

# Bone Health Toolkit

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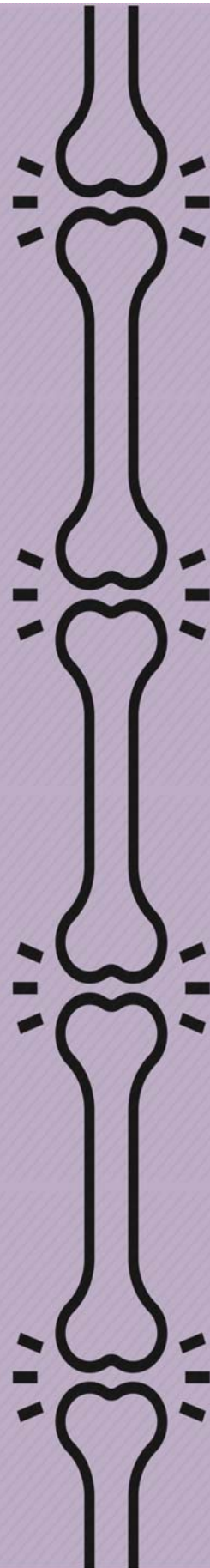
## OSTEOPOROSIS 101

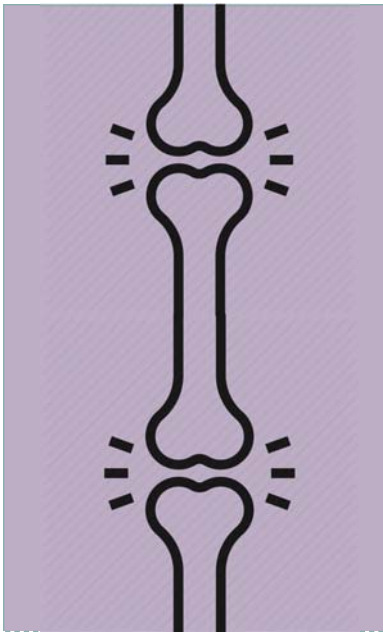
### **When we talk about bone health, what do we mean?**

Bone Health means the development and maintenance of strong bones which are resistant to fracture.

### **What is osteoporosis?**

Osteoporosis means “porous bone” and is characterized by weak bones with low bone mass. It is a “silent” disease, meaning that people who have osteoporosis often don’t know they have it. The first indication that someone has osteoporosis is often a fracture. Severe cases of osteoporosis can result in fractures in any bone simply by performing everyday activities. The later stages of osteoporosis have no cure.





## PATIENT STORIES

More than 25 years ago, as I was beginning menopause, my Internist suggested I take estrogen to prevent osteoporosis. Then, there was concern that estrogen contributed to breast cancer, which was a major disease in my family. I decided not to take the estrogen. I was diagnosed with osteoporosis about 10 years later. With just diet and exercise I was stable for many years. Eventually the osteoporosis became worse. I broke my arm and 2 years later, I shattered my patella. I learned two things throughout this process: one, many doctors were, and maybe still are, not well informed, and two, I became my own advocate. ~ Jo Ann M.

*“With just diet and exercise I was stable for many years. Eventually the osteoporosis became worse. I broke my arm and two years later I shattered my patella” ~ Jo Ann M.*

## FACTS

~Worldwide, 1 in 3 women and 1 in 5 men aged 50 and over will suffer from an osteoporotic fracture<sup>2</sup>.

~By 2050, the worldwide incidence of hip fracture in women is projected to increase by 240% and 310% in men, compared to rates in 1990<sup>2</sup>.

~10 million Americans have osteoporosis and another 44 million have low bone density<sup>1</sup>.

## STATE PROGRAM EXAMPLES

Several states have implemented successful programs targeting osteoporosis education and bone health promotion. Currently there are about 35 states<sup>5</sup> with osteoporosis related legislation in place.

**Massachusetts:** During the current legislative session (2018) there is a bill (H. 2169) to look at osteoporosis screening and treatment of fractures and how to reduce healthcare costs associated with this disease<sup>6</sup>.

**Arizona:** SB 1248 (2006) An Act Making An Appropriation To The Department of Health Services for Osteoporosis. In 2006 Arizona made grant appropriations for services related to osteoporosis, including an effort to foster collaboration among interested organizations to create a statewide network for conducting osteoporosis screenings, with a special focus on rural and underserved areas<sup>7</sup>.

**Kentucky:** SB 202 (2006) An Act Relating to Osteoporosis. In 2006 Kentucky established a multigenerational prevention and education program that includes a focus on educating health care professionals about national clinical guidelines<sup>5</sup>.



Above: Larry was part of a bone health education program at our annual healthcare summit.

