Osteoporosis 2026: What Every Clinician Needs to Know

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COI Disclosure

Presenter: Dr. Jenny Thain

- **Relationships with financial sponsors:**
  - **Speakers Bureau/Honoraria:** Kyowa Kirin—speaker honorarium
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  - **Patents**: None
  - **Other:** Employee of Ontario Health

Session Specific Learning Objectives



By the end of this session, participants will be able to:

- Identify the principles of fracture risk assessment.
- Apply the 2023 Canadian Osteoporosis Guidelines for the initiation and monitoring of treatment.
- Describe the importance of treatment sequencing for optimal management of osteoporosis.



Betty 77F with Vertebral Fracture

PMH

1. Osteoporosis.
2. Rheumatoid arthritis.
3. Menopausal since age 50
4. Fatty liver

Medications

1. Acetaminophen 650 QID
2. Cholecalciferol 2,000IU daily
3. Levothyroxine 100 mcg daily
4. Pantoprazole 40 mg daily
5. polyethylene glycol 3350 daily
6. Hydroxychloroquine

SH

Fully Independent

Lives with 22-month-old grandson who she cares for



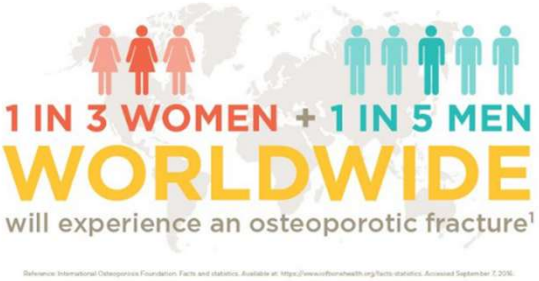
BMD:

LS T score -2.6, FN T score -2.2

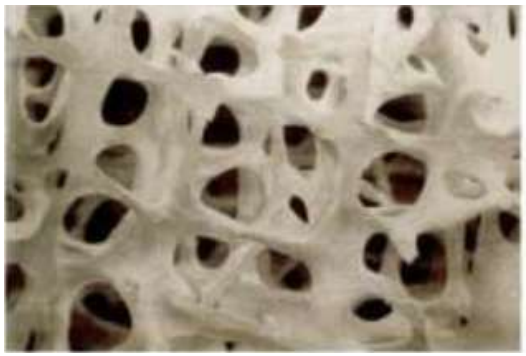
BW unremarkable

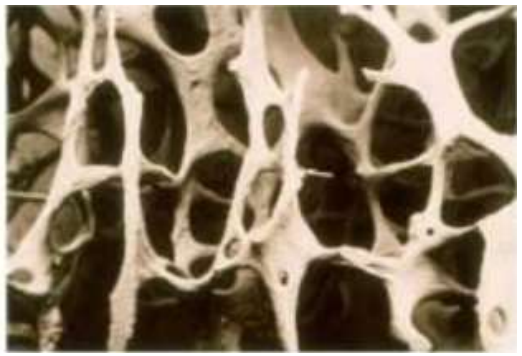
What now?

Definition



A systemic skeletal disease characterized by low bone mass and micro-architectural deterioration of bone tissue with a consequent increase in bone fragility and susceptibility to fracture





What is a Fragility Fracture?

Definition of a fragility fracture*:

A fracture that occurs *spontaneously* or following a *minor trauma* such as:

