A Publication of
Pacific Shores Medical Group
A Hematology/Oncology Subspecialty Private Practice
Member, UCLA Affiliated Translational Oncology Research Network

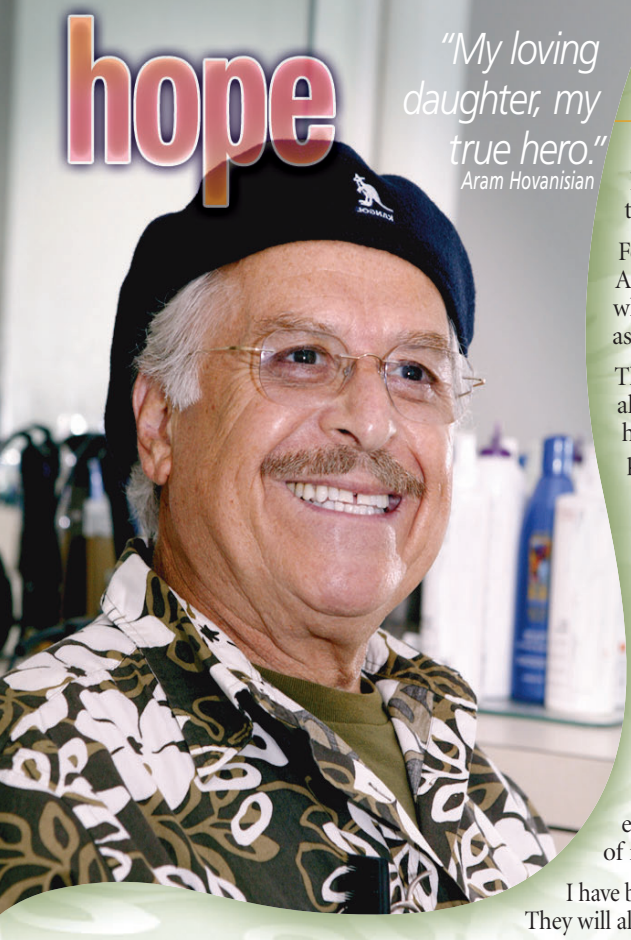
August 2005

hope options answers facts

A Look Inside

Bone Health

Multiple Myeloma
Bone Metastasis
Osteoporosis
Patient Stories
Scientific Publications & Abstracts
Questions & Answers



Who's My Hero?

Surviving Multiple Myeloma

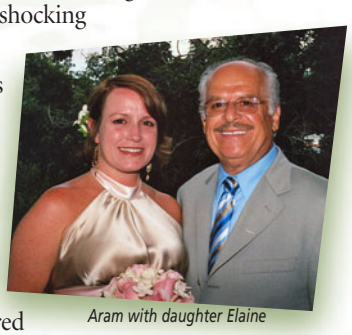
by Aram Hovanisian

I have always said, 'don't sweat the small stuff.' This is my philosophy and it has been helpful through many aspects of my life, especially when diagnosed with cancer.

For most of my life, my mind has been a powerful resource and has served as my "hero from within." As a devoted father, who lives life to its fullest, I have learned to pay attention to and to prioritize what is most important to me and my family. My cancer diagnosis has not changed the way I think, as I put "mind over matter."

Though I was experiencing extreme back pain, I continued to work as a hair stylist and went on with all of my daily tasks; 'mind over matter,' I thought. Thankfully, one day, my daughter Elaine, my true hero, persuaded me to go to the emergency room. It was there where I was diagnosed with multiple myeloma with bone metastases (cancer in my bones). It was a shocking and surreal experience: I had cancer.

My doctor, Dr. Patrick Cahill, became another one of my heroes as he began navigating my course. First and most importantly, he referred me to Dr. Tchekmedyian, whom he described as an expert in cancer treatment and research. He felt confident that Dr. T could manage my cancer as well as help keep my bones strong. This was a requirement, because, 'make no bones about it,' as a hairstylist, I had to be on my feet, and my bones needed to be strong!



Aram with daughter Elaine

Dr. T's ability to champion all aspects of my treatment offered much comfort and support to my family and me. Much to my pleasant surprise, I was able to work everyday and continued all of my normal activities, even as I underwent the most grueling aspect of my treatment, the medication thalidomide.

