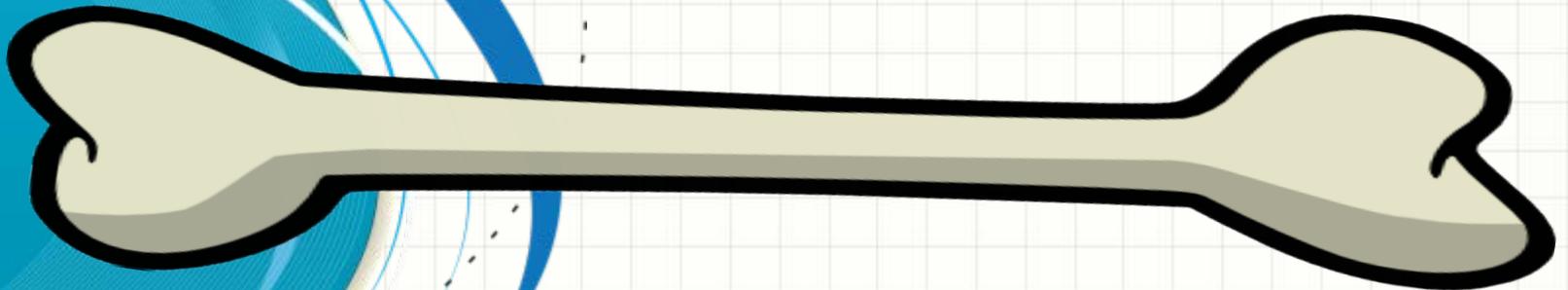




BETTER YOUR BONES

UPDATE ON LATEST BONE HEALTH RESEARCH

Taylor C. Wallace, PhD, CFS, FACN
Academy of Nutrition and Dietetics
Food Nutrition Conference & Expo™
October 5th, 2015



Disclosures

- Employment
 - George Mason University
 - Dr. Taylor Wallace – Food & Nutrition Blog
 - National Osteoporosis Foundation
- Consulting
 - PepsiCo
- Travel supported by **Sunsweet.**



www.drwallace.com

The screenshot shows the homepage of the Dr. Taylor Wallace Food & Nutrition Blog. At the top, there is a navigation bar with 'HOME' and 'MEDIA INQUIRIES' on the left, and social media icons for Facebook, Twitter, and Google+ on the right. Below this is the logo, which consists of a green leaf icon above the text 'Dr. Taylor Wallace' and 'FOOD & NUTRITION BLOG'. A secondary navigation bar contains links for 'Home', 'About', 'Resources', 'Blog', 'Research', 'Contact', and 'Recent News'. The main content area features a large image of chocolate-glazed donuts with colorful sprinkles. Overlaid on this image is a text box with the following text: 'Featured, Food Safety, Food Technology, Nutrition / 31 Aug 2015' and 'What Does FDA's Trans Fat Ban Mean For You?'. To the right of the donut image is a section titled 'ABOUT ME' with a portrait of Dr. Taylor Wallace and a short bio: 'I have always had a passion for food. When I was a kid, I basically lived in the kitchen with my grandmother (Mamaw!), a self made homemaker, who taught me how to...'

HOME | MEDIA INQUIRIES

f t g

Dr. Taylor Wallace
FOOD & NUTRITION BLOG

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Featured, Food Safety, Food Technology,
Nutrition / 31 Aug 2015

What Does FDA's Trans Fat Ban Mean For You?

ABOUT ME



About Dr. Taylor Wallace

I have always had a passion for food. When I was a kid, I basically lived in the kitchen with my grandmother (Mamaw!), a self made homemaker, who taught me how to...

