcemia of malignancy (HCM; a condition resulting in high calcium blood levels due to cancer). ZOMETA is also used to reduce and delay bone complications due to multiple myeloma and bone metastases from solid tumors; used with anti-cancer medicines. ZOMETA is not an anti-cancer therapy. If you have prostate cancer, you should have failed treatment with at least one hormonal therapy prior to taking ZOMETA.

Important Safety Information

- Do not use ZOMETA if you have had a severe allergic reaction to zoledronic acid or any components of ZOMETA. These reactions, including rare cases of hives and angioedema (swelling often near your eyes and lips), and very rare cases of life-threatening allergic reactions, have been reported. ZOMETA is in a class of drugs called bisphosphonates, and contains the same active ingredient as that found in Reclast® (zoledronic acid). If you are treated with ZOMETA, you should not be treated with Reclast.
- If you have HCM, you should drink plenty of clear fluids before using ZOMETA. If you have kidney problems, tell your doctor. The risk of adverse reactions (especially related to the kidney) may be greater for you. ZOMETA treatment is not for patients with severe kidney problems. Patients with kidney problems on multiple cycles of ZOMETA or other bisphosphonates are at greater risk for further kidney problems. It is important to get your blood tests while you are receiving ZOMETA. Your doctor will monitor your kidney function before each dose. Tell your doctor if you are on other drugs, including aminoglycosides, loop diuretics, and drugs which may be harmful to the kidney.
- Osteonecrosis of the jaw (ONJ) has been reported mainly in cancer patients treated with intravenous bisphosphonates, including ZOMETA. Many of these patients were also receiving anti-cancer drugs and corticosteroids, which may make it more likely to get ONJ. If you have advanced breast cancer or a type of cancer called multiple myeloma, or if you have had dental extraction, periodontal disease, local trauma, including poorly fitting dentures, you may be at greater risk of getting ONJ. Many reports of ONJ involved patients with signs of local infection, including bone/bone marrow inflammation. You should maintain good oral hygiene and have a dental examination with preventive dentistry prior to beginning ZOMETA. While on treatment, avoid invasive dental procedures, if possible, as recovery may take longer. If you develop ONJ while on bisphosphonate therapy, dental surgery may worsen the condition. If you require dental procedures, there are no data available to suggest whether stopping ZOMETA treatment reduces the risk of ONJ. A causal relationship between bisphosphonate use and ONJ has not been established. Based on your condition, your doctor will determine the treatment plan you will receive.
- Do not use ZOMETA if you are pregnant or plan to become pregnant, or if you are breast-feeding.
- Severe and occasionally incapacitating bone, joint, and/or muscle pain has been reported in patients taking bisphosphonates, including ZOMETA. Do not continue using ZOMETA if severe symptoms develop, as some patients had the symptoms reappear after taking ZOMETA or another bisphosphonate again. In aspirin sensitive patients, bronchoconstriction (tightening of the airways in the lungs) has been observed while taking bisphosphonates.
- Report any hip, thigh, or groin pain to your doctor, as unusual thigh bone fractures have been reported in patients receiving bisphosphonates, including ZOMETA. These fractures may occur with little or no trauma. It is unknown whether the risk of fracture continues after stopping therapy.
- If you are an HCM patient with liver problems, talk to your doctor about whether ZOMETA is appropriate for you.
- HCM patients may experience flu-like symptoms (fever, chills, flushing, bone pain and/or joint or muscle pain). Common side effects in HCM patients include fever, nausea, constipation, anemia, shortness of breath, diarrhea, abdominal pain, worsening of cancer, insomnia, vomiting, anxiety, urinary tract infection, low phosphate levels, confusion, agitation, a fungal infection called moniliasis, low potassium levels, coughing, skeletal pain, low blood pressure, and low magnesium levels. Redness and swelling may occur at the site that you are injected.
- Common side effects for patients with multiple myeloma and bone metastases due to solid tumors include bone pain, nausea, fatigue, anemia, fever, vomiting, constipation, shortness of breath, diarrhea, weakness, muscle pain, anorexia, cough, joint pain, lower-limb swelling, worsening of your cancer, headache, dizziness (excluding vertigo), insomnia, decreased weight, back pain, numbness/tingling, and abdominal pain. These side effects are listed regardless of any potential association with the medications used in registration studies of ZOMETA in bone metastases patients.
- Eye-related side effects may occur with bisphosphonates, including ZOMETA. Cases of swelling related to fluid build-up in the eye, as well as inflammation of the uvea, sclera, episclera, conjunctiva, and iris of the eye have been reported.
- Patients with multiple myeloma and bone metastases from solid tumors should be taking an oral calcium supplement of 500 mg and a multiple vitamin containing 400 IU of vitamin D daily.
- **Please see full Prescribing Information and talk to your doctor for more information.**
- You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