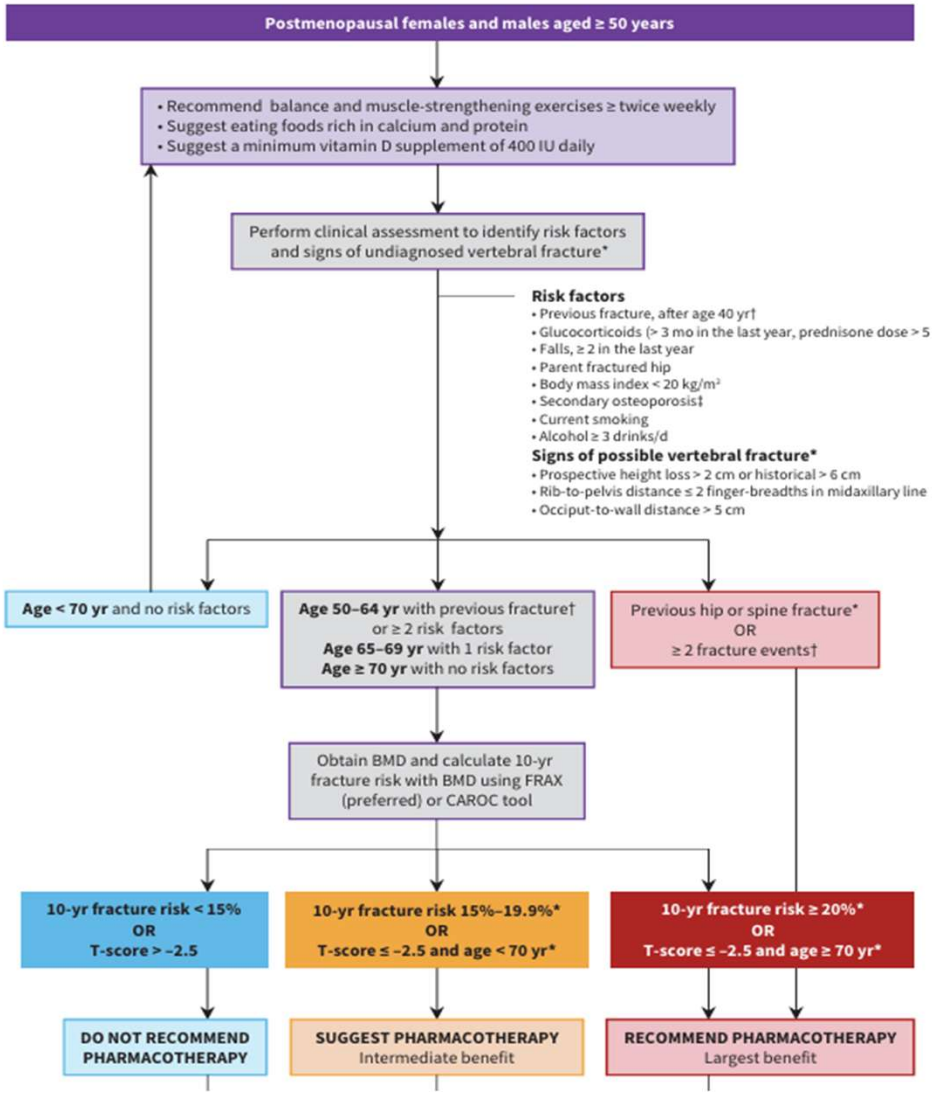
- Fall from a standing height (i.e. on the ice)
- Fall from a sitting position
- Fall from a supine position (bed or reclining deck chair < 1 metre high)
- Fall after having missed 1 to 3 steps in a staircase
- After a movement outside of the typical plane of motion or coughing



*Fragility fracture includes all bones, except skull and face, patella, hands and feet, cervical spine

1. Bessette L, et al. Contemp Clin Trials. 2008; 29:194-210.
2. Brown JP, et al. J Bone Miner Res. 2007;23(Suppl 1):M350.