Today's Overview

1

- Peak Bone Mass

2

- Bone Loss in Adulthood

3

- Research on Prunes

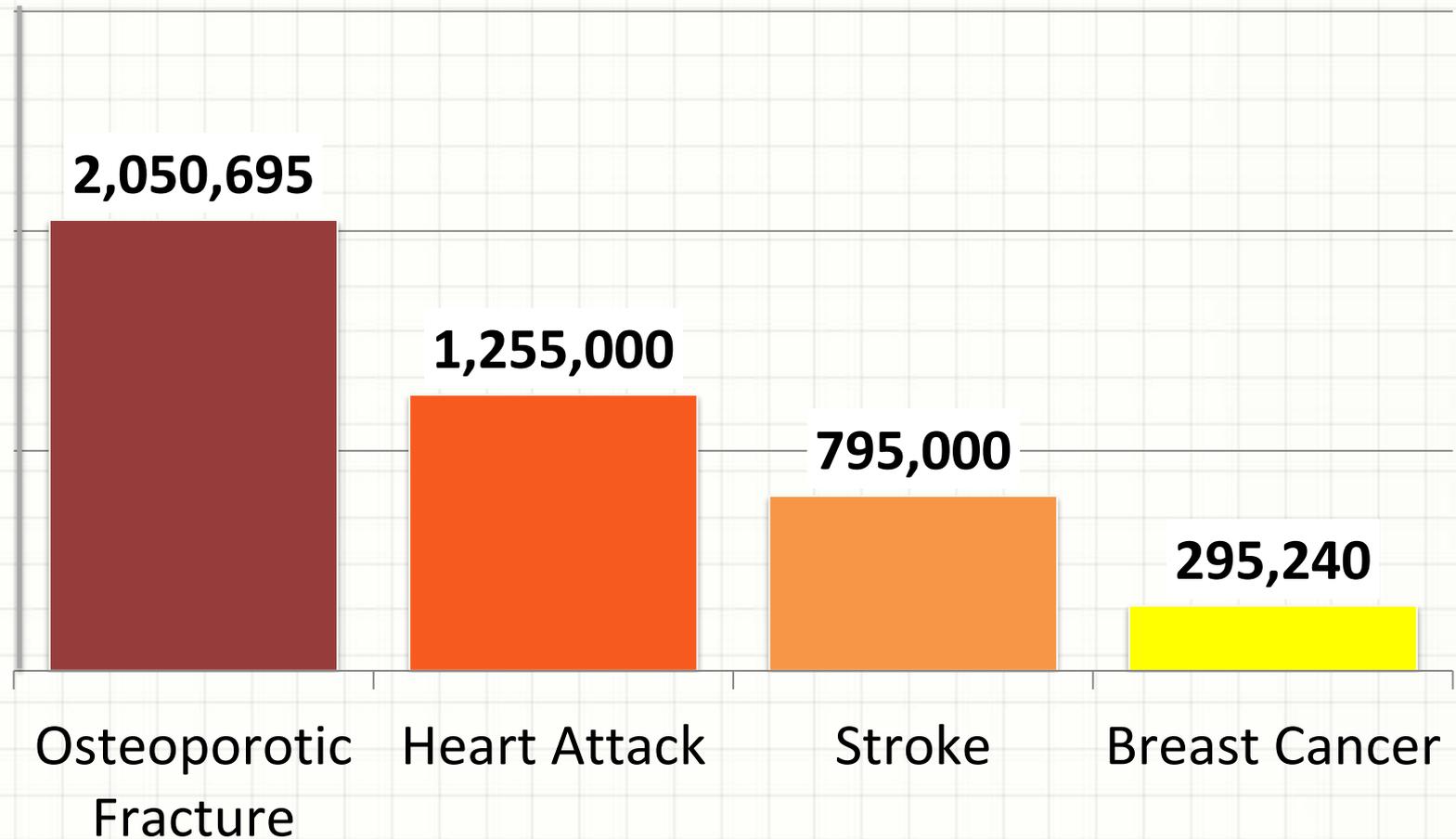
4

- Future Directions

Bone – A Living Tissue!