## STATE PROGRAMS CONTINUED

**West Virginia:** Public Health code 10-5M-2 directs the department of public health to establish, promote, and maintain an osteoporosis prevention education program to raise awareness; educate consumers; and train health professionals, teachers and human service workers about the causes of osteoporosis, risk factors, prevention and early detection options, and treatment<sup>8</sup>.

**New Jersey:** Project Healthy Bones is an exercise and education program for people at risk or who have osteoporosis. Project Healthy Bones is a 24 week program for older women and men, and the program is offered at community sites throughout the state<sup>9</sup>.

**New York:** Through legislation the state created the NY State Osteoporosis Prevention Education Program (NYSOPEP) within the NY State Department of Health. This educational initiative makes it possible for all New Yorkers, including the public and healthcare providers, to learn about the prevention, diagnosis, and treatment of osteoporosis<sup>10</sup>.

**Maine:** In 2005 Maine created the Elderly Low Cost Drug Program which sought to provide low-cost prescription and nonprescription drugs, medications and medical supplies to disadvantaged, elderly and disabled individuals. Osteoporosis was a condition included on the list of ailment qualified for the program<sup>5</sup>.

## FACTS

### Risk Factors Include:<sup>3</sup>

- Age
- Gender
- Family History
- Previous Fracture
- Ethnicity
- Menopause

### Modifiable Risk Factors:<sup>3</sup>

- Alcohol
- Smoking
- Low Body Mass Index
- Poor Nutrition
- Vitamin D Deficiency
- Insufficient Exercise

~Osteoporosis-related bone breaks cost patients, their families and the healthcare system \$19 billion annually<sup>2</sup>.

~In 2014, the average per capita spending for Medicare beneficiaries with osteoporosis was estimated at 56% greater than the spending for beneficiaries without osteoporosis<sup>4</sup>.

## UNDERSTANDING YOUR BONE DENSITY TEST RESULTS

~The results of a DXA test are referred to as a “T-score”. The “T-score” represents how high or low your bone density is.

~If a patient’s “T-score” is +1 to –1, this indicates a normal bone mineral density. A “T-score” of –1 to –2.5 indicates osteopenia (pre osteoporosis). A “T-score” of –2.5 and lower indicates a high likelihood of osteoporosis and bone fractures or breaks<sup>15</sup>.

## BONE DENSITY FACTS

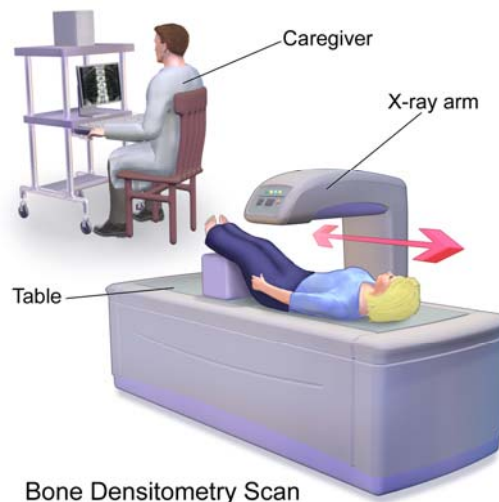
To measure one’s bone density requires scans of the hip and spine using a DXA (dual energy x-ray absorptiometry) machine<sup>12</sup>. Using the results from the DXA machine scans, it can be determined if you have normal bone density, low bone density (osteopenia) or osteoporosis. It is recommended by the National Osteoporosis Foundation that people get a bone density test if they are<sup>12</sup>:

- A woman age 65 or older
- A man age 70 or older
- You’ve broken a bone after age 50
- A woman of menopausal age with risk factors
- A postmenopausal woman under age 65 with risk factors
- A man age 50-69 with risk factors

Insurance Coverage:

**Private Insurance** will likely cover a DXA scan if a patient has the following risk factors; (1) early menopause (less than age 40), (2) adults with prior low impact fracture, (3) adults with a disease or condition associated with low bone mass or bone loss, (4) adults taking medication(s) associated with low bone mass or bone loss, (5) anyone being treated for low bone mass to monitor treatment, (6) anyone receiving radiation or chemotherapy for breast and prostate cancer, (7) anyone being considered for an osteoporosis drug<sup>13</sup>.

For those patients who have **Medicare Part B** (medical insurance) a bone density is covered every 24 months for people who meet the following criteria; (1) a woman whose doctor determines she is estrogen deficient and at risk for osteoporosis, (2) a person whose x-rays show possible osteoporosis, osteopenia, or vertebral fractures, (3) a person taking prednisone or steroid-type drugs or is planning to begin them, (4) a person who has been diagnosed with primary hyperparathyroidism, (5) a person who is being monitored to see if their osteoporosis drug therapy is working<sup>14</sup>.

