Is it OSTEOARTHRITIS or OSTEOPOROSIS??

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OA | OSTEOARTHRITIS ACTION ALLIANCE
Advancing Osteoarthritis Awareness, Resources and Education

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Our Goal Today

Osteoarthritis and osteoporosis
are under appreciated and under diagnosed chronic conditions that left unattended can lead to debilitating outcomes.

Start early with identification and prevention strategies.

Know the risks and make a plan for healthy aging.

Osteo...what?

	OSTEOARTHRITIS	OSTEOPOROSIS
Primary issue	**Joint** pain, stiffness	**Bone** density loss
Prevalence	32.5 million Americans	10 million Americans
Cases per year	?	2 million fractures
Number of people impacted	1 in 7 adults	1 in 2 women
Pain	Yes	Not unless a bone breaks
Percent affected	62% women	80% women
Often considered a normal process of aging	Yes	Yes
Can become debilitating	Yes	Yes

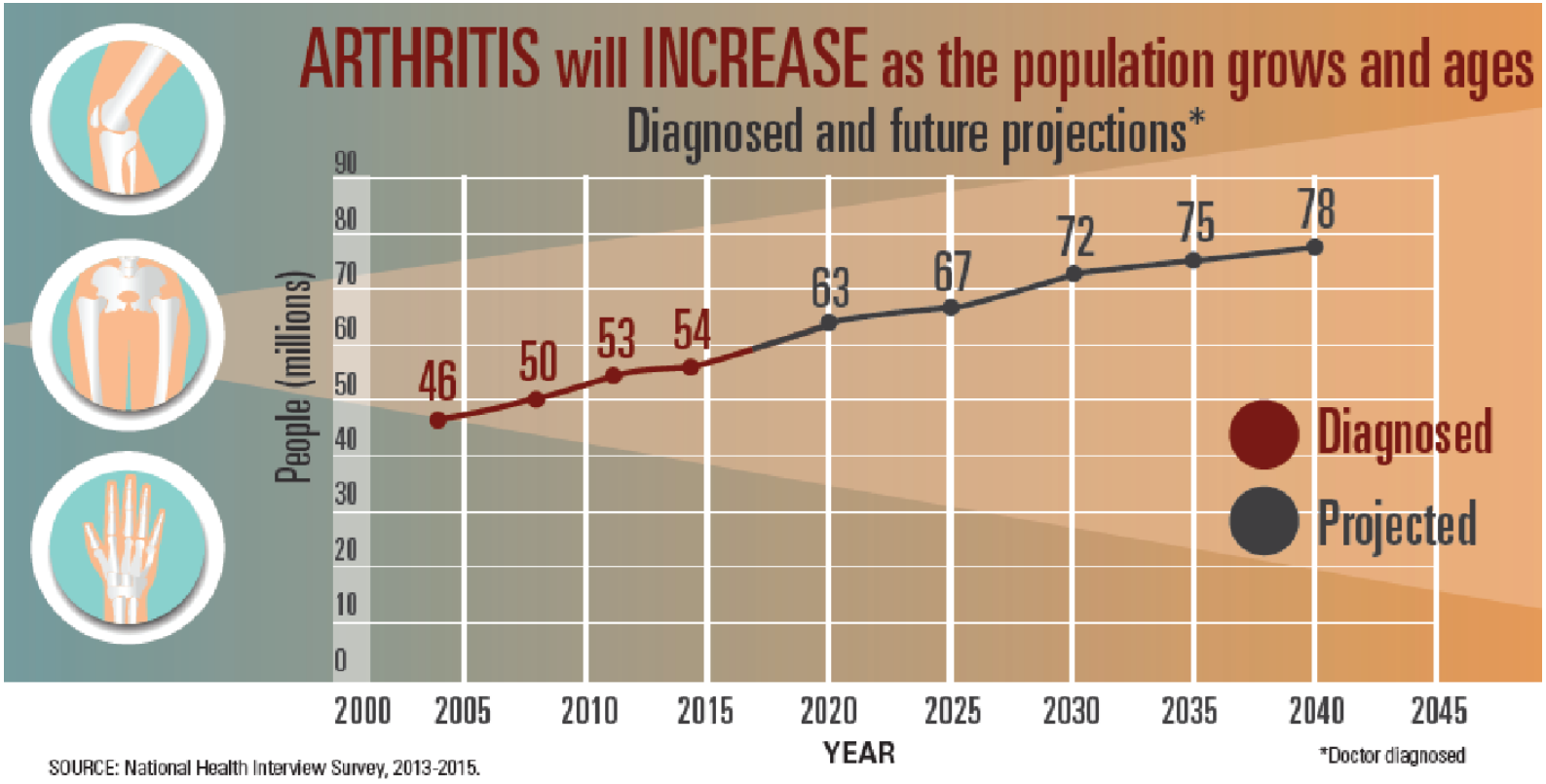
A Primer on Osteoarthritis

- *What is osteoarthritis?*
- *What are the risk factors for osteoarthritis?*
- *How is osteoarthritis diagnosed?*
- *How do you prevent more joint damage?*
- *What treatment options are available?*

Prevalence of Osteoarthritis

- 54 million U.S. adults have arthritis → **32.5M have OA**
- The majority of adults with OA, 16.7M, are age 18-64 years
- More women than men are affected by OA
- Minorities are disproportionately affected by OA
- 1 in 3 people with an ACL injury will develop osteoarthritis within 10 years
- In 2013, OA was the 3rd most rapidly rising disabling condition
  - increased by 75% from 1990-2013

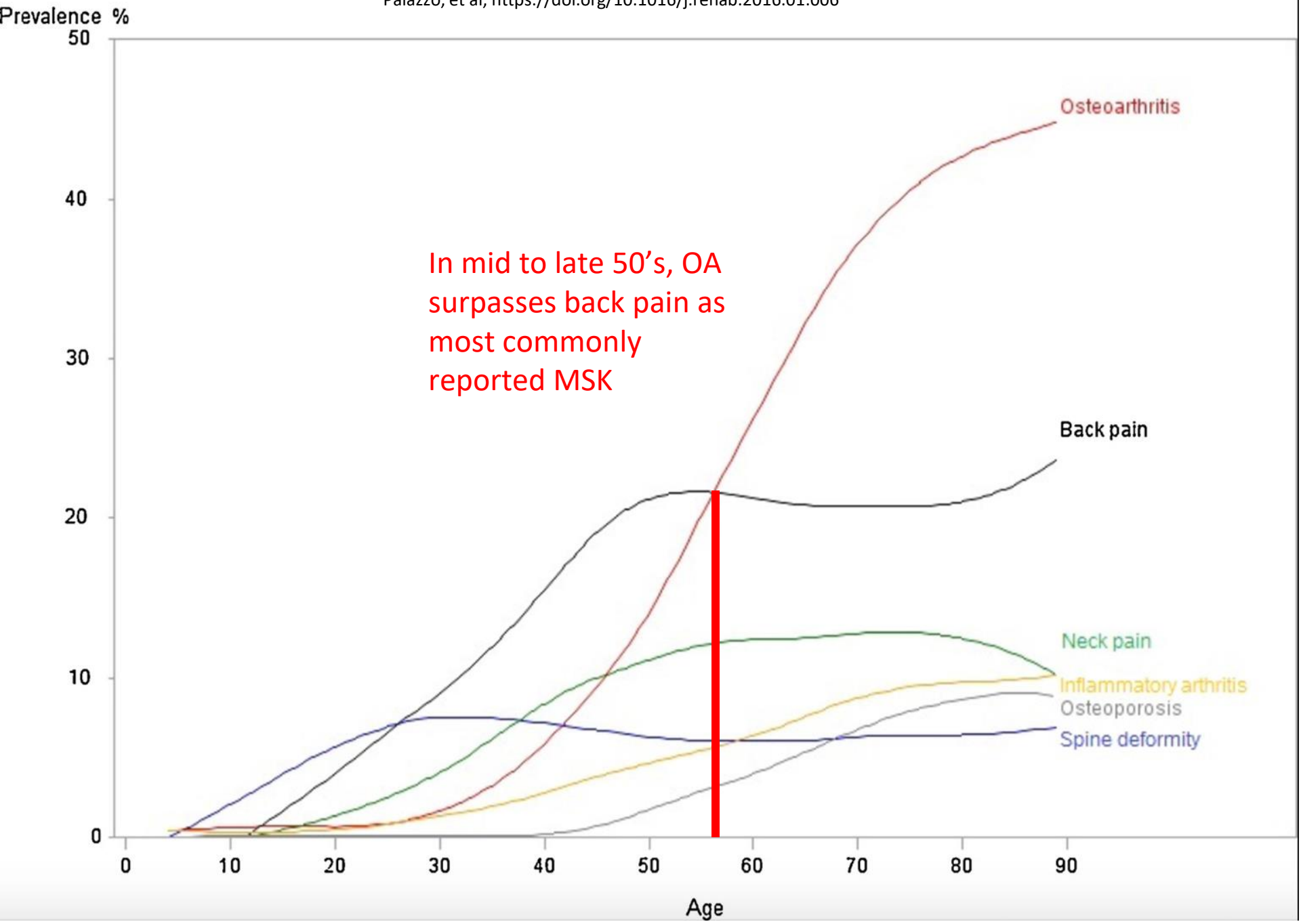
↑ Age of Population =
↑ Rates of Arthritis