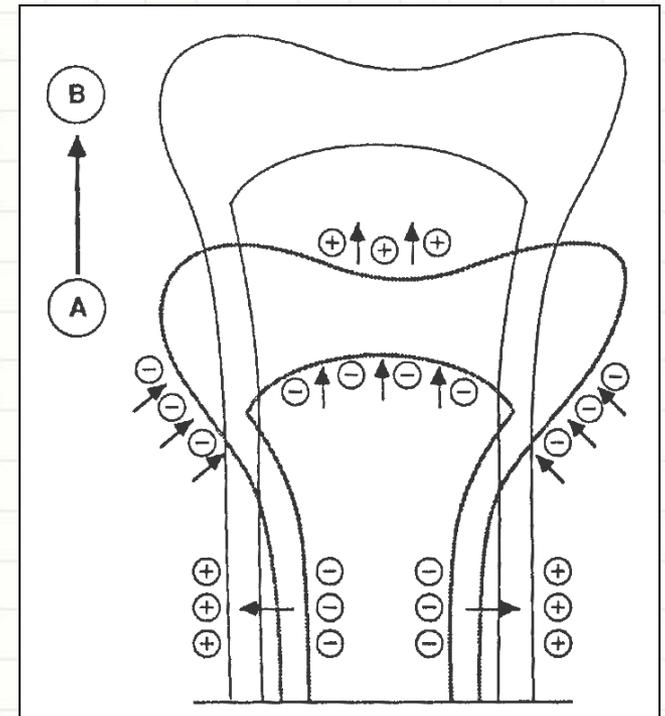
- Our bones are living tissue and constantly changing. From the moment of birth until young adulthood, bones are growing and strengthening.
- **10.2 million** adults age 50+ currently have osteoporosis. **43.4 million** have low bone mass.
- Nutrition and physical activity play a pivotal role in bone health throughout the lifespan.

Significance of Osteoporosis



Prevention Begins Early!

- Optimization of lifestyle factors known to influence peak bone mass and strength is one strategy NOF has adopted to **reduce the risk of osteoporosis** or low bone mass.
- Lifestyle choices are attributed to **20-40%** of adult peak bone mass.