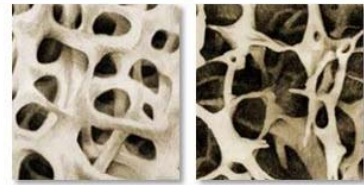


# BONE DENSITY FACTS: DXA TESTING IN THE U.S.



## United States

By the numbers: *DXA Testing*



<b>2008</b>	Peak year for DXA scanning	<b>Estimated Consequences</b>	
<b>70%</b>	Decline to \$42 reimbursement for DXA scans since 2006	<b>3,680,948</b>	Fewer woman to receive a DXA scan than projected since 2008
<b>26%</b>	Decline in the number of DXA physicians since 2008	<b>43,661</b>	Additional hip fractures due to reduced screening
<b>9.4%</b>	Decline in DXA testing of Medicare women since 2008	<b>9,518</b>	Additional hip fracture related deaths per year
<b>21.5%</b>	Decline in osteoporosis diagnosis since 2009	<b>\$1.8B</b>	Additional cost to Medicare to treat hip fractures alone

Osteoporosis is under-diagnosed in the Medicare population according to CDC NHANES survey. DXA scans are the gold standard for osteoporosis diagnosis. Yet in 2007, CMS began significantly reducing reimbursement for DXA scans. This reduced the number of physicians in private offices offering DXA. As a result, fewer women and men were scanned resulting in a decline in osteoporosis diagnosis. Without diagnosis, fewer patients received effective treatment for low bone mass, which is now being reflected in increased fracture risk. Hip fractures are particularly expensive for CMS and destructive for the patients, as many will never be independently mobile again and 20% of all hip fracture patients die within a year of the fracture.

*Direct Research LLC, Medicare PPS Master Files and Medicare 5% LDS SAF. Cost model and projections by Peter M. Steven, PhD.*

Fig. 1. Source: National Osteoporosis Foundation

### FACTS

~Medicare reimbursement for a DXA test has dropped from \$140 in 2007 to \$42 in 2018—a payment reduction of 70%<sup>16</sup>.

### FEDERAL LEGISLATION

Federal legislation has been introduced in the U.S. Senate by Senator Susan Collins of Maine to amend title XVIII (18) of the Social Security Act to improve access to, and utilization of, bone mass measurement benefits under part B of the Medicare program by establishing a minimum payment amount under such part for bone mass measurement.

This measure, along with a similar bill introduced in the U.S. House (H.R. 1898), would ensure that Medicare patients have access to DXA testing which this bill seeks to restore the funding for in the Medicare Part B program.

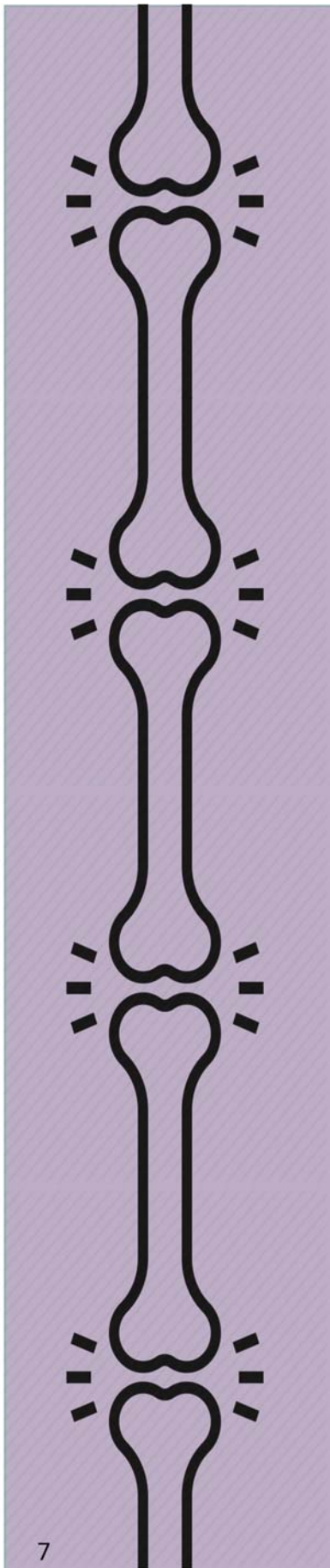
# OSTEOPOROSIS AND LOW BONE DENSITY IN THE UNITED STATES

The chart below represents the estimated number of women and men aged fifty and older in the United States who have or are at high risk for developing osteoporosis due to low bone density. Prevalence estimates are based on 2010 Census data and are presented for the year 2010 and 2030.



Visit [www.nof.org](http://www.nof.org) for additional information.