CDC Vital Signs, March, 2017. www.cdc.gov/vitalsigns/arthritis

Prevalence of self-reported musculoskeletal diseases by age

Palazzo, et al, https://doi.org/10.1016/j.rehab.2016.01.006

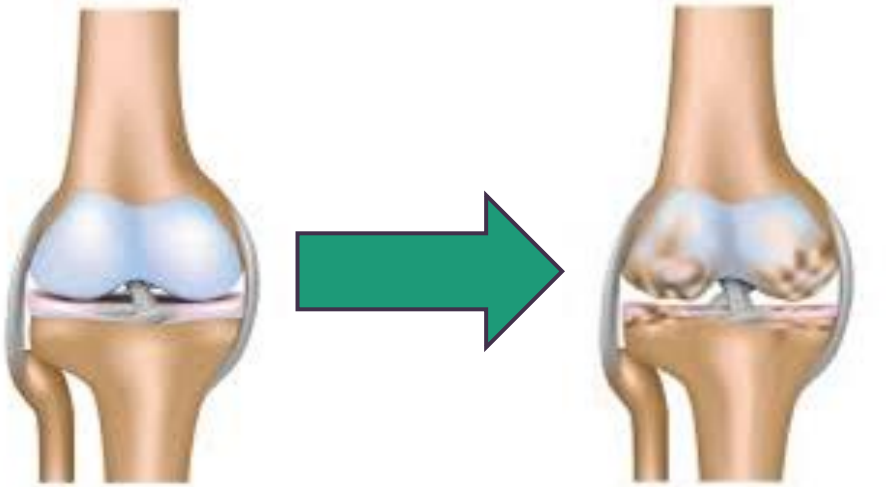


Cost of OA

- Among the most expensive conditions to treat when *joint replacement surgery* is required.
- OA was the *2nd most costly health condition* treated at US hospitals in 2013.
  - In that year, OA accounted for $16.5 billion, or 4.3%, of combined costs for all hospitalizations.
- OA was the most expensive condition for which privately insured patients were hospitalized - *over $6.2 billion in hospital costs*.

Osteoarthritis (OA)

- OA is the **most common** type of arthritis.
- OA is not simply caused by “wear and tear” of the joint but is rather a complex disorder characterized by molecular, anatomic, and physiologic changes.



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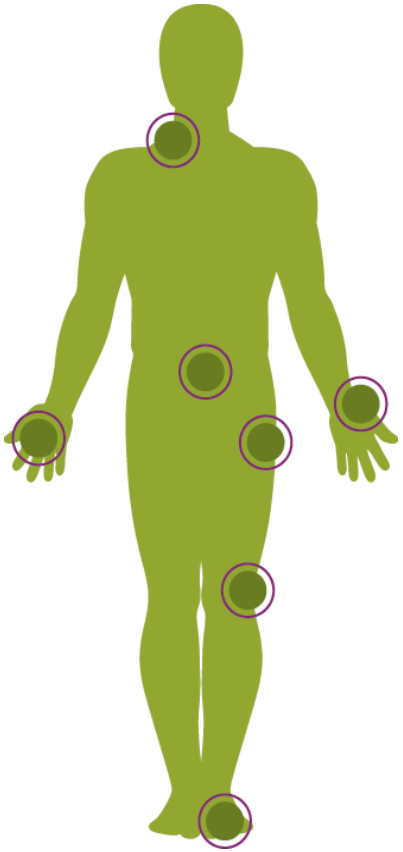
What causes OA?

Modifiable

- Excess weight
- Repetitive use from occupations, sports
- Joint position and strength
- Joint injury/trauma

Non-Modifiable

- Genetics
- Ethnicity
- Gender (female; after age 45)
- Aging



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OA Diagnosis

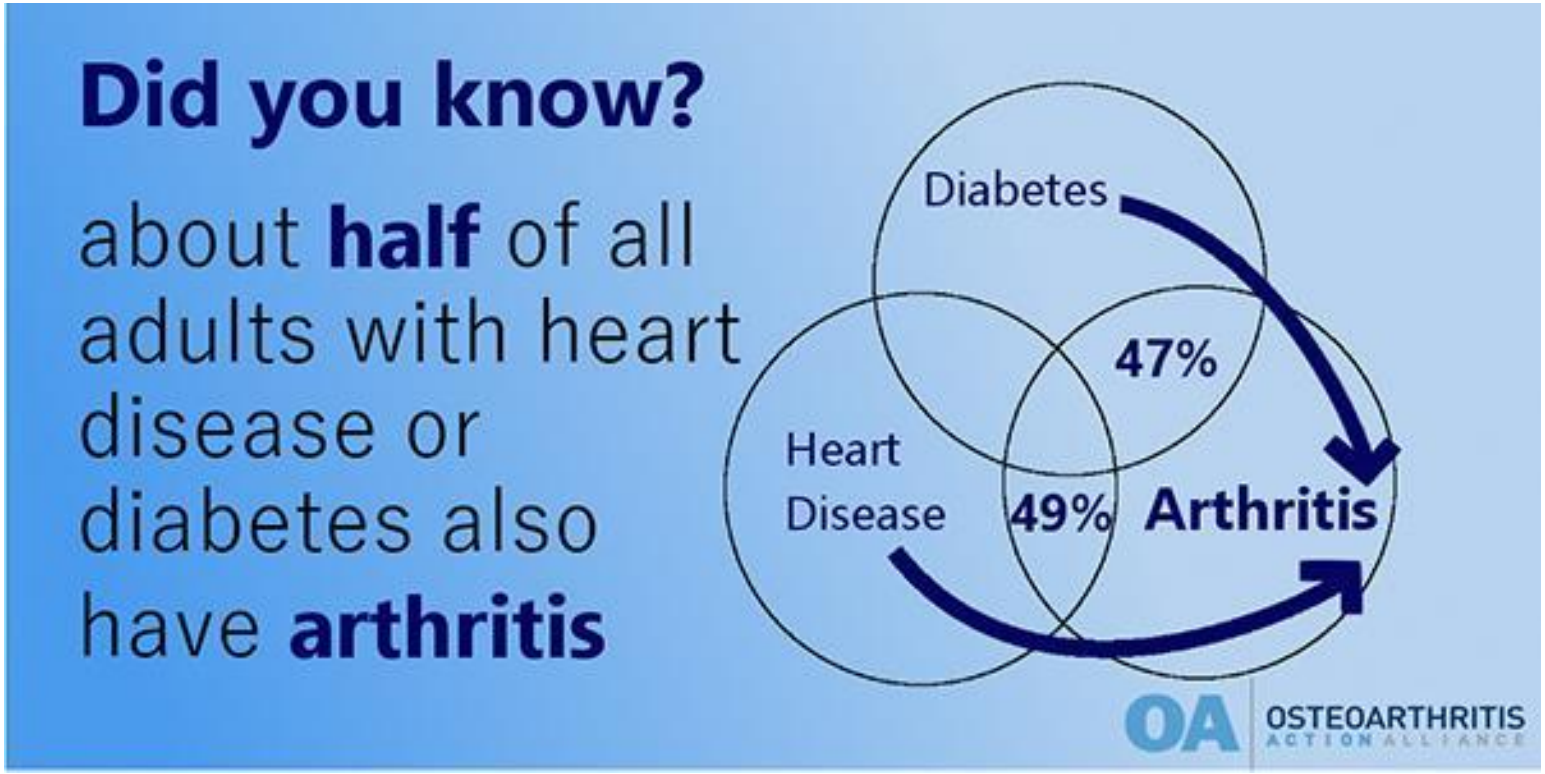
- Patient History
  - Symptoms, Changes in Function, Joint Injury, Comorbidities
- Physical Exam
  - Joint Appearance, Differential Diagnosis, Associated Exam Findings
- Imaging Analysis
  - X-Ray, MRI, CT, Ultrasound

OA Diagnosis: Patient History

- Symptom Assessment
- Changes in Activities of Daily Living and Function
- History of Joint Injury
- Comorbidities

Common Symptoms of OA

- Sore or stiff joints – particularly the hips, knees, and lower back – after inactivity or overuse.
- Limited range of motion or stiffness that goes away after movement
- Clicking or cracking sound when a joint bends
- Mild swelling around a joint
- Pain that is worse after activity or toward the end of the day



- Arthritis limits normal activities
  - e.g. holding a cup, lifting a grocery bag, stooping, bending, kneeling, walking 3 blocks.
- Increased pain, fear of pain, and lack of knowledge of safe forms of physical activity can make it harder for people with arthritis to be physically active.