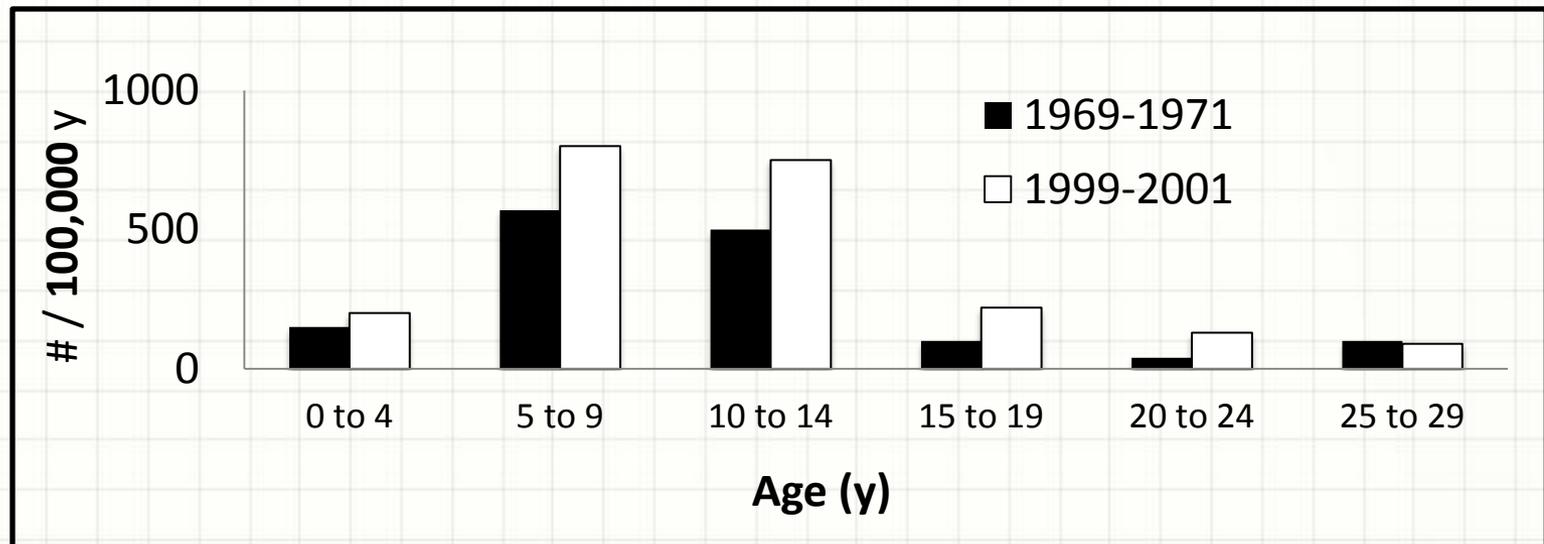
Definition of Peak Bone Mass

- **Peak Bone Mass:** amount of bone gained by the time an adult stable skeletal state has been attained.
- **Peak Bone Strength:** the peak adult stable bone mass, density, microarchitecture, micro-repair mechanisms, and geometric properties that provide structural strength.