Fig. 2. Source: National Osteoporosis Foundation



## DO YOU KNOW YOUR STATE AMBASSADOR?

The National Osteoporosis Foundation works with a network of ambassadors from each state who are well-informed, and passionate about those suffering from osteoporosis. Find out who your states ambassador is below.

### **Alabama**

Kenneth Saag, MD  
Birmingham

### **Arkansas**

Steven W. Strode, MD  
Sherwood

### **Arizona**

Jennifer Almendarez, PA-C  
Flagstaff  
Dana Kurland, R.Ph.  
Tucson

### **California**

Douglas C. Bauer, MD  
San Francisco  
Susan Bukata, MD  
Santa Monica  
Carolyn Crandall, MD  
Los Angeles  
Sandi Elkin  
Rowland Heights  
Mary Oates, MD  
Santa Maria  
Frederick Singer, MD  
Santa Maria  
Sherri Betz PT, DPT, GCS, CEEAA  
Santa Cruz  
Shirin Hooshmand, Ph.D.  
San Diego  
Sharon Chow, NP  
Pomona  
Heather Hofflich, DO  
San Diego  
Jennifer Lenzo  
Thousand Oaks

### **Colorado**

Nancy Phares-Zook  
Boulder  
Jeff Donner, MD  
Johnstown

Paul Miller, MD  
Lakewood

### **Connecticut**

Donna Fiorentino  
West Hartford  
Karl Insogna, MD  
New Haven

### **District of Columbia**

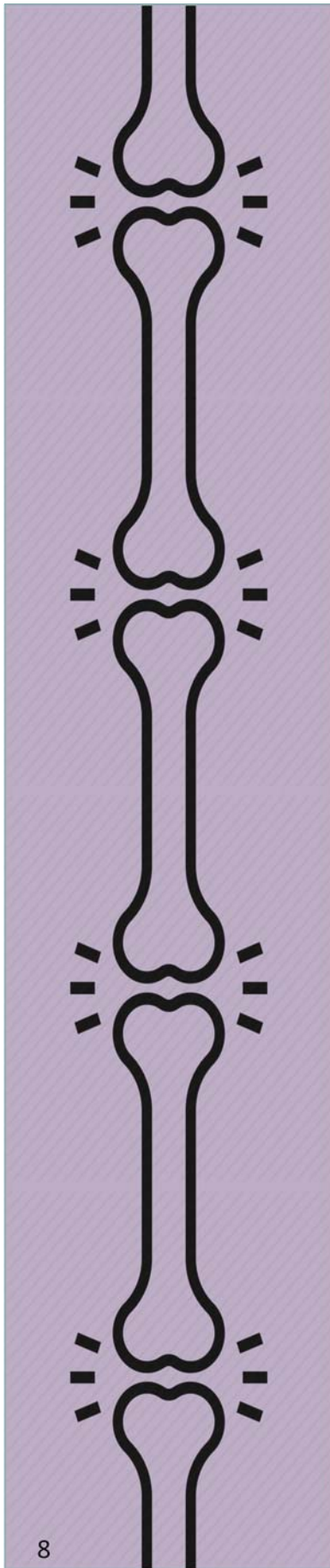
Elizabeth Thompson  
Shannon Finley  
Blair Childs  
Mike Cook, JD  
Andrea Singer, MD  
Kristi Lengyel

### **Delaware**

Angel Godek, BSN, RN, ONC  
Newark  
James M. Gill, MD, MPH  
Newark

### **Florida**

Seth Coren, MD  
Vero Beach  
Valerie Patmintra  
Tampa  
Nannine Dahlen, PT  
Ormond Beach  
Lesley Roberts  
Jacksonville  
Robert Understein, CPA  
Lakewood Ranch  
**Georgia**  
Mary Jordan, MD  
Winston  
Meghan McGee-Lawrence, Ph.D.  
Augusta  
Brandon Drew  
Smyrna



## STATE AMBASSADOR'S CONTINUED

### **Illinois**

Maria C Sosenko, MD

Joliet

Matt Bruns DNP, ONP-C

Quincy

Michael T. DiMuzio, Ph.D.