CDC Vital Signs, March, 2017. www.cdc.gov/vitalsigns/arthritis

OA & Mental Health

DEPRESSION

One third of people with arthritis over the age of 45 suffer from depression or anxiety [1]

People with OA are at greater risk of depression because of increased disability and fatigue associated with their pain [2]

OA & Sleep

70%

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OA Diagnosis: Physical Exam

- Joint Appearance
  - Heberden's Nodes
- Differential Diagnosis
  - E.g., OA vs. RA vs. Gout
- Associated Exam Findings
  - Gait Assessment & Malalignment
  - Quadriceps Strength

OA Diagnosis: Imaging Analysis

- X-Ray – Gold Standard
- Advanced Imaging
  - MRI, CT, Ultrasound

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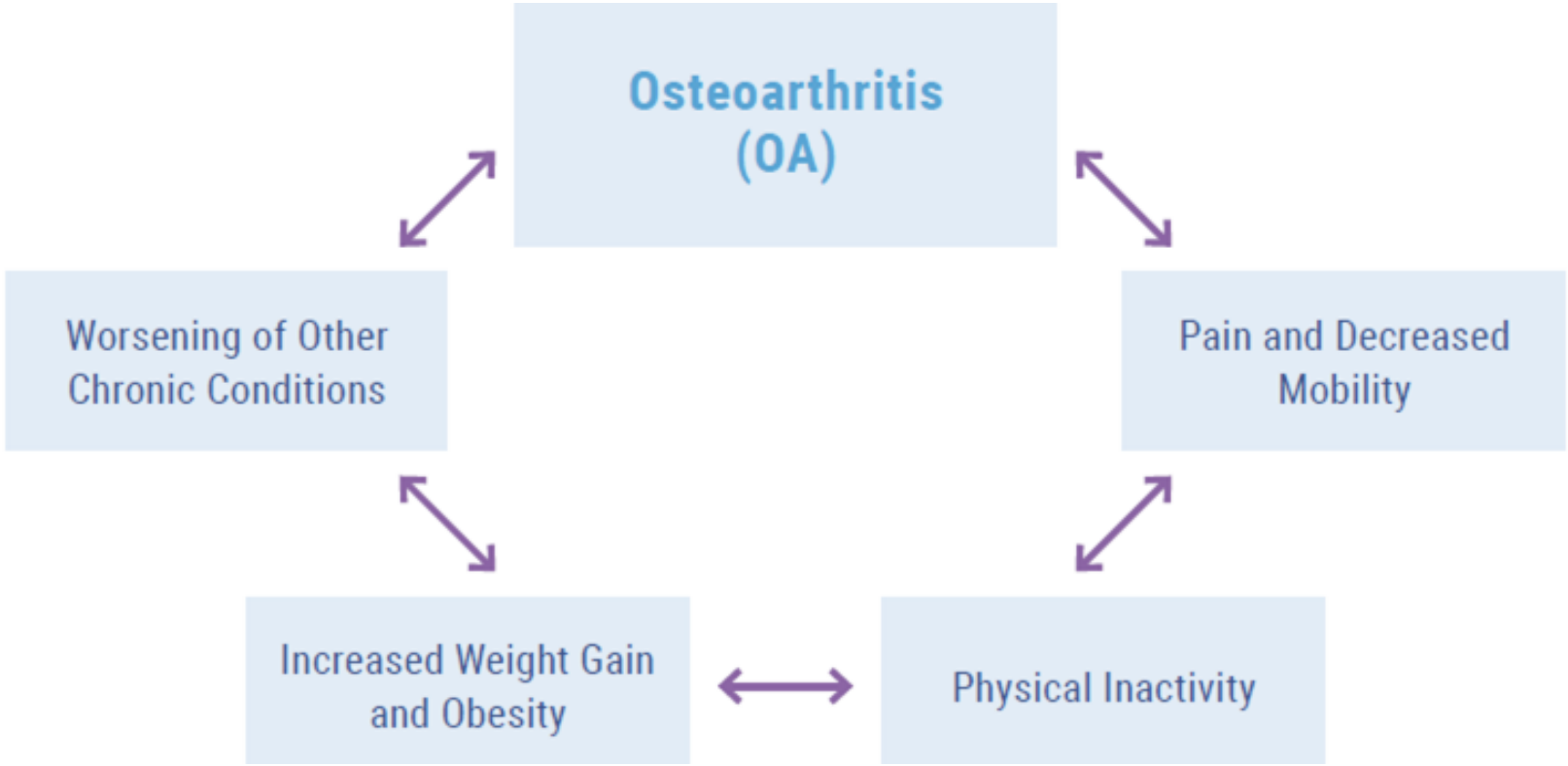
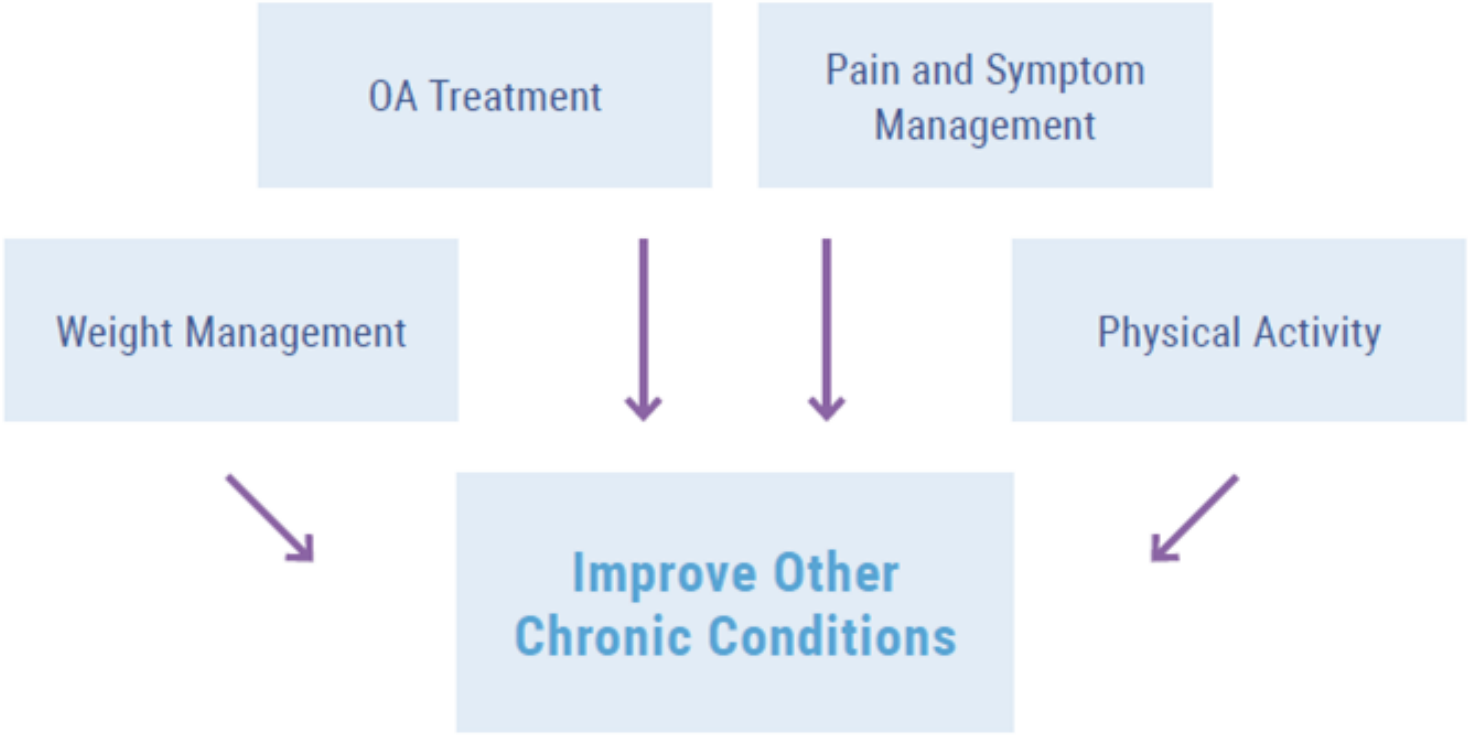
OA is challenging to manage

