

DEXA & FRAX SCORES

FLAME LECTURE: 52

LINU 8.20.19

LEARNING OBJECTIVES

- ▶ To understand the use of DEXA scan
- ▶ To describe FRAX score
- ▶ Prerequisites:
 - ▶ FLAME LECTURE 48: Overview of Osteopenia/Osteoporosis
- ▶ See also – for closely related topics
 - ▶ Other FLAMEs on Osteoporosis

DEXA SCAN

- ▶ DEXA = Dual Energy X-ray absorptiometry
 - ▶ DXA scanner produces two x-ray beams; one high energy and one low energy
 - ▶ The machine measures the amounts of x-rays that pass through the bone from each beam
 - ▶ Based on the difference between the beams, the bone density can be measured

WHO SHOULD GET A DEXA?

USPSTF GUIDELINES

- ▶ Women Ages 65 or older (Grade B)
- ▶ Postmenopausal women <65 y at increased risk of osteoporosis (Grade B)

COMPONENTS OF THE DEXA

- ▶ T-score: score compared with a 30-year old (when bone is the strongest)
 - ▶ -1.0 or above = normal
 - ▶ -1.0 to -2.5 = osteopenia
 - ▶ -2.5 or lower = osteoporosis
- ▶ Z-score: score compared to a person of the same age and body size

FRAX SCORE

- ▶ Developed by WHO
- ▶ The DEXA can only give you an idea of how much weaker a patient's bones have become. The FRAX score helps estimate the risk
- ▶ Can be used to guide treatment
 - ▶ Treat if >20% risk of major osteoporotic fracture or >3% risk of hip fracture
- ▶ Can be used for screening if patient is <65 years
 - ▶ If FRAX score >8.4%, screen for Osteoporosis

FRAX SCORE

- ▶ Estimates 10-year fracture risk based on DEXA results and 12 other risk factors
 - ▶ Age: bone loss worsens with age
 - ▶ Sex: women are at higher risk than men
 - ▶ Weight: low weight increases risk
 - ▶ Height: BMI can also evaluate frailty vs. overweight
 - ▶ Smoking or drinking history

FRAX SCORE

- ▶ Estimates 10-year fracture risk based on DEXA results and other 12 risk factors
 - ▶ Previous fracture history
 - ▶ Family history of hip fracture
 - ▶ Glucocorticoids: can interfere with new bone formation
 - ▶ Rheumatoid arthritis: higher risk of osteoporosis
 - ▶ Secondary osteoporosis: includes conditions related to osteoporosis like T1DM, hyperthyroidism, chronic liver disease, premature menopause

REFERENCES / IMPORTANT LINKS

- ▶ <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/osteoporosis-screening1>
- ▶ <https://www.nof.org/patients/diagnosis-information/bone-density-examtesting/>
- ▶ <https://www.sheffield.ac.uk/FRAX/tool.aspx?country=9>