Bannockburn

Sarah Nadeem, MD, FACE

Maywood

Larry Jankowski, CBDT

Morton Grove

### **Indiana**

Natalie Eddy, DNP

Chesterton

Caitlin Vlaeminck, MSN, RN,

FNP-BC

Granger

Connie M. Weaver, PhD

West Lafayette

### **Iowa**

Sandra Scholten, FNP-BC

Des Moines

Susie Hathaway

Fairfield

Ritu Munjal, MD

Cedar Rapids

Dudley Phipps, PA-C, CCD

Des Moines

### **Louisiana**

Daryl Stanga, PA-C

New Orleans

Staci Boudreaux, PA

Lake Charles

### **Maryland**

Debbie Zeldow, MBA

Bethesda

Benjamin Diffenderfer, PA-C

Rosedale

Kelly Trippe

Bethesda

Catrell Harris

Landover

Michael Bolognese, MD

Bethesda

David L. Kim

Bethesda

### **Massachusetts**

Kerie Johnson, NP-BC

Hamilton

Ann C. Miller, MD

Cambridge

Meryl S. LeBoff, MD

Boston

### **Michigan**

Avery Jackson, MD

Grand Blanc

Barbara Levin

Detroit

### **Mississippi**

Steve Golding

Vicksburg

### **Missouri**

Betty M. Drees, MD, FACP, FACE

Kansas City

Naga Yalla, MD

Clayton

Christopher Hemmer, DNP, ANP

Saint Peters

Laura Schmidt, NP-C

New Melle

### **Nebraska**

Joan M. Lappe, PhD, RN, FAAN

Omaha

Susan Recker

Omaha

Robert Recker, MD

Omaha

Laura A. Armas, MD

Omaha

### **Nevada**

Shelley Berkley

Las Vegas

### **New Jersey**

Sally Fulman, PhD

Murray Hill

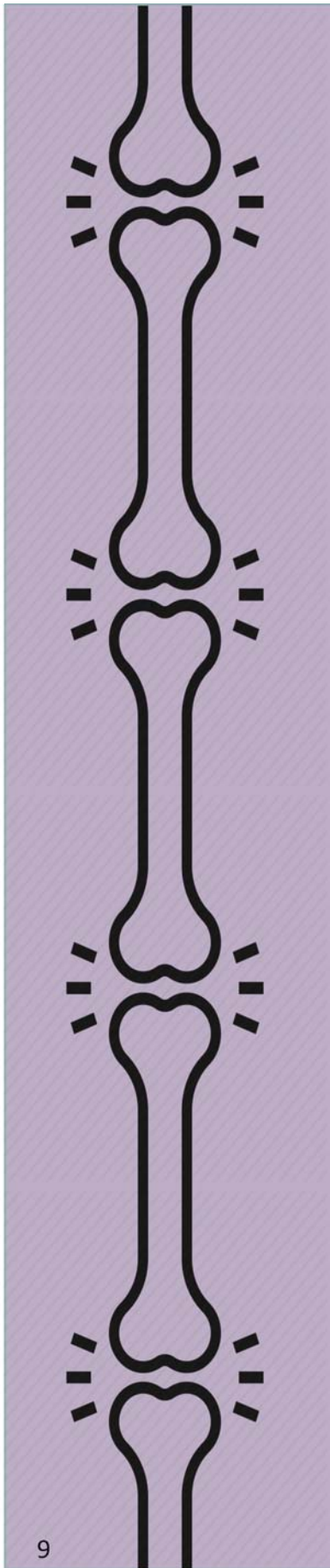
Margie Bissinger, MS, PT, CHC

Morristown

Mary L. Wagner, PharmD, MS

Piscataway Township





## STATE AMBASSADOR'S CONTINUED

### **New Jersey**

Julie Madsen  
Highland Park  
Lori Morell  
Piscataway  
Kathleen Morgan, Dr., M.H.  
New Brunswick  
Kavita Patel, MD  
Clifton  
Robert A. Kayal, MD, FAAOS  
Franklin Lakes  
Heidi Skolnik, MS, CDN, FACSM  
Englewood Cliffs  
Linda Brecher, DO  
Somers Point

### **New Mexico**

Marge Peterson  
Las Cruces  
E. Michael Lewiecki, MD, FACP,  
FACE  
Albuquerque

### **New York**

Barbara Hannah Grufferman  
New York  
Karen Goodell  
New York  
Margaret Nachtigall, M.D.  
New York  
Joan Pagano  
New York  
Gerard Karsenty, MD  
New York  
Gail Sheehy  
New York  
Bonnie Tandy Leblang  
New York  
Ethel S. Siris, MD  
New York  
Felicia Cosman, MD  
West Haverstraw  
Ray Morgan  
Monroe  
Linda Rose Ienneco  
New York

### **North Carolina**

Mollie Ashe Scott, Pharm.D.,  
BCACP, FASHP, CPP  
Asheville  
Amy Mitchell, MSN, FNP-C, CCD  
Winston-Salem  
Kameliya R. Hristova, PA-C  
Winston-Salem  
Adam Kaufman  
Biltmore Lake  
Thomas F. Koinis, MD  
Oxford  
Anne Lake, DNP, FNP-BC, ONPC  
Winston Salem  
Kenneth Lyles, MD  
Durham