- Interventions can reduce pain, improve function, but:
  - No cure or remission
  - No strategy to reduce progression
  - No proven way to prevent need for joint replacement
  - Structural damage is irreversible and progressive
  - Available pharmacologic treatments are associated with significant adverse events
- One size fits all strategy may not be appropriate
- Comorbidities complicate management options

A Vicious Cycle



Early Detection of OA is Key



Management of OA

- Ultimate goal: ↓ pain to ↑ function
- A comprehensive plan for the management of OA may include:
  - ✔ Educational
  - ✔ Behavioral
  - ✔ Psychosocial
  - ✔ Physical interventions
  - ✔ Topical, oral, and intraarticular medications

Strong (+) recommendations

- **Exercise**, self-efficacy, self-management
- Knee/Hip: **weight loss**, tai chi, canes
- Thumb and knee bracing
- Oral NSAIDs (considering risks)
- Knee: topical NSAIDs
- Knee/Hip: IA corticosteroids

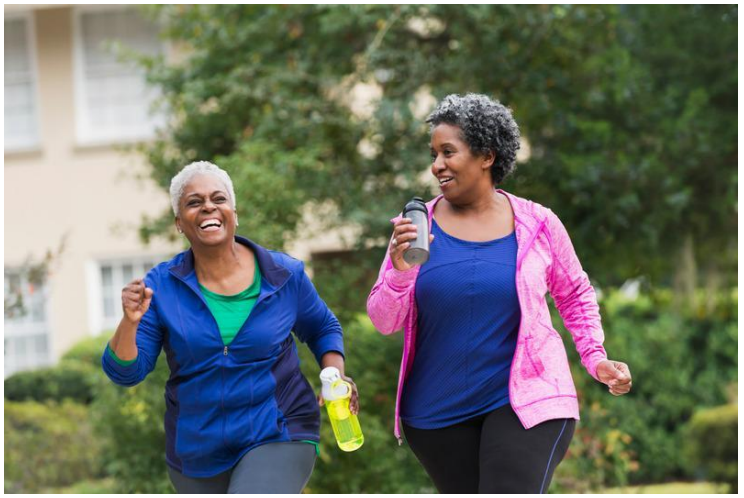
Kolasinski SL, et al. 2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee. *Arthritis Rheumatol.* 2020;72(2):220-233

Conditional (+) recommendations

- Thermal modalities, paraffin for hand OA
- Cognitive Behavioral Therapy
- Acupuncture
- Taping, balance, other braces, yoga
- Topical NSAIDs for hand OA
- Acetaminophen, tramadol, duloxetine

Kolasinski SL, et al. 2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee. *Arthritis Rheumatol.* 2020;72(2):220-233

Educational, behavioral, psychosocial & physical approaches



- Self-Management Strategies
  - Exercise
    - Increase physical activity
    - Use Physical Activity Guidelines as a benchmark
    - Reduce sedentary behavior
    - Evidence-based physical activity programs
  - Weight loss 10% ↓ weight can = 50% ↓ pain
  - Self-efficacy and education – Chronic disease self-management

U.S. Department of Health and Human Services. Physical Activity Guidelines for Americans, 2nd edition 2018; Dunlop, et al 2017; Kolanski, et al 2020

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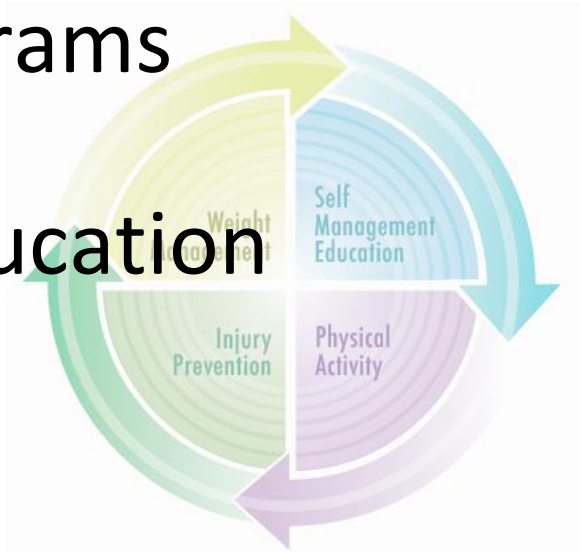
Evidence-Based Programs for OA

- Administration for Community Living's Title IIID of the Older Americans Act.
  - https://www.ncoa.org/resources/ebpchart/
- CDC Lifestyle Management Programs for Arthritis
  - https://www.cdc.gov/arthritis/interventions/physical-activity.html

*Evidence-based programs (EBPs) offer **proven ways to promote health and prevent disease** among older adults. – NCOA Website*

Evidence-Based Programs for OA

- Physical activity programs
- Self-Management Education
- Falls Prevention



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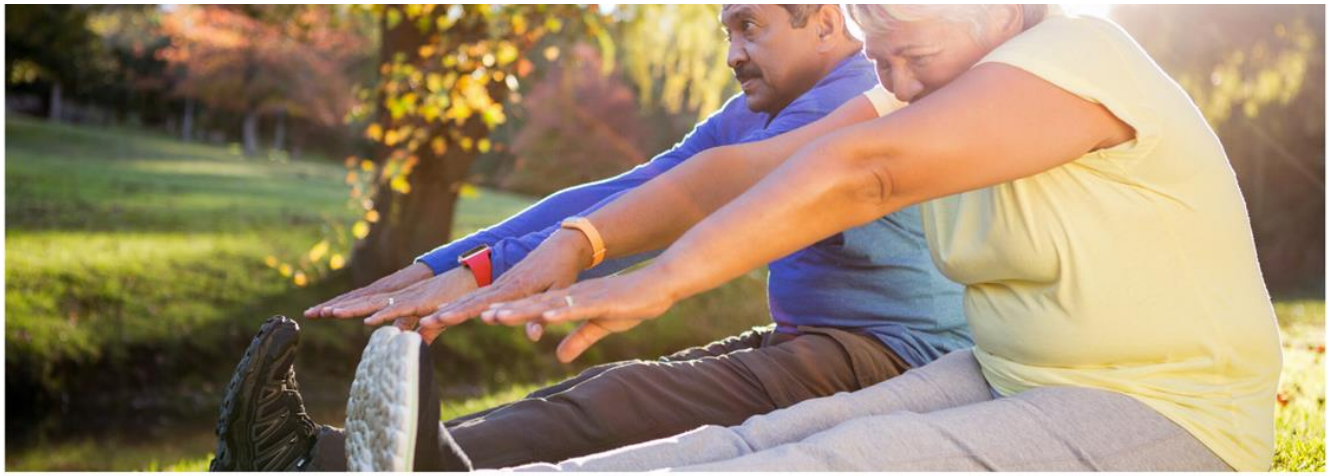
Walk with Arthritis - OAAA's WWE Self-Directed Portal



LESS PAIN. MORE GAIN.