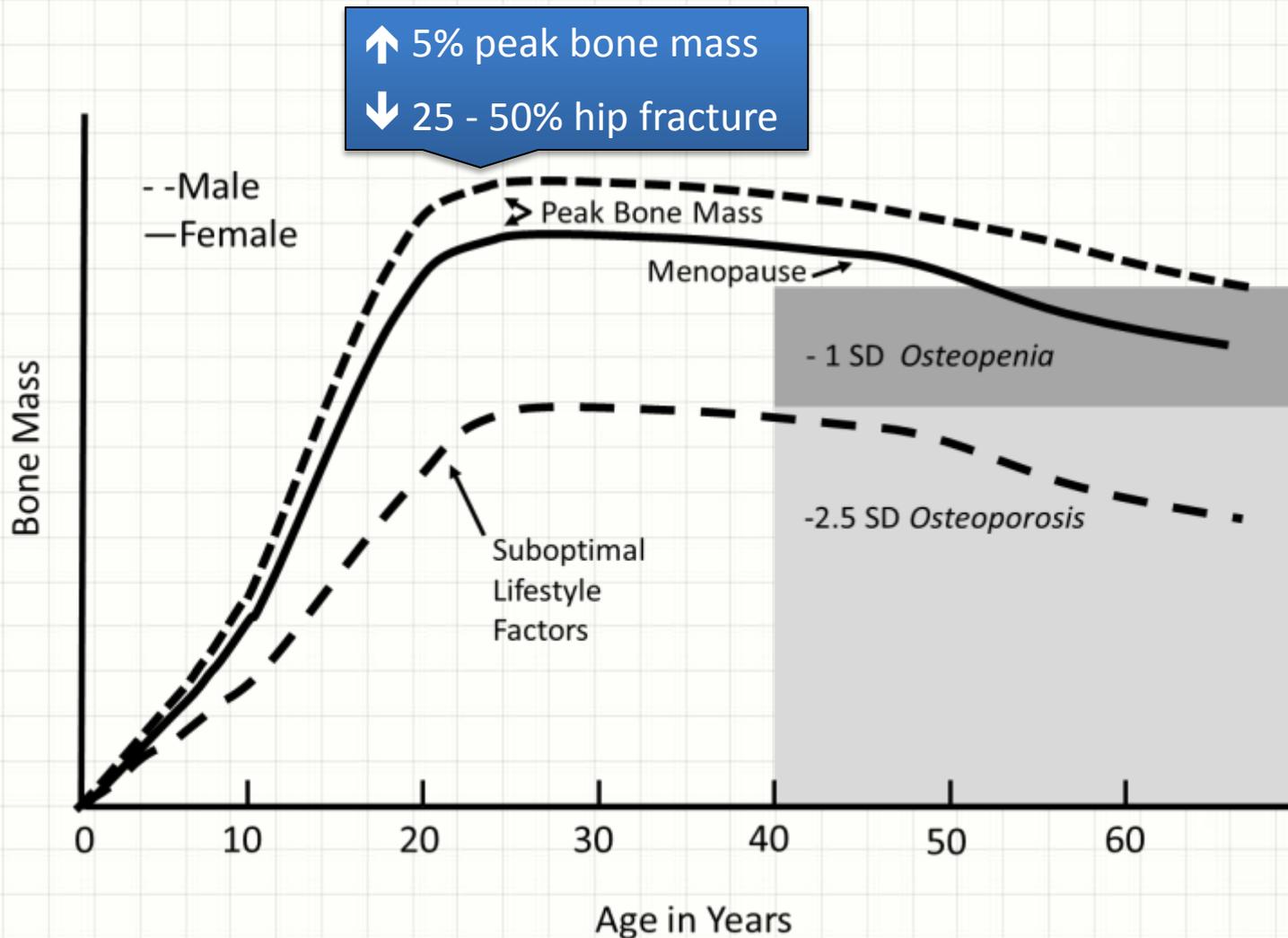


Why is Peak Bone Mass Important?

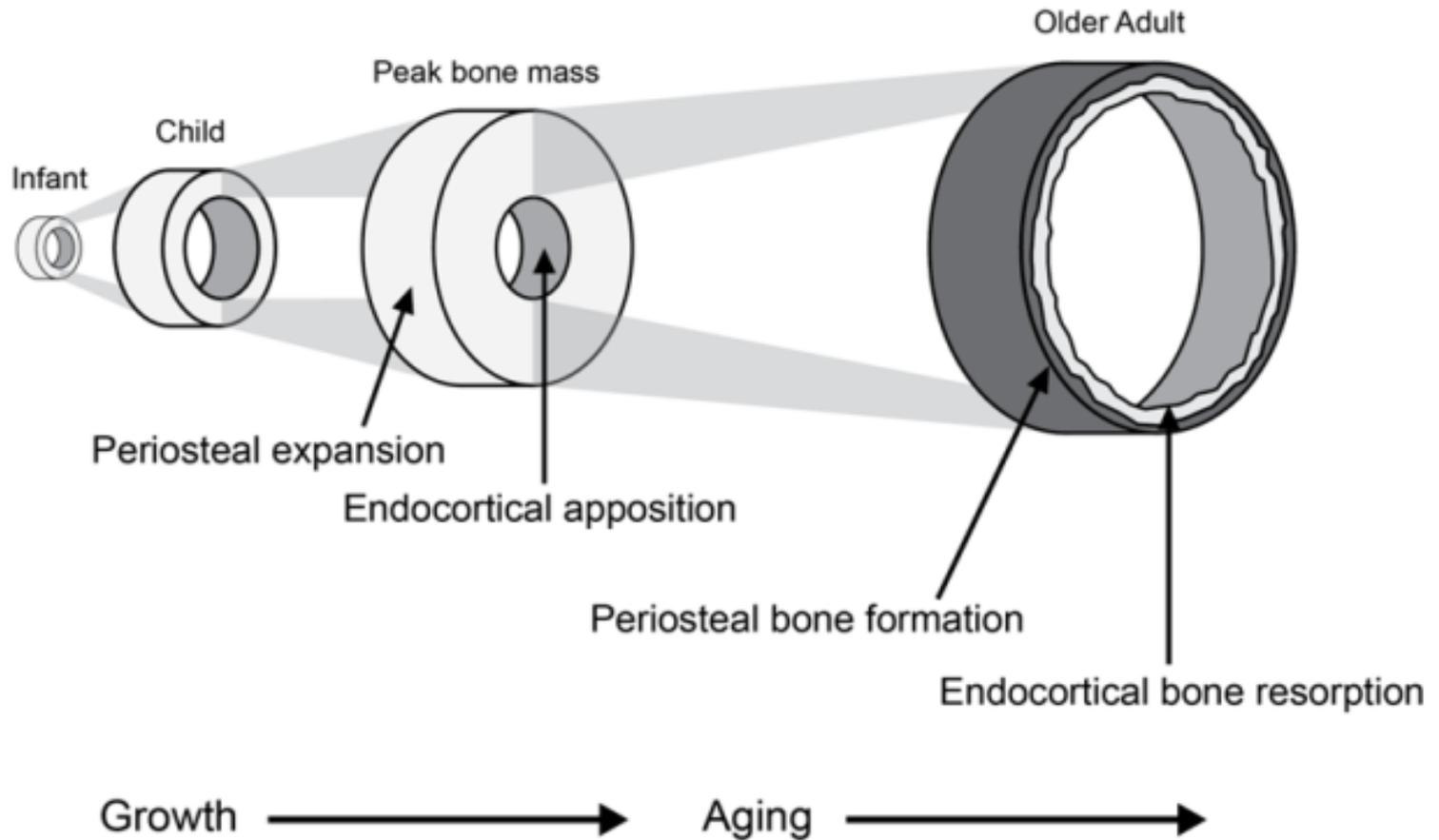
- **Frequency of fractures ↑ in children** as compared to young and middle-aged adults, reflecting the vulnerability of the growing skeleton.
- **Prevention of fractures later in life.**