### **North Dakota**

Amanda Brown, PA-C  
Fargo  
Christine Dockter  
Bismarck

### **Pennsylvania**

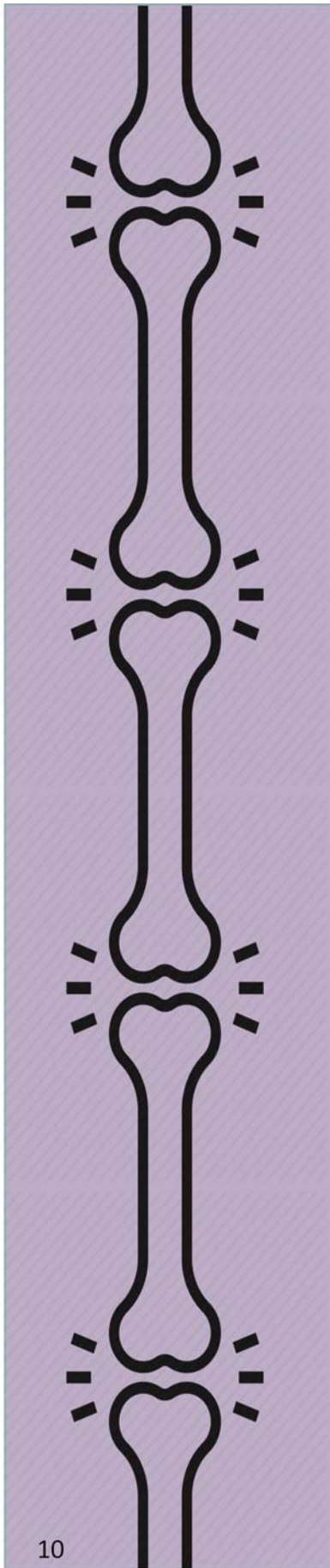
Dan T. D. Nguyen, MD  
Hershey  
Susan Greenspan, MD  
Pittsburgh  
Tom Olenginski, MD  
Danville  
John A. Sunyecz, MD.,  
F.A.C.O.G., C.C.D.  
Uniontown  
Christopher N. Sciamanna, M.D.  
Hershey

### **Tennessee**

Pam Miller, Ph.D.  
Jonesborough

### **Texas**

Colleen C. Barrett  
Dallas  
Maritza R. Padilla, BSN, RN,  
CRRN  
Edinburg  
James W. Simmons, DO  
San Antonio



## STATE AMBASSADOR'S CONTINUED

### **Texas**

Natasha Williams  
Arlington  
Sherrain Myles  
Arlington  
Nahid Rianon, MD, DrPH  
Houston  
James F. Kellam, MD  
Houston  
Laila S. Tabatabai, MD  
Houston  
Jane A. Brasch  
Dallas  
Crystal Rolleg, PA-C  
San Antonio  
Ugis Gruntmanis, MD  
Dallas  
Annette Gantz, NP  
San Antonio  
Adam Bruntz, PA-C  
Fort Worth  
C. Berdon Lawrence  
Houston  
Robert F. Gagel, MD  
Houston  
Brenda Ramirez, CBMT, LMRT  
Burleson  
Kirstin Webster, BS, MSN FNP-  
BC, FLS  
Burleson

### **Virginia**

Amy Porter  
Alexandria  
Claire Gill  
Lorton  
Teresa Dyer  
Alexandria  
Ruth Bennett  
Mount Vernon  
Susan Randall, MSN, FNP  
Springfield  
Judy Black  
Alexandria

### **Vermont**

Jennifer J. Kelly, DO  
South Burlington

### **Wisconsin**

Benjamin Phelan, PA  
Amherst

### **West Virginia**

Mary McKinley, RN, MSN, CCRN  
Wheeling

### **Wyoming**

Nola Peacock, PT, DSc  
Jackson

## FACTS

What can you do to protect your bones?<sup>3</sup>

- Get enough calcium and vitamin D
- Regular exercise
- Diet: eat more fruits and vegetables
- Avoid smoking and too much alcohol

By 2025, experts predict that osteoporosis will be responsible for 3 million fractures, resulting in \$25.3 billion in costs<sup>2</sup>.

The total cost of hospital stays due to hip replacements in 2013 was \$8.8 billion in the U.S. with \$5.3 billion of the cost being covered by Medicare<sup>4</sup>.

## PRESS RELEASE

With 10 million Americans suffering from osteoporosis and another 44 million with low bone mass, it is estimated that one in two women and up to one in four men over age 50 will break a bone due to osteoporosis in their lifetime. To help raise awareness for osteoporosis and bone health, [ORGANIZATION NAME], is joining advocacy organizations around the world to celebrate May as National Osteoporosis Awareness Month.

Osteoporosis is a condition in which the bones become brittle and fragile from loss of tissue, typically as a result of hormonal changes, or

deficiency of calcium or vitamin D. Regular exercise and good nutrition, including getting the recommended daily amounts of calcium and vitamin D, are essential for building and maintaining bone strength throughout the lifespan. Current osteoporosis treatments have been proven to reduce fractures by 30 to 50 percent.