WALK WITH EASE

The Arthritis Foundation's Walk With Ease program is proven to reduce the pain of arthritis and improve overall health. Our online portal provides patients with:

A *WALK WITH EASE* GUIDEBOOK WITH TOOLS TO DEVELOP A WALKING PLAN

&

WEEKLY ENGAGEMENT EMAILS TO KEEP YOU MOTIVATED AND MOVING FORWARD!

www.walkwitharthritis.org

oaaction@unc.edu

A Primer on Osteoporosis

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- *What is osteoporosis?*
- *What are the risk factors for fractures?*
- *How is osteoporosis diagnosed?*
- *How do you prevent bone loss and fractures?*
- *What treatment options are available?*

Like Muscle, Bone Is a Dynamic Living Tissue

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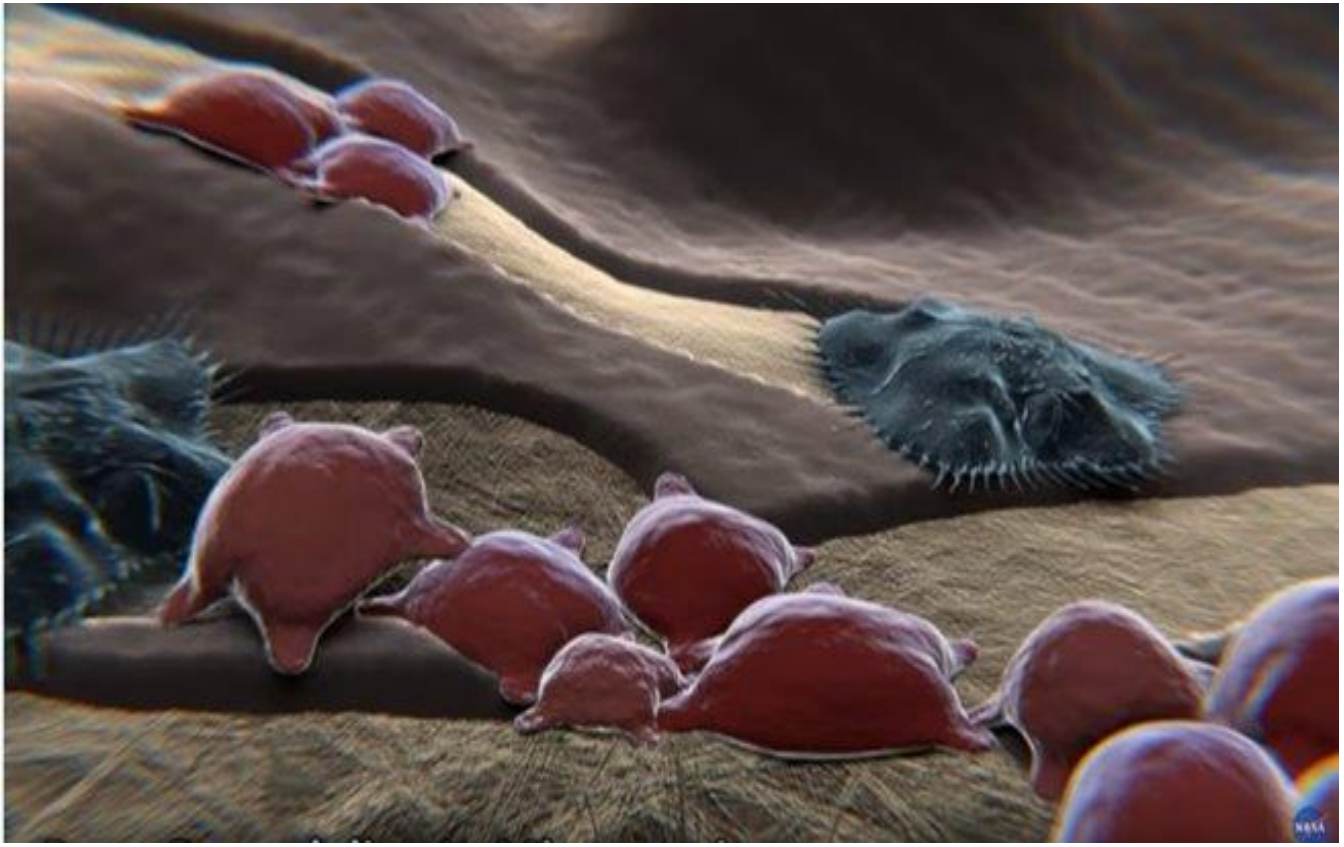

Bone remodeling means you have the opportunity to have new bones every 7-10 years!

Osteoclasts- remove old or damaged bone

Osteoblasts- build new bone

Osteoporosis Is a Chronic Condition

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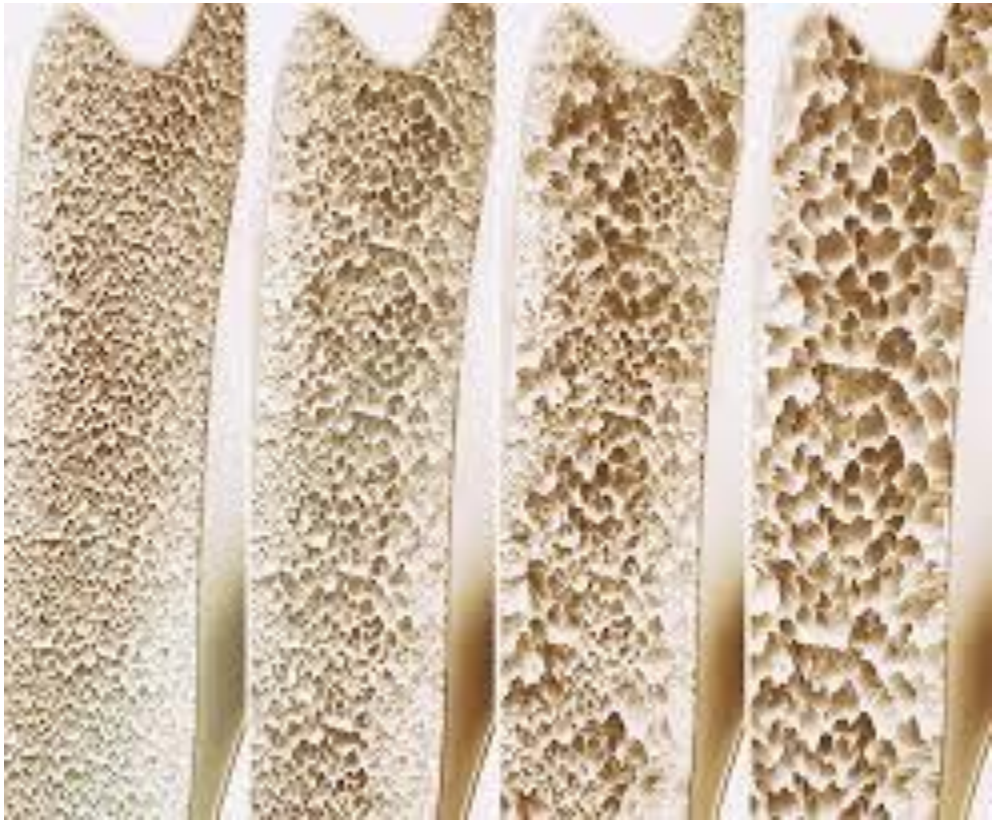
When the skeleton loses mineral density, the structure becomes thin and unable to take normal weight, leaving bones that break easily.



Osteoporosis Is Silent, But…

- Women can lose up to 25% of bone density in the 5 years around menopause
- Bone loss continues at 0.5% (½ a percent) per year after menopause.
- Muscle mass begins to decline at 1% per year after age 50.
- If you have lost more than 1½” of height, this may be a sign you have had a spinal fracture(s)
- A wrist fracture resulting from a trip and fall is a sign of fragile bones