Bone Mass Across the Lifespan



Bone Health Across the Lifespan



NOF & ASN Scientific Statement

- Systematically reviews and grades **lifestyle factors** that may influence peak bone mass development **based on available scientific evidence**.
- Lack of evidence doesn't necessarily **equal** lack of benefit or vice versa.
 - e.g. minimal data on smoking and alcohol consumption in children.
- **A (Strong), B (Moderate), C (Limited), D (Inadequate)** evidence available.

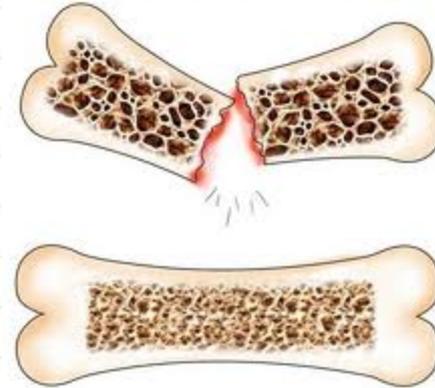


NOF & ASN Scientific Statement

Lifestyle Factor	Grade
Calcium	A
Physical Activity – Bone Mass & Density	A
Vitamin D	B
Dairy	B
Physical Activity - Bone Structural Outcomes	B
Fiber, Fruits & Vegetables	C
Detriment of Caffeine & Cola Beverages, Detriment of Smoking	C
Fat, Other Micronutrients, Infant Nutrition, Detriment of Alcohol	D

A (Strong), B (Moderate), C (Limited), D (Inadequate) evidence available.