“Quote” said, [NAME AND ORGANIZATION] “Quote”.

For more information and to learn more about osteoporosis, please visit [WEBSITE].

About [Name of Organization] [Boilerplate]

## DISPARITIES

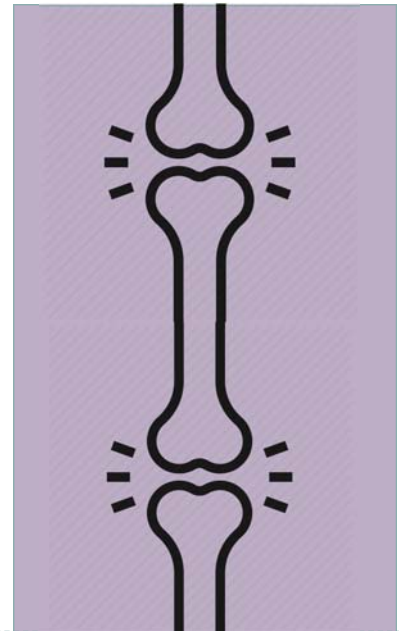
Ethnicity and race are factors that contribute to the incidences of osteoporosis. Understanding ethnic and racial influences on osteoporotic fractures is critical to decreasing the burden of such fractures on patients and society.

- In 2005, 12% of all fractures occurred in nonwhites. By 2025, this percentage will rise to 21%<sup>11</sup>.
- The lifetime risk of hip fracture at age 50 years in the United States is 15.8% and 6.0% in women and men, compared to 2.4% and 1.9% in Chinese women and men, and 8.5% and 3.8% in Hispanic women and men<sup>11</sup>.
- The prevalence of vertebral fractures in women older than 65 years is 70% for white women, 68% for Japanese women, 55% for Mexican women, and 50% in African American women<sup>11</sup>.
- Rates of hip fracture are about 50% lower in African American and Asian women than in white women<sup>11</sup>.

## PATIENT STORY

At age 50 I considered myself quite healthy, as I had been all my life. However, after thanking a hostess after a nice couples' gathering, she gave me a quick, firm hug, and I felt something pop. Eventually I went to my doctor who suggested x-ray imaging, which confirmed a fractured rib. Since it had happened so easily a DXA scan was then suggested to determine my overall bone density. My T score measured minus -4.77, nearly double the baseline score indicating osteoporosis. The age equivalency was listed as 99 years old!

I had joined a nearby gym to work on weight-bearing exercise as well as a program of physical therapy, which I continued for several years. At age 65, I had another scan resulting in a much healthier T-score of minus -2.6. ~Anne S.



*“My T-score measured minus -4.77, nearly double the baseline score indicating osteoporosis. The age equivalency was listed at 99 years old!”  
~Anne S.*

## SAMPLE SOCIAL MEDIA

May is National Osteoporosis Awareness Month. Broken bones are very painful, but for the aging population, weak bones can be deadly. Learn the facts: <https://www.nof.org/preventing-fractures/general-facts/>

#osteoporosis #bones  
#bonehealth  
[@OsteoporosisNOF](https://www.nof.org/)

It's National Osteoporosis Awareness Month: did you know 1 in 3 women and 1 in 5 men aged 50 and over will suffer from an osteoporotic fracture? #KnowtheFacts  
#bonehealth  
[@OsteoporosisNOF](https://www.nof.org/)

Are you over 50 and have broken a bone recently? You could have osteoporosis. Learn how to protect your bones: <https://www.nof.org/preventing-fractures/prevention/>  
[@OsteoporosisNOF](https://www.nof.org/)

By 2025 osteoporosis in America will cost us \$25.3 billion. Prevention can reduce that cost. #bonehealth  
#preventionmatters  
[@OsteoporosisNOF](https://www.nof.org/)

Do you know what you can do to protect your bones? Learn more: <https://www.nof.org/preventing-fractures/general-facts/> #bonehealth  
[@OsteoporosisNOF](https://www.nof.org/)

## FACTS

A woman's risk of breaking a hip due to osteoporosis is equal to her risk of breast, ovarian and uterine cancer combined<sup>2</sup>.

A man aged 50 or older is more likely to break a bone due to osteoporosis than he is to get prostate cancer<sup>2</sup>.

## PATIENT STORIES

I always lived a very active lifestyle, spending five years in the Navy and working in electrical engineering. At age 42, following a bad fall while roller blading with my son, I suffered two spinal fractures. Due to the nature of the fall, osteoporosis was not originally expected to have played a role in the fractures. Two years later, I experienced a third spinal fracture. However, this fracture was not due to an impact, which led my doctors to explore further, and they diagnosed me with osteoporosis. ~Ray M.