Fractures Are a Serious Issue

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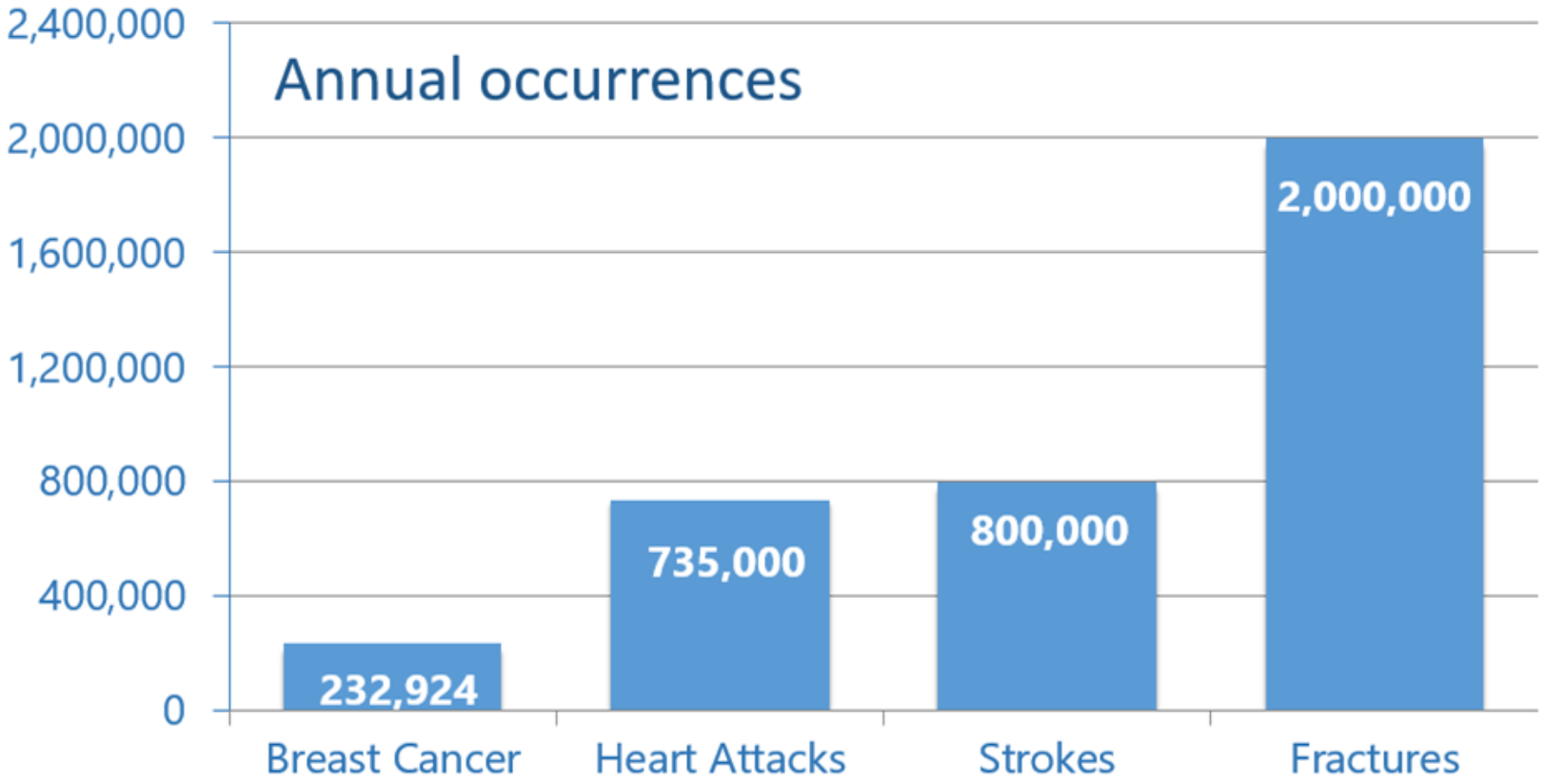
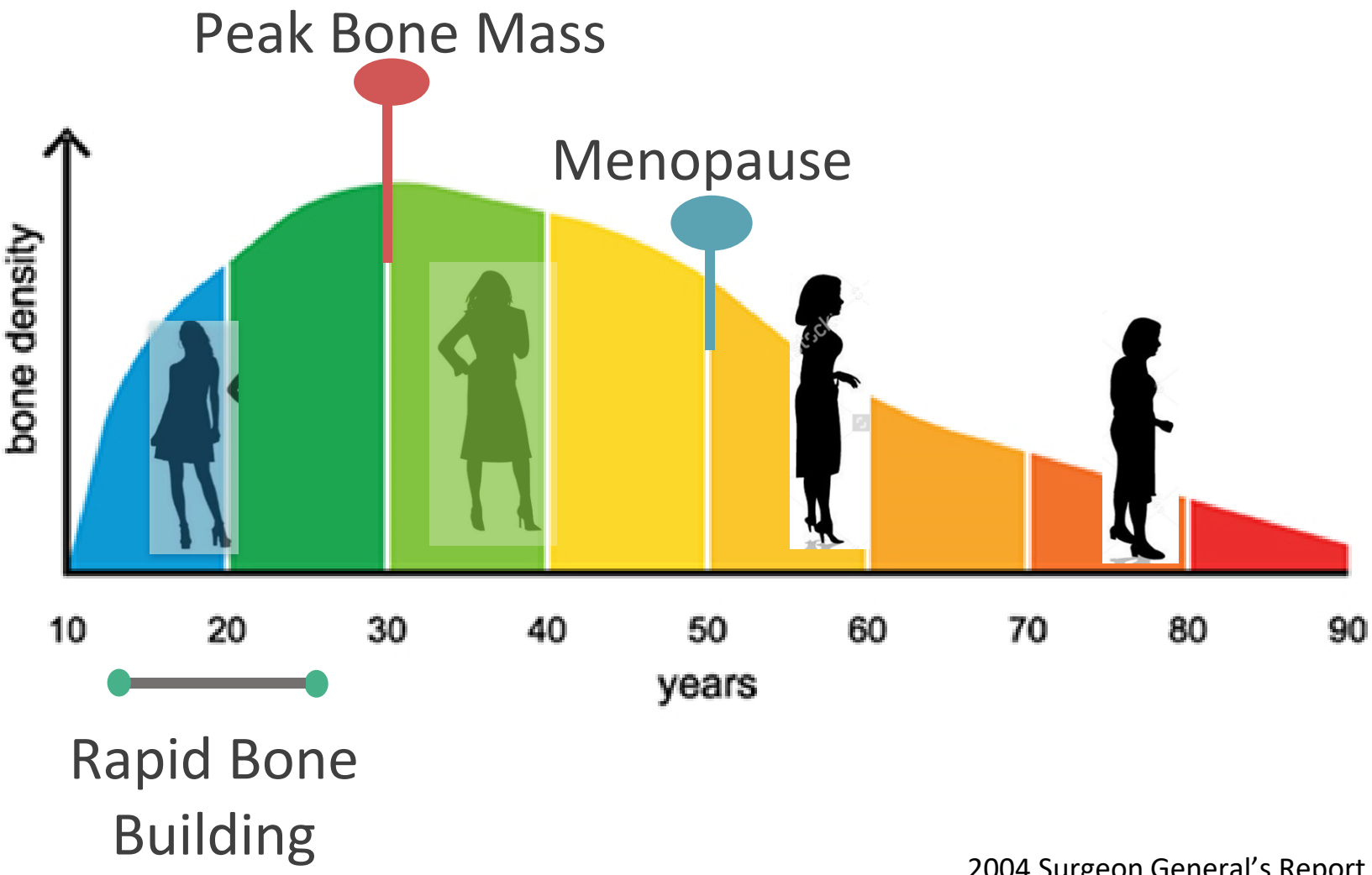


Centers for Disease Control & Prevention 2016
Centers for Disease Control & Prevention, 2015
Centers for Disease Control & Prevention, 2015
National Osteoporosis Foundation, 2015

How the Skeleton Changes



2004 Surgeon General's Report

Factors That Affect Fracture Risk

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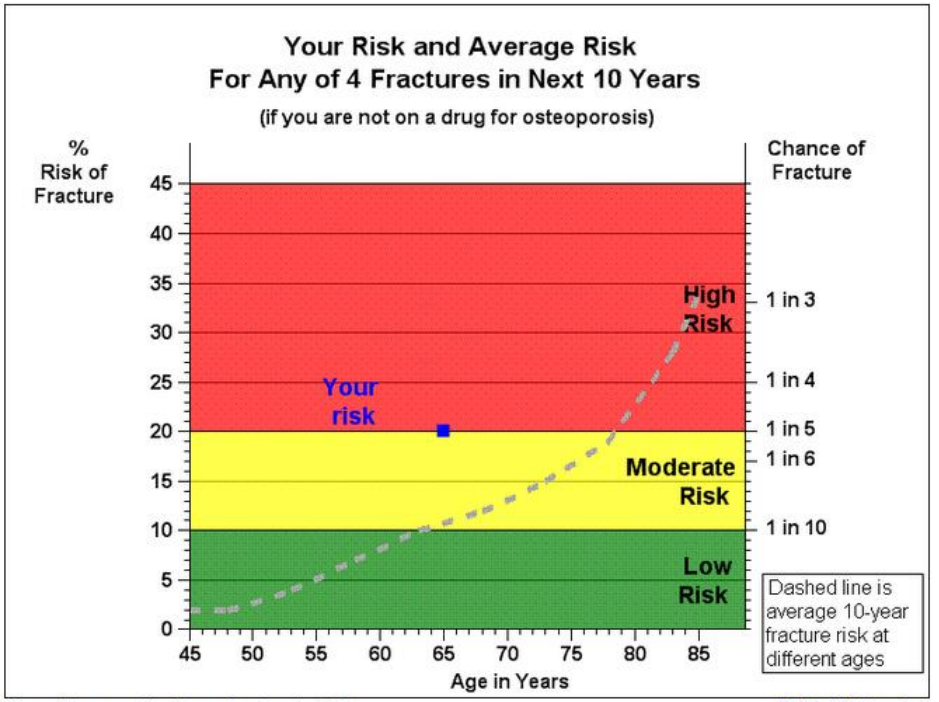
- Age, gender, height and weight, race
- Smoking, excess alcohol
- Diabetes
- Rheumatoid arthritis
- Inflammatory diseases needing oral steroids
- High doses of thyroid medicines
- Cancer and its treatment
- Long standing malnutrition or malabsorption, i.e., Celiac or Crohn's
- Serious untreated hormone deficiencies
- Chronic liver disease
- Organ transplant

10-Year Fracture Risk Calculator
www.americanbonehealth.org



Your 10-year risk of any fracture is **20%**.
Your 10-year risk of hip fracture is **3%**.