Prunes – Clinical Trials



Prunes – Clinical Trials

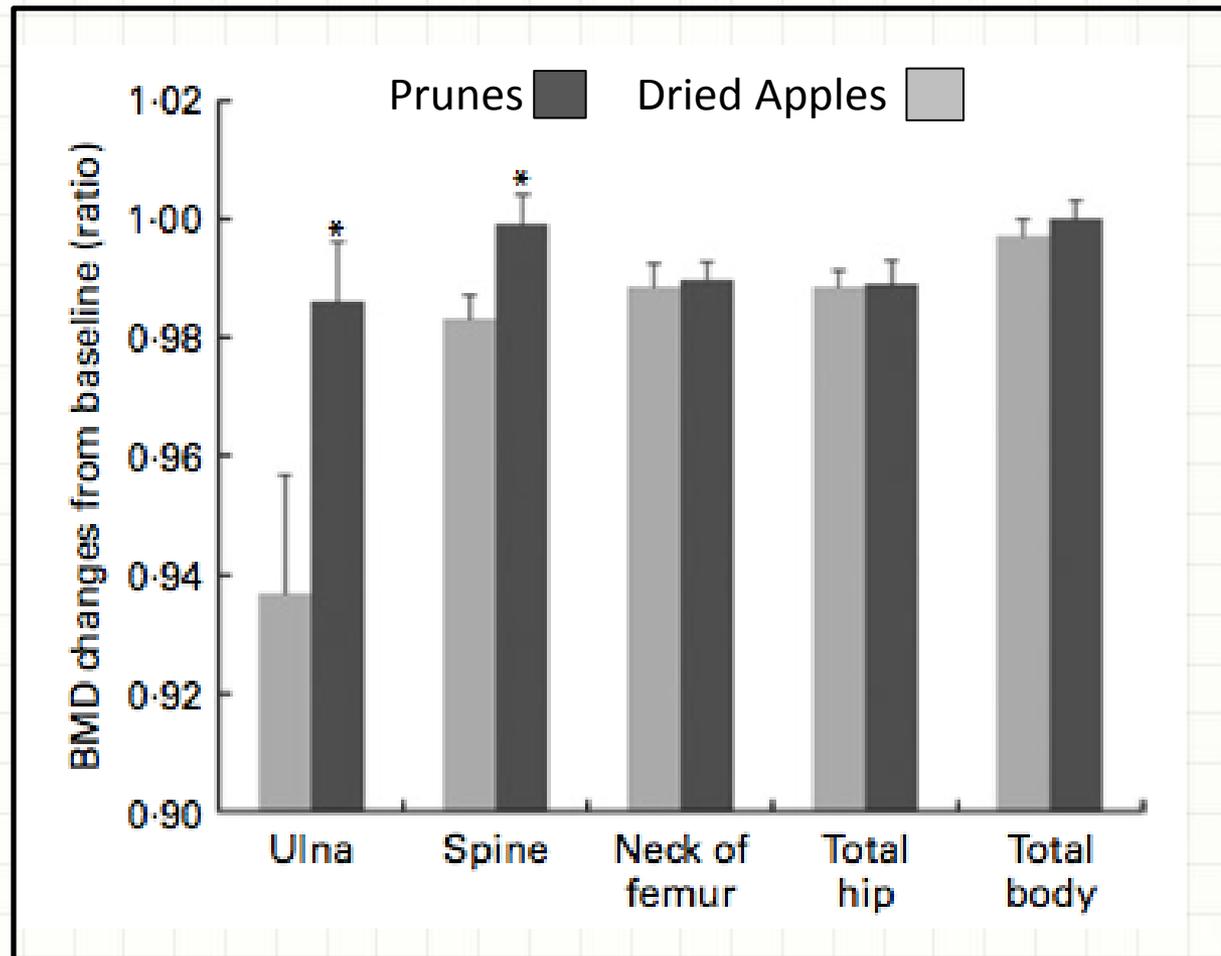
Citation	Population	Outcomes
Arjmandi et al. 2002	Postmenopausal women (n=58)	✓ Biochemical markers of bone formation.
Hooshmand et al. 2011	Postmenopausal women (n=160)	✓ BMD ✓ Biochemical markers of bone formation.
Hooshmand et al. 2014	Postmenopausal women (n=160)	✓ BMD ✓ Biochemical markers of bone formation.

J Women Health. 2002; 11(1):61.