I have been cancer-free for nine years, and will never forget Dr. T and the team at Pacific Shores Medical Group. They will always be my heroes, and in many ways they have made me a hero.

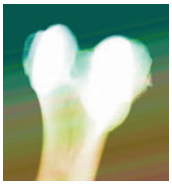
The Doctor Is In by Simon Tchekmedyian, MD

Multiple myeloma, even when it presents rather dramatically and with a large bone-centered mass, can be a very treatable disorder. Indeed, Mr. Hovanisian is a clear example of such a favorable course. He never missed a day of work since his diagnosis nine years ago. I saw him for an evaluation in June of 1996 because of severe back pain and a large mass in the back of his chest, centered in his sixth rib. A biopsy of the mass and a sample from his bone marrow confirmed a diagnosis of multiple myeloma; his blood tests also showed an abnormal protein produced by the malignant myeloma cells.

Following appropriate interventions that included irradiation, corticosteroids, the medication thalidomide, and intravenous bisphosphonates, Mr. Hovanisian went into remission and has remained free of any signs of myeloma. He has done very well, and his treatment outcome has been very rewarding for all of us. He has not had any bone fractures or new bone lesions, and he is pain free.

Multiple Myeloma

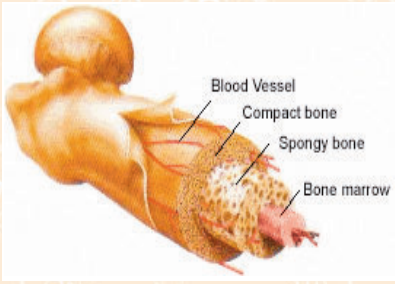
Multiple myeloma is a cancer of the bone marrow, and therefore usually starts and grows inside bones. The myeloma cancer cells, also known as malignant plasma cells, induce the production of various substances in the bone marrow, also known as cytokines. In turn, cytokines stimulate cells called osteoclasts, which destroy large portions of bone leading to bone pain and bone fractures. As bones are destroyed, there is further growth of the malignant myeloma cells. If left unchecked, the myeloma cells overwhelm the normal bone marrow where blood is produced, resulting in low blood cell counts, weakening of the immune system, severe weakness, and increased risk of infections.



Bone Metastasis

Many cancers travel to bones and grow there. For example, cancers that begin in the prostate or breast can frequently spread to the bone and cause bone metastases. However, other types of cancers including thyroid, kidney, colon, rectal, stomach, pancreatic, lung, and many others can spread to the bones. These metastases can lead to bone pain and bone fractures. Physicians need to anticipate these potential complications in order to prevent them when possible. Intravenous bisphosphonates, which reduce the process of bone destruction and help prevent fractures, have become part of the standard treatment for many patients with bone metastases. A tremendous amount of research is ongoing in order to continue to develop methods to reduce this problem in cancer patients.

A key component of myeloma treatment is restoring and preserving bone health. New medications diminish osteoclasts' ability to destroy bones and have been a major breakthrough in myeloma treatment. Indeed, medications known as bisphosphonates work predominantly by inhibiting bone destruction, reducing the risk of bone pain and bone fracture. Further, some evidence also suggests these medications can diminish myeloma cells growth.



Bisphosphonates are given intravenously for myeloma therapy and are generally well tolerated, but need to be administered carefully by experienced physicians, who should also track the patient's kidney function and calcium levels. Side effects may include low-grade temperatures, increased pain in bones following treatments, and low calcium levels. In rare instances, persistent jaw swelling and poor healing after dental work have been reported. Therefore, it is important to maintain careful dental hygiene and to monitor oral health during treatment.

Research is ongoing with medications that target the process of bone destruction, so we may have additional options in the coming years.

The Gift to Impart *Living Well with Osteoporosis*

by Sister Ellen (Helena) Clarke, S.J.C.

I consider myself most fortunate to have come under Dr. Tchekmedyian's care. His approach is very personal and individual, and I'm amazed at how he can adapt to his patients' unique needs with skill and expertise.

With encouragement he urges us to comply with the treatment in view of the best results and has a way of bringing our thinking around to better perspectives. He is gifted in his clinical and research work with an ability to change mental attitudes and to establish positive and holistic goals.