National Cancer Institute

www.cancer.gov

The screenshot shows the National Cancer Institute website interface. At the top right, there are links for 'In English | En español' and 'Questions About Cancer? 1-800-4-CANCER'. Below this is a search bar with a 'SEARCH' button. A navigation bar contains links for 'NCI Home', 'Cancer Topics', 'Clinical Trials', 'Cancer Statistics', 'Research & Funding', 'News', and 'About NCI'. The main header features the 'National Cancer Institute at the National Institutes of Health' logo and a 'FactSheet' banner with a photo of two people. Below the banner, there are language options 'In English' and 'En español', and a 'Reviewed: 05/23/2011' date. The left sidebar includes a 'Search Fact Sheets by Keyword' section with a search box and a 'GO' button, and a 'View Fact Sheets by Topic' section with various links like 'Cancer Type', 'Risk Factors and Possible Causes', 'Prevention', 'Detection/Diagnosis', 'Cancer Therapy', 'Support/Coping/Resources', 'Tobacco/Smoking Cessation', 'Information Sources', 'About NCI', 'Cancer Health Disparities', 'Cancer Advances In Focus', 'Index', and 'En español'. At the bottom of the sidebar are 'Page Options' for 'Print This Page' and 'Email This Document'. The main content area is titled 'Metastatic Cancer' and features a 'Key Points' section with a bulleted list of facts. Below this is a section titled '1. What is metastatic cancer?' which contains two paragraphs of text explaining the nature of metastatic cancer.

In English | [En español](#)

National Cancer Institute
at the National Institutes of Health

[Questions About Cancer?](#)
1-800-4-CANCER

SEARCH

NCI Home | [Cancer Topics](#) | [Clinical Trials](#) | [Cancer Statistics](#) | [Research & Funding](#) | [News](#) | [About NCI](#)

NATIONAL CANCER INSTITUTE
FactSheet

In English | [En español](#)

Reviewed: 05/23/2011

Search Fact Sheets by Keyword

[GO](#)

View Fact Sheets by Topic

- [Cancer Type](#)
- [Risk Factors and Possible Causes](#)
- [Prevention](#)
- [Detection/Diagnosis](#)
- [Cancer Therapy](#)
- [Support/Coping/Resources](#)
- [Tobacco/Smoking Cessation](#)
- [Information Sources](#)
- [About NCI](#)
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- [Cancer Advances In Focus](#)
- [Index](#)
- [En español](#)

Page Options

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Metastatic Cancer

Key Points

- **Metastatic** cancer is cancer that has spread from the place where it first started to another place in the body (see [Question 1](#)).
- Metastatic cancer has the same name and same type of cancer cells as the original cancer (see [Question 1](#)).
- The most common sites of cancer metastasis are the lungs, bones, and liver (see [Question 3](#)).
- Treatment for metastatic cancer usually depends on the type of cancer and the size, location, and number of metastatic **tumors** (see [Question 8](#)).

1. What is metastatic cancer?

Metastatic cancer is cancer that has spread from the place where it first started to another place in the body. A tumor formed by metastatic cancer cells is called a metastatic tumor or a metastasis. The process by which cancer cells spread to other parts of the body is also called metastasis.

Metastatic cancer has the same name and the same type of cancer cells as the original, or primary, cancer. For example, breast cancer that spreads to the lungs and forms a metastatic tumor is metastatic breast cancer, not lung cancer.

Under a microscope, metastatic cancer cells generally look the same as cells of the original cancer. Moreover, metastatic cancer cells and cells of the original cancer usually have some molecular features in common, such as the expression of certain **proteins** or the presence of specific **chromosome** changes.

ADDRESS:
6116 Executive Blvd.
Suite 300
Bethesda, MD 20892-8322

CONTACT INFO:
Phone: (800) 422-6237
(800) 4-CANCER
E-mail: [Online form](#)

The National Cancer Institute (NCI) is a part of the National Institutes of Health. In addition to supporting and coordinating cancer research, NCI offers information on virtually all issues related to cancer. To find information on bone metastases, click on [Cancer Topics](#) in the top navigation bar, then select [NCI Fact Sheets](#) under the [Cancer Library](#) section. From there, click [Cancer Type](#), then choose [Metastatic Cancer](#). Visitors can also find links to related information and relevant clinical trials.

The ZOMETA (zoledronic acid) 4mg/5mL Injection Support System



The ZOMETA (zoledronic acid) 4mg/5mL Injection Card Program – Reducing Patient’s Co-Pay Commitments

- Covers out-of-pocket and co-insurance costs
- Patient pays max of \$25.
- The out-of-pocket costs for the first infusion of ZOMETA (zoledronic acid) 4mg/5mL Injection is covered 100%.
- No income eligibility criteria. To be eligible, patients must:
 1. Have a commercial insurance plan
 2. Have been prescribed ZOMETA for an on-label indication
 3. Not be a resident in MA
- The ZOMETA Card Program covers patient co-pay expenses up to a maximum of \$2500 per year.

Patients can enroll at www.ZOMETAcad.com or by calling 1-888-966-3826.

The ZOMETA Card program is issued by The Bancorp Bank pursuant to license by MasterCard International, and this card may not be used everywhere Debit MasterCard is accepted. No cash or ATM access. MasterCard is a registered trademark of MasterCard International Incorporated. The Bancorp Bank; Member FDIC.