Printable Version
Questions for your Doctor (PDF)

If Your Risk is Elevated

Get a Bone Mineral Density Test

(also known as DXA)

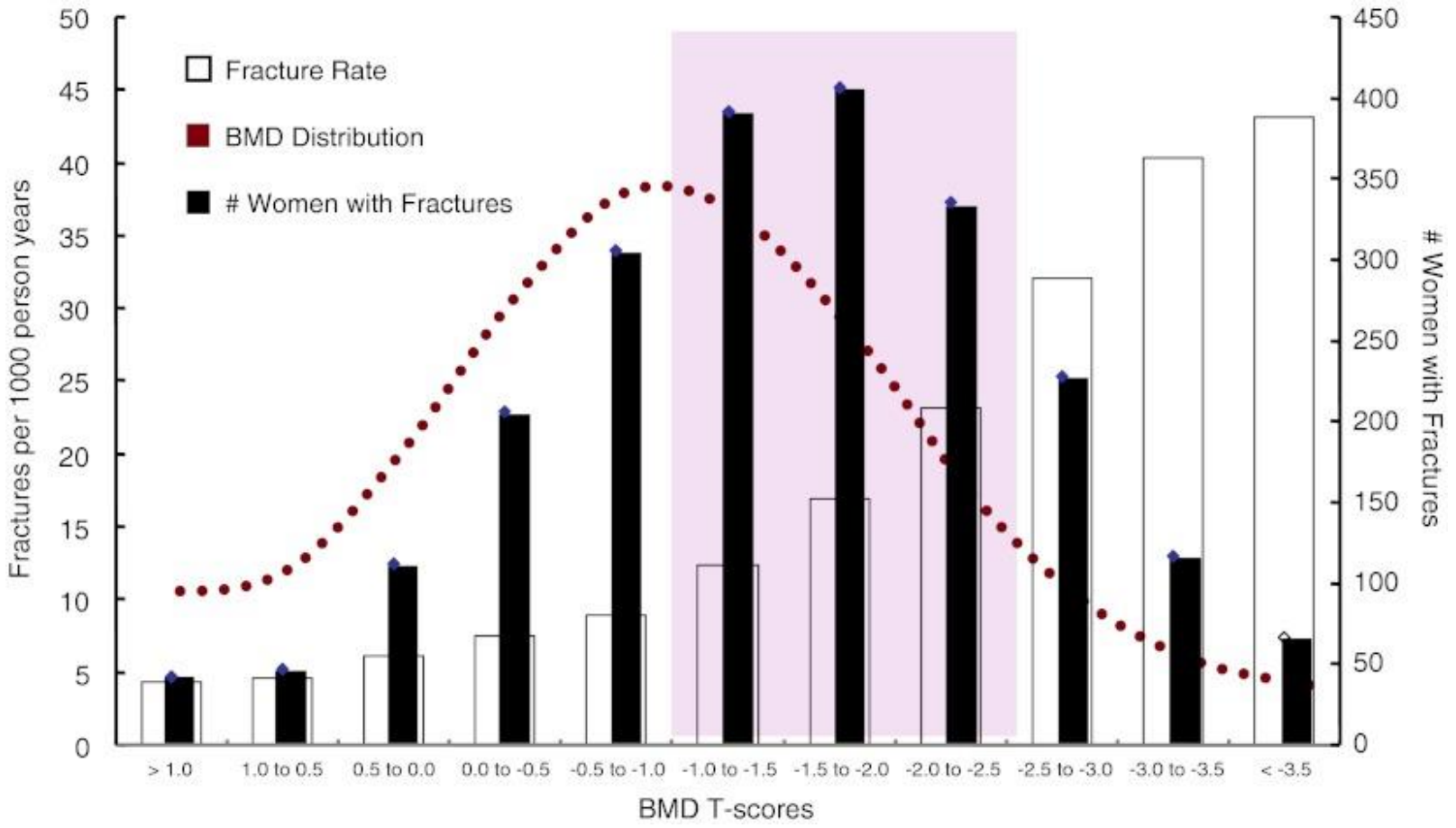
Covered benefit for

- ✔ Women age 65+
- ✔ Men age 70+
- ✔ Anyone younger with a risk factor

This simple and painless test takes about 15 minutes.

Fractures Happen at all BMDs

Women with osteopenia fractured at a greater rate than those with osteoporosis



Preventing Bone Loss and Fractures

- Bone healthy nutrition
  - *Calcium*
  - *Vitamin D*
  - *Magnesium*
  - *Protein*
- Physical activity (loading)
- Safe movement
- Fall prevention

Calcium in Foods

RDA
1,000–1,200 mg or 3–4 servings of high calcium food

High (200+mg)	Moderate (50–200 mg)	Low (<50 mg)
Dairy foods	Almonds	Nuts and seeds
Sardines	Beans	Broccoli
Fortified cereals	Canned salmon	Cabbage
Fortified soy or rice milk	Green vegetables(some)	Fruits
Fortified tofu	Breads	

ndb.nal.usda.gov/ndb/search/list

Note: Fruits, vegetables, nuts and seeds have smaller amounts of calcium and the calcium in fruits and vegetables attaches to fiber and passes through the body.

Other Bone Healthy Nutrients

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In addition to Calcium

- Vitamin D
- Magnesium
- Protein

Bone Health Bandits- In Excess

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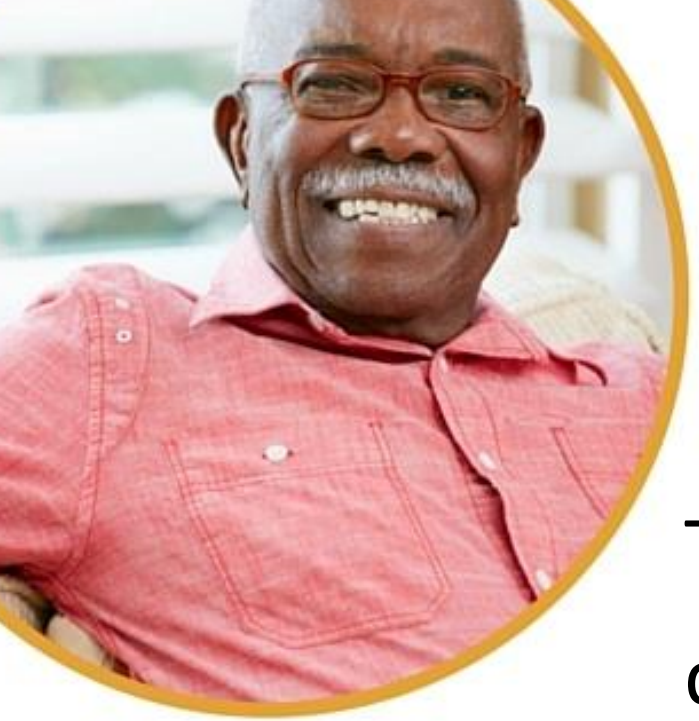
1. Salt
2. Alcohol
3. Caffeine

How much is too much a day?

>1 teaspoon

3+ drinks

>6 cups



Bones Like a Load

To build bone density, you must do activities that “surprise” and add weight to the bone.

Activities that strengthen muscles, strengthens bone.