As I observe his team and my fellow patients, I experience the potent influence he has had on my life and realize I'm in the presence of a real healer.

To all who accompany me as we journey, my sincere and prayerful thank you for sharing your "gift to impart".

Sister Ellen (Helena) Clarke, S.J.C. (left) and Sister Elizabeth Butler, S.J.C.

The Doctor Is In by Simon Tchekmedyian, MD

Although osteoporosis is more frequent after menopause, especially in white women, it is a disorder that can affect all women as well as men in association with a wide variety of conditions. In fact, failure to address the osteoporosis risk associated with certain medical disorders can lead to serious complications such as hip fractures.

A hip fracture can be a devastating complication, often leading to pain, disability, hospitalization, and even mortality. Fractures of vertebral bodies in the spine are also frequent and painful in patients with osteoporosis, and are often associated with loss of height, as well as an unwanted forward curving of the spine.

Sister Helena's tests indicated very low bone mineral density, which demonstrated that she had osteoporosis. Complicating matters, she was entirely unable to tolerate oral biophosphonate medication because of gastric intolerance. Her internist, Dr Greta Wanyik, asked me to see her to consider the possibility of giving her the biophosphonate medication intravenously as an alternative. At Pacific Shores Medical Group, she was started on a course of treatment with an intravenous bisphosphonate, and she has tolerated it well. Her treatment was given over 15-minute periods once every six months. Fortunately, her bone mineral density is improving, and she has not experienced any fractures. We always encourage her to take calcium and vitamin D and to remain physically active. I explained to her that while the medication may help her build her bone density level, the strength and quality of her bones can improve with exercise.

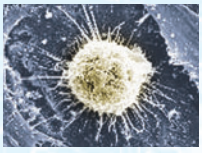
Sister Ellen (Helena) Clarke, S.J.C. (left) and Dr. Tchekmedyian

About Osteoporosis

Osteoporosis is characterized by low bone mass, which reduces bone strength and increases the risk of fractures. Women are frequently affected by this disorder, however it can also affect men. Back and hip fractures are very common and serious problems, especially in the elderly, and are often a consequence of fragile bones due to osteoporosis. Actually, there are 1.5 million fractures annually in the U.S. due to bone fragility. The diagnosis is made through a bone mineral density test.

Factors that increase the risk of osteoporosis include increasing age, excessive alcohol intake, smoking, a sedentary lifestyle, and a family history of osteoporosis. A diet low in calcium and vitamin D can also contribute to this problem. Patients with cancer and patients with kidney or gastrointestinal disorders can be at high risk.

The use of corticosteroids, for treatment of arthritis or chronic lung disease, dramatically increases the risk of osteoporosis. The use of thyroid medication, anticonvulsants, chemotherapy, lithium, or heparin can also increase the risk. The lack of the main female hormone, estrogen, and the main male hormone, testosterone, is also associated with osteoporosis. This can be a factor in patients with breast cancer or prostate cancer, as treatments for these conditions often result in reduced hormone levels and a markedly increased risk of osteoporosis.



Some tests can help determine the reason why a person has osteoporosis: a complete blood count, a chemistry panel, and a 24-hour urine collection to check for calcium excretion. Additional tests may include thyroid tests, blood hormone levels, vitamin D levels, tests for abnormal proteins that can indicate myeloma, and parathyroid hormone levels. A urine test, known as N-telopeptide, reflects the amount of bone degradation taking place at a given time.

Paramount to osteoporosis management is a program of physical exercise to improve muscle strength and stability; falls must be avoided in order to prevent fractures. Importantly, exercise can also stimulate new and healthier bone formation. A diet rich in calcium and vitamin D and, when necessary, calcium and vitamin D supplementation are important. It is generally recommended that a total of 1200 mg of calcium and 400 to 800 units of vitamin D be consumed daily.

Medications used for osteoporosis therapy include bisphosphonates, calcitonin, estrogen replacement, parathyroid hormone, and raloxifene. There are advantages and disadvantages, including potential side effects and risks to each of these interventions, and therefore patients should go over their options carefully with their physicians.