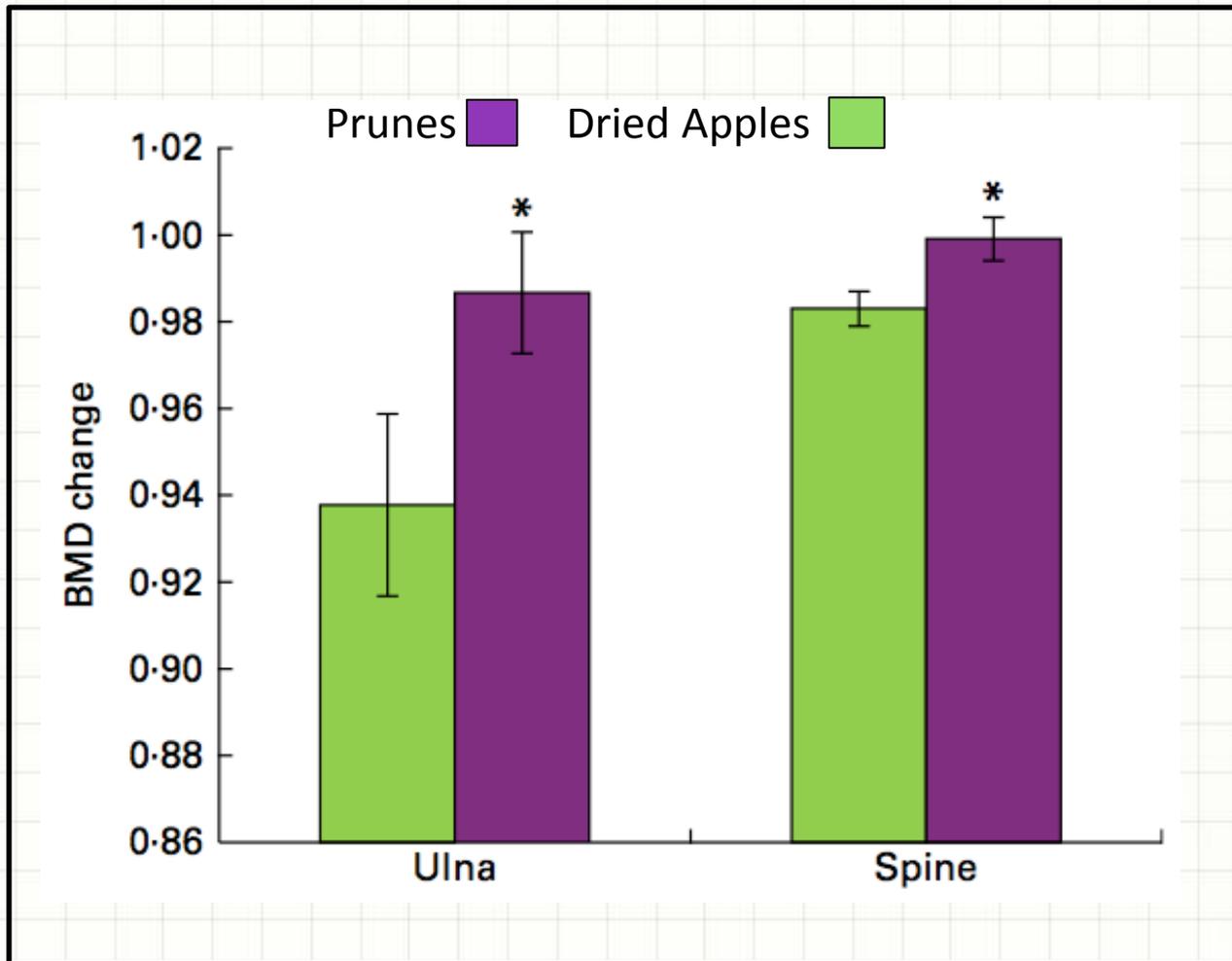
Brit J Nutr. 2011; 106:923.

Brit J Nutr. 2014; 112:55.

Prunes – Older Women



Prunes – Older Women



Prunes – Peak Bone Mass

- Rat study presented at the 2015 International Symposium on Nutritional Aspects of Osteoporosis supports that prunes **may positively impact peak bone mass development** in a rodent model.
- A clinical study in adolescents would greatly help **broaden recommendations** about prunes and bone health.

Public Policy

- American's **don't consume recommended servings of fruit.**
- One serving of prunes (~5 prunes):
 - 96 kcal
 - A variety of essential nutrients, including potassium and fiber
 - Other dietary bioactive compounds
- Prune consumption **is safe** and may show a significant benefit to bone health.

Future Endeavors

- NOF is interested in conducting a clinical trial in adolescent girls to see if **prunes impact peak bone mass** development.
- Future studies in **men and younger adults** will also be important for public health recommendations.





THANK YOU!

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Dr.TaylorWallace
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