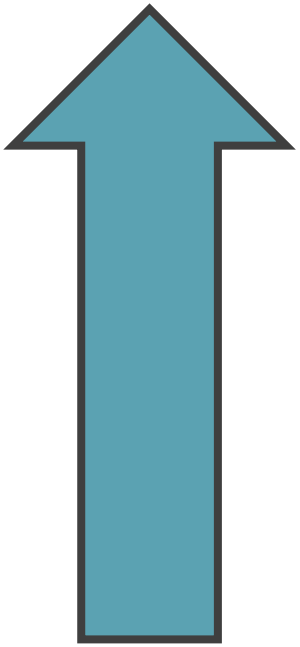
Loads Vary by Activity

Levels of Load by Body Weight

4+  Jump, strength train

3  Run, jog

1-2  Brisk walk



Increasing effect on bone density

Swim, cycle  <0

The Effects of Spine Fractures

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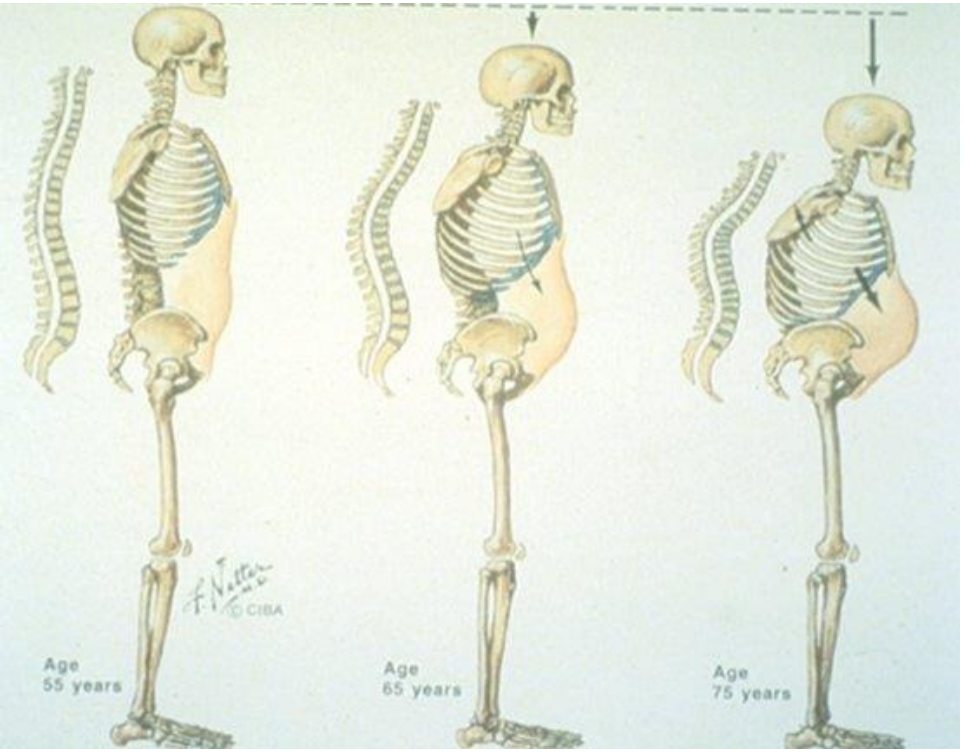

Proper Alignment for Everyday Activities

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General Lifting

Stand with feet a little wider than hips, knees in line with middle toes. Squat to lift. Hinge at hips, chest lifted, shoulders back and down. Bring object as close to you as possible.

Brushing Teeth

Keep spine long and straight, chest lifted and knees bent. Hinge at the hips instead of rounding the back to bend towards the sink.

Driving

When backing up, reach right hand behind passenger headrest to brace yourself and keep chest lifted as you rotate.

Exercising

Considerations for exercise. Avoid rounding and twisting your spine.

Core Strengthening

Avoid all forms of crunches. Do core control by pulling in abdominals as you bring one leg to 90° while pressing lower back down. Alternate touching toes to the floor.

Spinal Twisting

Avoid extreme seated or supine spinal twists. Gently rotate the pelvis and legs keeping shoulder blades on the floor.

Spinal Stretching

Avoid yoga Forward Fold and Pilates Spine Stretch. Do seated chest stretch supported by arms.

For more tips and exercises, order the complete prevention booklet by visiting americanbonehealth.org!

Avoid loaded forward flexion and twisting

Improve Strength and Balance

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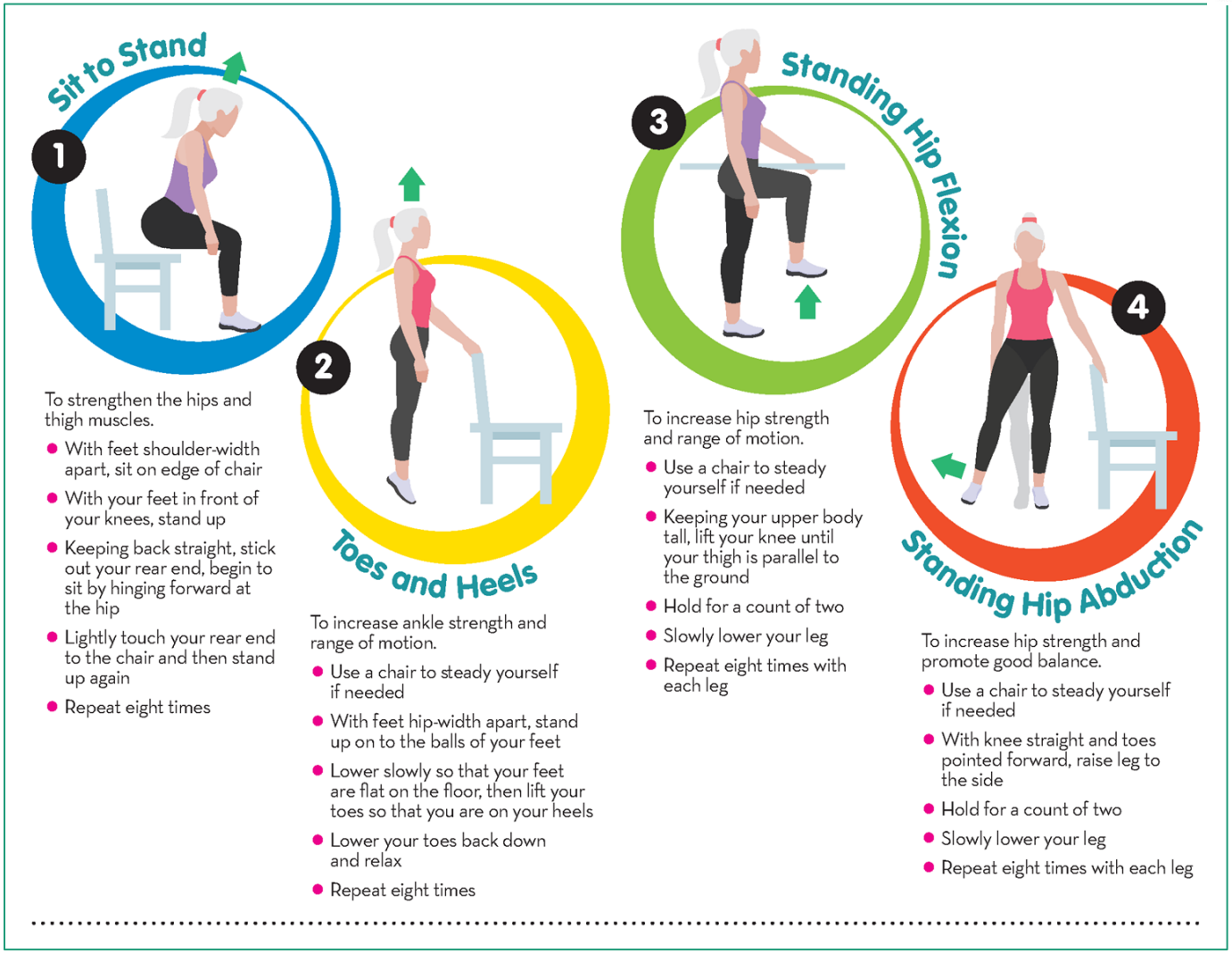

https://americanbonehealth.org/downloadable-materials

Osteoporosis Medicines

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There are many treatment options available.

Treatments go through rigorous testing and have been approved by the FDA.

There are very few side effects and treatments are effective at reducing fracture risk.

Important Things to Remember

1. Get bone healthy nutrition daily. Food is best, supplement if needed.
2. Do weight-bearing and balance exercises everyday.
3. Know your risk for fractures, get tested and diagnosed.

Free educational resources for…

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www.AmericanBoneHealth.org

- Fracture Risk Calculator
- Patient Journey
- Hotline
- Events
- Getting Involved

OA OSTEOARTHRITIS ACTION ALLIANCE

https://oaaction.unc.edu/

- Living with OA
- Prevention
- Evidence-based interventions
- Healthcare providers (PCPs, Pharmacists)

Check back in early 2021 for our revamped Resource Library!

Q&A

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