Screening and Risk Stratification

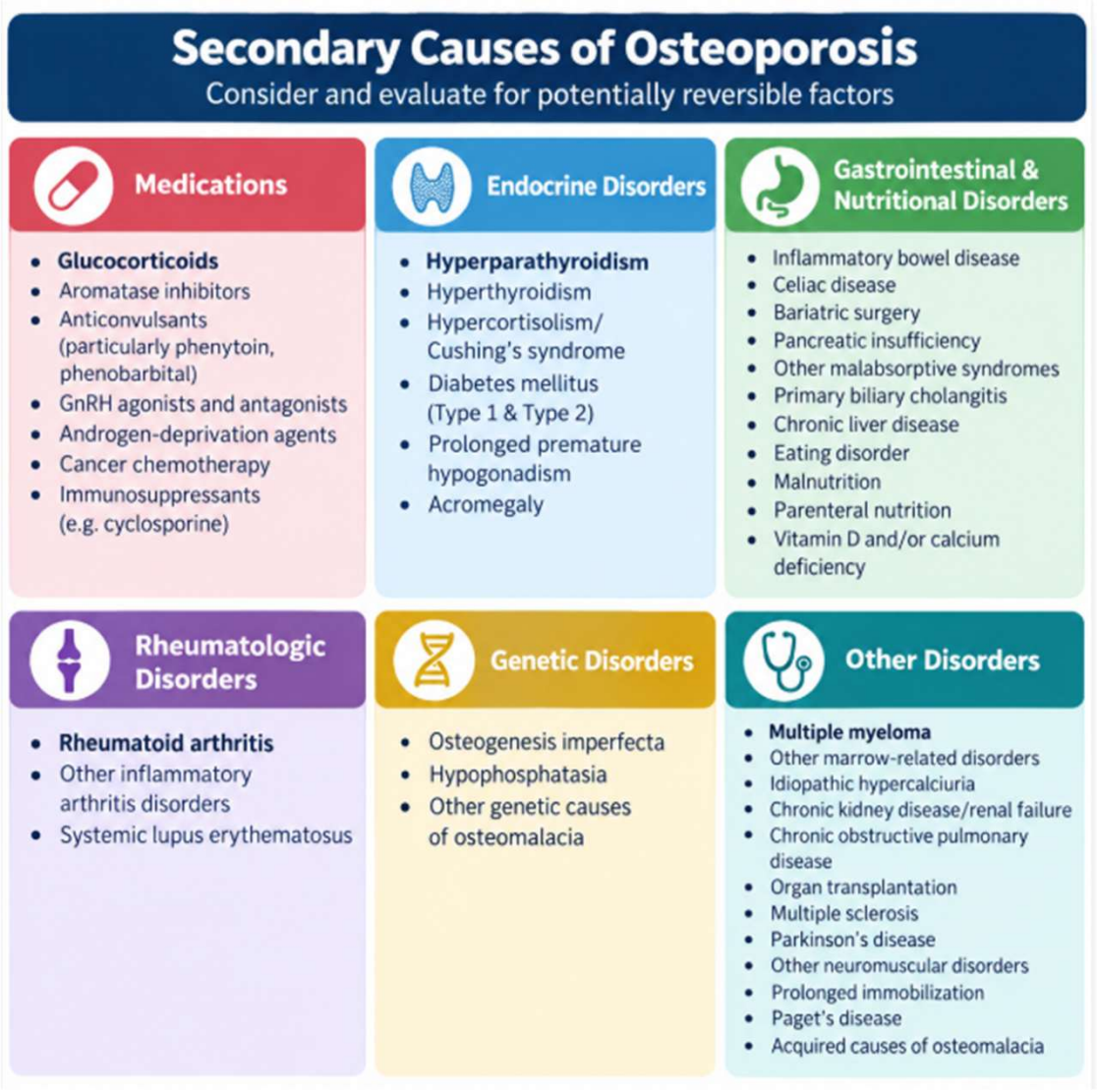


Risk Factors

- A clinical assessment for osteoporosis and fracture includes identifying risk factors and assessing for signs of undiagnosed vertebral fracture(s).

- **Previous fracture**, after age 40 (low trauma; fractures of hands, feet and craniofacial bones are not considered osteoporotic fractures)
- **Glucocorticoids** (> 3months in the last year; prednisone dose ≥5 mg daily)
  - Change from ≥7.5 mg daily (2010)
- **Falls (≥2 in the last year)**
- **Parent fractured hip**
- **Secondary osteoporosis**