Bone Health Bone Mineral Density Test

The measurement of bone mineral density is noninvasive and is frequently used to determine the risk of fractures and to monitor the patient. The "T-score" and the "Z-score" indicate a person's bone mineral density, as measured by a test known as bone densitometry. The T-score compares the individual's bone mineral density to that of young adults who have achieved peak bone mass. The Z-score compares it to an age-matched population. A negative number indicates that the person's bone mineral density is below what is expected. Usually the lower back and hips are tested, and it is generally accepted that a T-score of –2.5 or less indicates osteoporosis and a very high risk of fractures. If the number is between –1 and –2.5, the patient is considered to have osteopenia, or thinning of the bones, short of osteoporosis; in this instance, the risk of fractures is intermediate.

Resources:

- National Resource Center (www.osteo.org)
- National Osteoporosis Foundation (www.nof.org)
- Surgeon General's Report on Bone Health and Osteoporosis (www.surgeongeneral.gov)

Leading The Way

Medical Articles and Abstracts

Kalust Ucar, MD
*University of California, Los Angeles

Simon Tchekmedyian, MD
*University of Maryland, Baltimore

Our team is constantly working to provide our patients with all the newest and best treatments, and we also contribute to the development of these new therapies through clinical trials. We frequently publish, together with colleagues in the U.S. and throughout the world, our research results in the scientific literature. Listed here are some of our most recent publications addressing bone complications associated with cancer:

André K.D. Liem, MD
*University of California, Irvine

Eleonor Quan, MD
*University of California, Irvine

David M. Burtzo, MD
*University of Southern California, Los Angeles

Walter Schreiber, MD
*University of California, Irvine

Hank Yang, Ph.D., MD
*University of California, Los Angeles

Lihong Wu, MD
*New York Medical College, Valhalla

Jennifer Sanbar, MD
*University of California, Los Angeles

Luke W. Chen, MD
*University of California, Irvine

Mark M. Ngo, MD
*University of Southern California, Los Angeles

Nubar Boghossian, MD
*Maimonides Hospital, New York

1. Randomized controlled trial of zoledronic acid to prevent bone loss in men receiving androgen deprivation therapy for nonmetastatic prostate cancer. JOURNAL OF UROLOGY 169(6):2008-12, June 2003.
2. Zoledronic acid versus placebo in the treatment of skeletal metastases in patients with lung cancer and other solid tumors: a phase III, double-blind, randomized, comparative trial. JOURNAL OF CLINICAL ONCOLOGY, 21(16):3150-57, August 15, 2003.
3. Zoledronic Acid Prostate Cancer Study Group: Long-term efficacy of zoledronic acid for the prevention of skeletal complications in patients with metastatic hormone-refractory prostate cancer. JOURNAL OF THE NATIONAL CANCER INSTITUTE, 96(11):879-82, June 2, 2004.
4. Long-term efficacy and safety of zoledronic acid in treatment of skeletal metastases in patients with non-small cell lung cancer and other solid tumors: A randomized, phase III, double-blind, placebo-controlled trial. CANCER, 100 (12) : 2613-21, June 15, 2004.
5. Zoledronic acid significantly reduces fractures in patients with hormone-refractory prostate cancer metastatic to bone, Abstract. Presented at Annual Meeting of the American Urological Association, Orlando, Florida, May 25-30, 2002.
6. Zoledronic acid is effective in the treatment of bone metastases from prostate cancer: Results of a large, phase III, double-blind, randomized trial. Podium Presentation at Canadian Urological Association, St. John's Newfoundland, June 23-25, 2002.
7. Zoledronic acid is effective in the treatment of bone metastases from prostate cancer: Results of a large, phase III, double-blind, randomized trial. Presented at the 26th Congress of the Societe Internationale d'Urologie meeting, Stockholm, Sweden, September 8-12, 2002
8. Zoledronic acid (Zol) significantly reduces skeletal-related events (SREs) in patients with bone metastases from solid tumors. PROCEEDINGS OF THE AMERICAN SOCIETY OF CLINICAL ONCOLOGY, Abstr. #1179, 2002.
9. Zoledronic acid significantly reduces fractures in patients with hormone-refractory prostate cancer metastatic to bone, Abstract. Presented at Annual Meeting of the American Urological Association, Orlando, Florida, May 25-30, 2002.
10. Long-term efficacy and safety of zoledronic acid in reducing skeletal complications in patients with bone metastases from solid tumors. Abstract #2532. PROCEEDINGS OF THE AMERICAN SOCIETY OF CLINICAL ONCOLOGY 22: page 630, 2003.
11. Continuing benefit of zoledronic acid for the prevention of skeletal complications in men with advanced prostate cancer. Abstract #4575. PROCEEDINGS OF THE AMERICAN SOCIETY OF CLINICAL ONCOLOGY 23: page 399, 2004
12. Clinical benefit of zoledronic acid in patients with lung cancer and other solid tumors: Analysis based on prior history of skeletal complications. Abstract #7226. PROCEEDINGS OF THE AMERICAN SOCIETY OF CLINICAL ONCOLOGY 23: page 669, 2004.
13. Clinical benefit of zoledronic acid for the prevention of skeletal complications in patients with prostate cancer based on history of skeletal complications. Abstract #4576. PROCEEDINGS OF THE AMERICAN SOCIETY OF CLINICAL ONCOLOGY 23: page 399, 2004.
14. Zoledronic acid effectively inhibits cancer treatment induced bone loss in postmenopausal women with early breast cancer receiving adjuvant letrozole: 12-month mineral density results of the Z-Fast trial. Abstract #533. PROCEEDINGS OF THE AMERICAN SOCIETY OF CLINICAL ONCOLOGY 23: page 12s, 2005.