## WOMEN IN GOVERNMENT

Women In Government is a national, non-profit, non-partisan organization of women state legislators.



## SAMPLE RESOLUTION

WHEREAS, Osteoporosis is a disease characterized by low bone mass, structural deterioration of bone, and increased susceptibility to fractures, especially in older women; and

WHEREAS, Osteoporosis is a major public health threat for an estimated 54 million Americans; and

WHEREAS, One in every 2 women and one in every 4 men over the age of 50 will be affected by osteoporosis and low bone density; and

WHEREAS, Annual osteoporosis costs for America's healthcare system top \$ 19 billion and will double by 2050, as America's population ages; and

WHEREAS, Osteoporosis is responsible for 2 million bone fractures annually; and

WHEREAS, Osteoporosis is often thought of as a disease more prevalent amongst elders; in actuality, bone health is a concern for people of all ages; and

WHEREAS, Substantial risk of osteoporosis has been reported in persons of all ethnic backgrounds; and

WHEREAS, Osteoporosis is a preventable and treatable disease; and

WHEREAS, Building strong bones throughout childhood and adolescence can be the best defense against developing osteoporosis later in life; and

WHEREAS, Almost 90% of bone mass is acquired by age 18 in women and by age 20 in men; and

WHEREAS, Only one in 3 Americans receive enough calcium in their daily diet, a problem which is especially severe for children and adolescents in critical years of bone development; and

WHEREAS, Optimum bone health and prevention of osteoporosis can be maximized by a balanced diet rich in calcium and vitamin D, weight-bearing exercise, and a healthy lifestyle with no smoking or excessive alcohol intake; and

WHEREAS, Osteoporosis is often called the "silent disease" because bone loss can occur without symptoms and may not be detected until a fracture occurs; and

WHEREAS, A bone mineral density test can be performed to identify osteoporosis and determine the risk for fractures and the severity of the disease; and

WHEREAS, The month of May has been designated as National Osteoporosis Awareness Month; therefore, be it

RESOLVED, BY THE [FILL IN YOUR STATE INFO] GENERAL ASSEMBLY OF THE STATE OF [STATE], that we recognize and appreciate the ideals, goals, and activities of National Osteoporosis Awareness Month and urge the people of [STATE] to observe appropriate good health programs and activities with respect to preventing and controlling osteoporosis.

## CITATIONS

<sup>1</sup>“Fast Fact About Osteoporosis.” *National Osteoporosis Foundation*. 2016. <https://cdn.nof.org/wp-content/uploads/2016/04/Fast-Facts-About-Osteoporosis.pdf>. 21 March 2018.

<sup>2</sup>“Osteoporosis Fast Facts.” National Osteoporosis Foundation. 2015. <https://cdn.nof.org/wp-content/uploads/2015/12/Osteoporosis-Fast-Facts.pdf>. 21 March 2018.

<sup>3</sup>“Who’s At Risk.” *Osteoporosis & Musculoskeletal Disorders*. International Osteoporosis Foundation. <https://www.iofbonehealth.org/whos-risk>. 21 March 2018.

<sup>4</sup>“Osteoporosis & Hip Fractures.” *Investment in Research Saves Lives and Money*. Research America!: An Alliance for Discoveries in Health. [https://cdn.nof.org/wp-content/uploads/2017/02/OsteoporosisHip-Fracture\\_2017.pdf](https://cdn.nof.org/wp-content/uploads/2017/02/OsteoporosisHip-Fracture_2017.pdf). 23 March 2018.

<sup>5</sup>*National Action Plan for Bone Health: Recommendations from the Summit for National Action Plan for Bone Health*. National Coalition for Osteoporosis and Related Bone Diseases. <http://www.oif.org/site/DocServer/BoneHealthReport.pdf>. 2015.

<sup>6</sup>“An Act Relative to Osteoporosis Screening and Treatment to Prevent Fractures and Reduce Health Care Costs.” *Bill H.2169*. 190<sup>th</sup> General Court of the Commonwealth of Massachusetts. 2018. <https://malegislature.gov/Bills/190/H2169>. 21 March 2018.

<sup>7</sup>“An Act Concerning Making An Appropriation to the Department of Health Services for Osteoporosis.” *Senate Bill 1248*. State of Arizona. <https://www.azleg.gov/legtext/47leg/2r/bills/sb1248h.pdf>. 21 March 2018.

<sup>8</sup>“Osteoporosis Prevention Education Act.” *West Virginia Code*. West Virginia Legislature. <http://www.wvlegislature.gov/WVCODE/Code.cfm?chap=16&art=5M#05M>. 23 March 2018.

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