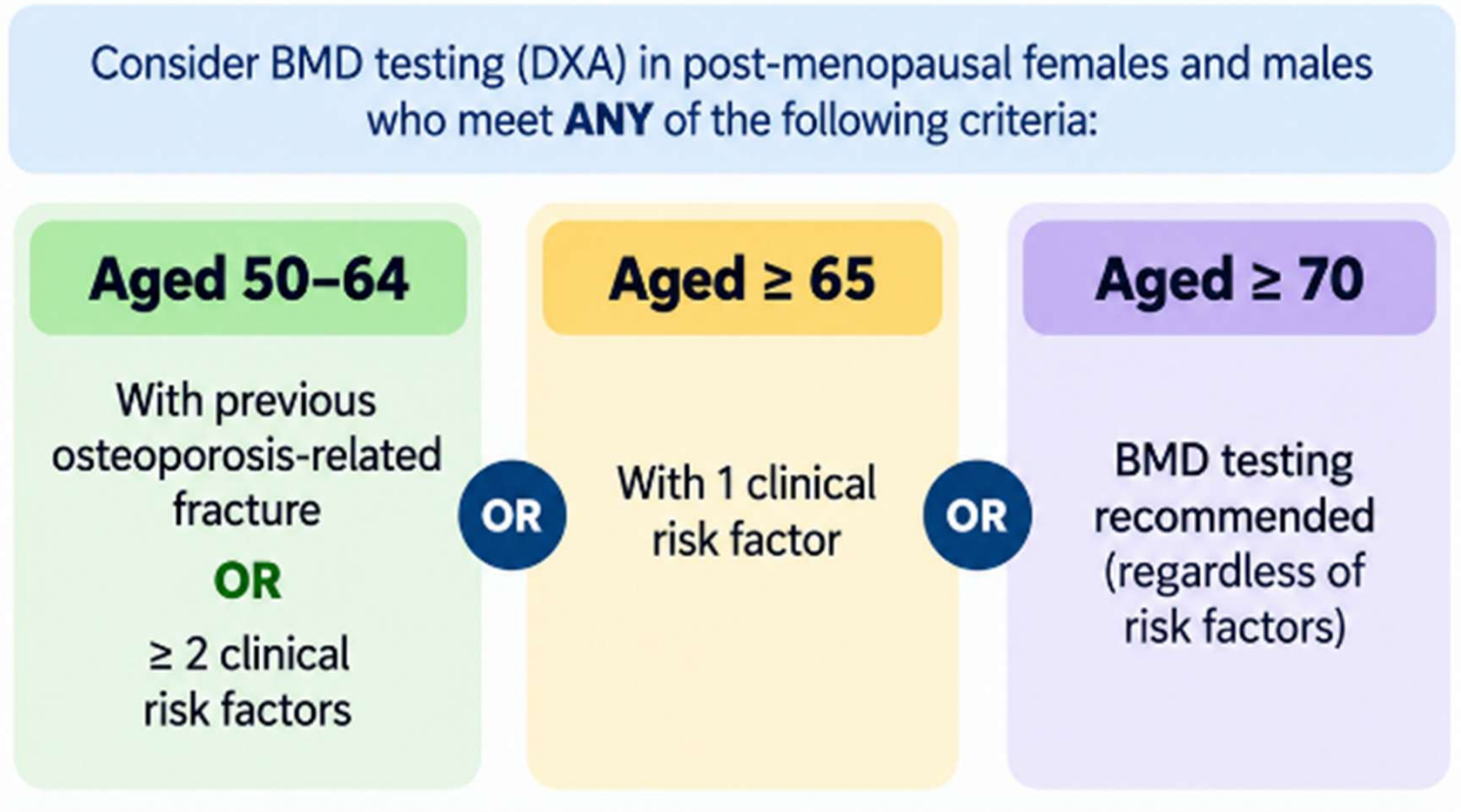
  (see table next slide)
- **Current smoking**
- **Alcohol ≥3 drinks/day**
- **Body Mass Index, <20 kg/m²**
  - Change from low body weight <60kg or >10% weight loss from age 25 (2010)