ZOMETACares – a support, information, and adherence program for patients taking ZOMETA

ZOMETACares is a complimentary program that gives you access to an experienced oncology nurse who will be there for you throughout your treatment. Your ZOMETACares nurse will be just a phone call away to answer your questions and lend a listening ear.

With your ZOMETACares nurse, you don't need to wait for answers to your questions, and you never need to feel alone. Your ZOMETACares nurse will work with your medical team to make sure all of your questions are answered, and you have all the information and support you need. You can enroll right now by calling **1-888-3-ZOMETA (1-888-396-6382)**, 9:30AM-10:00PM Monday-Friday EST/EDT.

Here's how ZOMETACares works

After you enroll in ZOMETACares:

- A ZOMETACares oncology nurse will be assigned to you. Your ZOMETACares nurse will contact your doctor to find out the details of your treatment plan.
- You'll get a call from your nurse, who will be your regular contact, at the number and time of day you request.
- Your nurse will continue to contact you at pre-arranged times to help answer your questions and help make sure your treatment is going smoothly.
- You'll receive a call from your ZOMETACares nurse the day before each treatment to remind you of your appointment and the day after each treatment to check on how you're feeling.
- You can call your ZOMETACares nurse any time you have a question or just need to talk.
- Your ZOMETACares nurse will stay in touch with you and with your doctor's office throughout the course of your treatment with ZOMETA.

Take advantage of additional support. Enroll in ZOMETACares today.

Going through treatment can be a challenge. Get the additional support you need. Talk with your doctor or oncology nurse and call **1-888-3-ZOMETA (1-888-396-6382)**, Monday-Friday, 9:30AM-10:00PM EST/EDT to learn more about ZOMETACares.

Take advantage of all that's available to you. Enroll in ZOMETACares today.

Resources for oncology professionals and their patients

Compass

navigating how cancer may affect your bones*

Compass—a program from Novartis Oncology designed to empower, inspire, and support patients

- Compass is a website that serves as the entry point to www.bonemets.com
- By signing up, enrollees will gain access to a series of informational e-mails about ZOMETA (zoledronic acid) 4mg/5mL Injection and bone metastases
- Upon enrollment into the program, users will enter into 1 of 3 possible segments
 - On ZOMETA
Objective Adherence
 - Diagnosed with bone metastases but not on ZOMETA
Objective Appropriate treatment
 - Diagnosed with cancer but not bone metastases
Objective Awareness
- E-mails will include information on the complications of bone metastases and how ZOMETA may work to treat them, as well as additional lifestyle tips
- Health care providers and oncology nurses can offer Compass as a supportive and information-rich resource to their patients

* For prostate cancer patients, ZOMETA is only for those who have failed at least one hormonal therapy.

Indication and Highlights from the Important Safety Information

Indication

ZOMETA (zoledronic acid) 4mg/5mL Injection is indicated for the treatment of hypercalcemia of malignancy (HCM) and patients with multiple myeloma and documented bone metastases from solid tumors, in conjunction with standard antineoplastic therapy. Prostate cancer should have progressed after treatment with at least one hormonal therapy. Safe and efficacious use of ZOMETA has not been established for use in hyperparathyroidism or non-tumor-related hypercalcemia.

Highlights from the Important Safety Information

- There have been reports of renal toxicity with ZOMETA. Renal toxicity may be greater in patients with renal impairment. Treatment in patients with severe renal impairment is not recommended. Do not use doses greater than 4 mg and monitor serum creatinine before each dose
 - ZOMETA is contraindicated in patients with hypersensitivity to zoledronic acid or any components of ZOMETA. Hypersensitivity reactions, including rare cases of urticaria and angioedema, and very rare cases of anaphylactic reaction/shock, have been reported
 - Osteonecrosis of the jaw (ONJ) has been reported predominantly in cancer patients treated with intravenous bisphosphonates, including ZOMETA. Many of these patients were also receiving chemotherapy and corticosteroids, which may be risk factors for ONJ. Postmarketing experience and the literature suggest a greater frequency of reports of ONJ based on tumor type (advanced breast cancer, multiple myeloma) and dental status
 - Patients being treated with ZOMETA should not be treated with Reclast® (zoledronic acid) as they contain the same active ingredient
 - ZOMETA should not be used during pregnancy. Women of childbearing potential should be advised to avoid becoming pregnant. If the patient becomes pregnant or plans to breast-feed while taking this drug, the patient should be apprised of the potential harm to the fetus or baby
 - In postmarketing experience, severe and occasionally incapacitating bone, joint, and/or muscle pain has been reported in patients taking bisphosphonates including ZOMETA. Discontinue use if severe symptoms develop, as a subset of patients had recurrence of symptoms when rechallenged with the same drug or another bisphosphonate. There have been reports of bronchoconstriction in aspirin sensitive patients receiving bisphosphonates
 - Atypical subtrochanteric and diaphyseal femoral fractures have been reported in patients receiving bisphosphonate therapy, including ZOMETA. Patients may experience hip, thigh, or groin pain before presenting with a completed femoral fracture. Causality with bisphosphonates has not been established
- Please see additional Important Safety Information on page 11.

ZOMETA[®]
(zoledronic acid) 4 mg/5 mL Injection 