Q & A

Q: *What medical conditions increase osteoporosis risk?*

A: Many; here are some: chronic lung conditions, insulin dependent diabetes, multiple sclerosis, inflammatory bowel disease, Gaucher's disease, anorexia nervosa, hemophilia, hemochromatosis, history of gastrectomy, hypogonadism, hyperparathyroidism, stroke, and chronic liver disease.

Q: *Can one tell if one has osteoporosis?*

A: Yes, if you have loss of height by one inch or more, fractures with minimal trauma, or curving of the back. It may be better to not wait until these complications happen; if you are at risk, it is advisable to get tested and discuss with your doctor ways to prevent the complications.

Q: *How treatable is cancer when it spreads to the bones?*

A: Depending on the type of cancer, it can be very treatable.

Our Physicians Practice at the Following Hospitals and Offices:

• Garfield Medical Center, Monterey Park • Glendale Adventist Medical Center, Glendale • Glendale Memorial Medical Center, Glendale • • Hoag Memorial Hospital Presbyterian, Newport Beach • Long Beach Memorial Medical Center, Long Beach • • Los Alamitos Medical Center, Los Alamitos • Orange Coast Memorial Medical Center, Fountain Valley • Pacific Hospital, Long Beach • • San Gabriel Valley Medical Center, San Gabriel • St. Mary Medical Center, Long Beach • Verdugo Hills Hospital, Glendale •

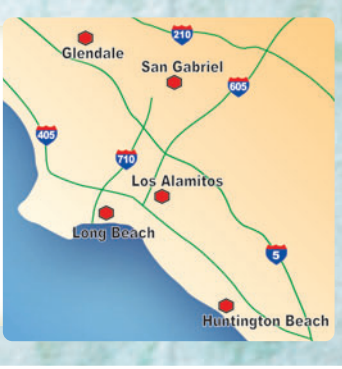
Glendale
222 W. Eulalia St., #100-B
Glendale, CA 91204
Phone (818) 637-7611
Fax (818) 637-5106

Huntington Beach
19582 Beach Blvd., #212
Huntington Beach, CA 92648
Phone (714) 252-9415
Fax (714) 963-8407

Long Beach
1043 Elm Ave., #104
Long Beach, CA 90813
Phone (562) 590-0345
Fax (562) 437-8139

Los Alamitos
3791 Katella Ave., #205
Los Alamitos, CA 90720
Phone (562) 430-5900
Fax (562) 799-8379

San Gabriel
207 S. Santa Anita St., #G-18
San Gabriel, CA 91776
Phone (626) 576-7321
Fax (626) 576-7384



*Hematology/Oncology Clinical Training

Pacific Shores Medical Group • www.pacshoresoncology.com • For more information please call Jann Buaiz at (562) 590-0345 ext. 273

Magazine Coordinator and Design, Jann Buaiz, M.S. • Editor, Karen Suri • Graphic Design, Gerry Pirritano, John Reyes • Photography, Michael Forbes • Creative Writer, David Plowman