Routine Secondary Workup

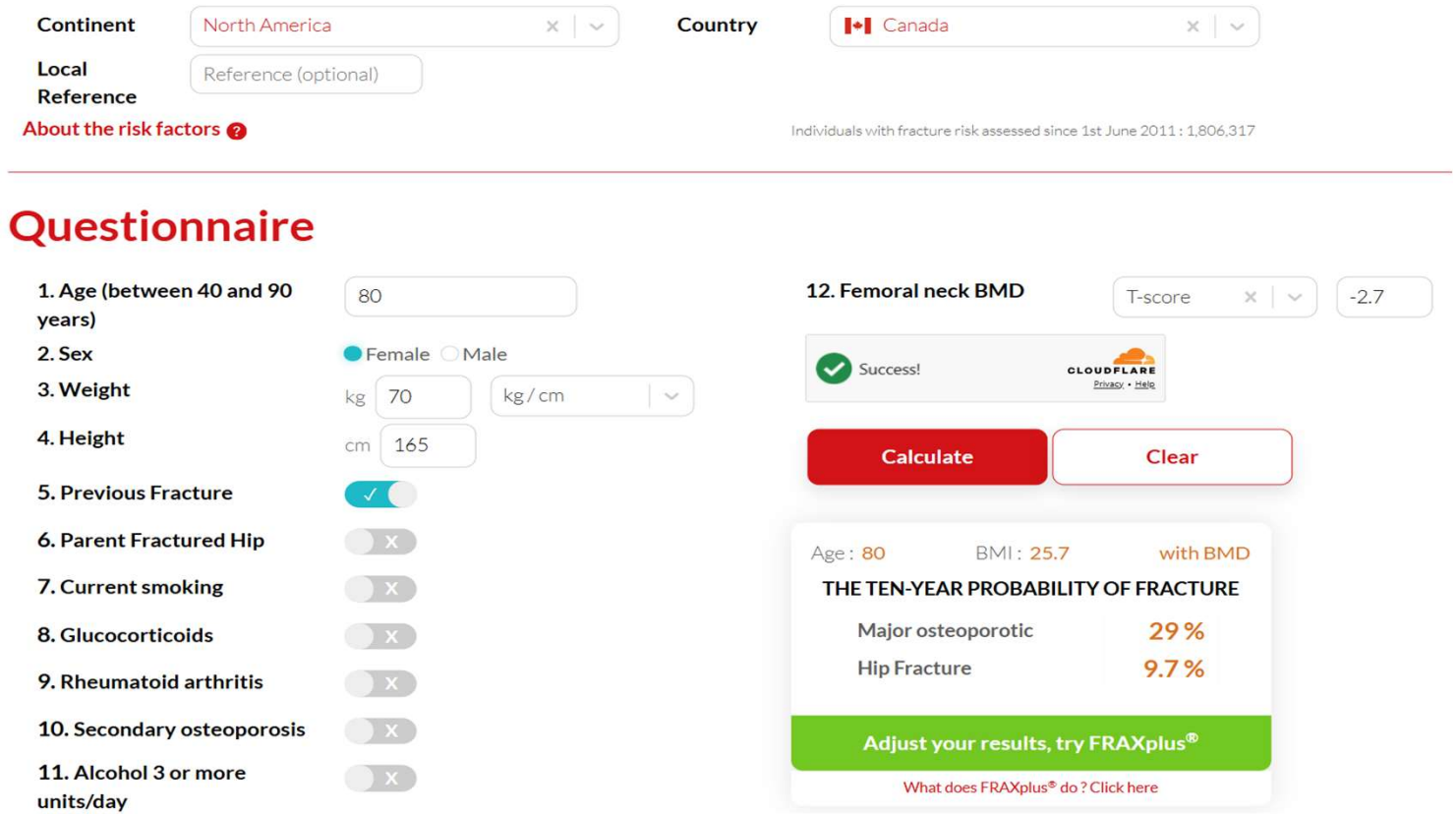
- Calcium
- Albumin
- 25 hydroxyvitamin D
- Creatinine
- TSH
- PTH
- ALP
- Phosphate
- ALP
- SPEP + FLC
- (celiac screen)

Screening Considers Age and Risk Factor(s)



Frax Calculator | FRAXplus®

Risk Stratification – **FRAX** preferred tool



Risk Category is FRAX and T-score Dependent

2023

LOW	INTERMEDIATE	HIGH
10-yr fracture risk < 15% OR T-score > –2.5	10-yr fracture risk 15%–19.9%* OR T-score ≤ –2.5 and age < 70 yr*	10-yr fracture risk ≥ 20%* OR T-score ≤ –2.5 and age ≥ 70 yr*

2010

<10%	10-19.9%	>20%

Any patient who with vertebral, hip fracture or >1 fragility fracture is HIGH RISK

HIGH RISK

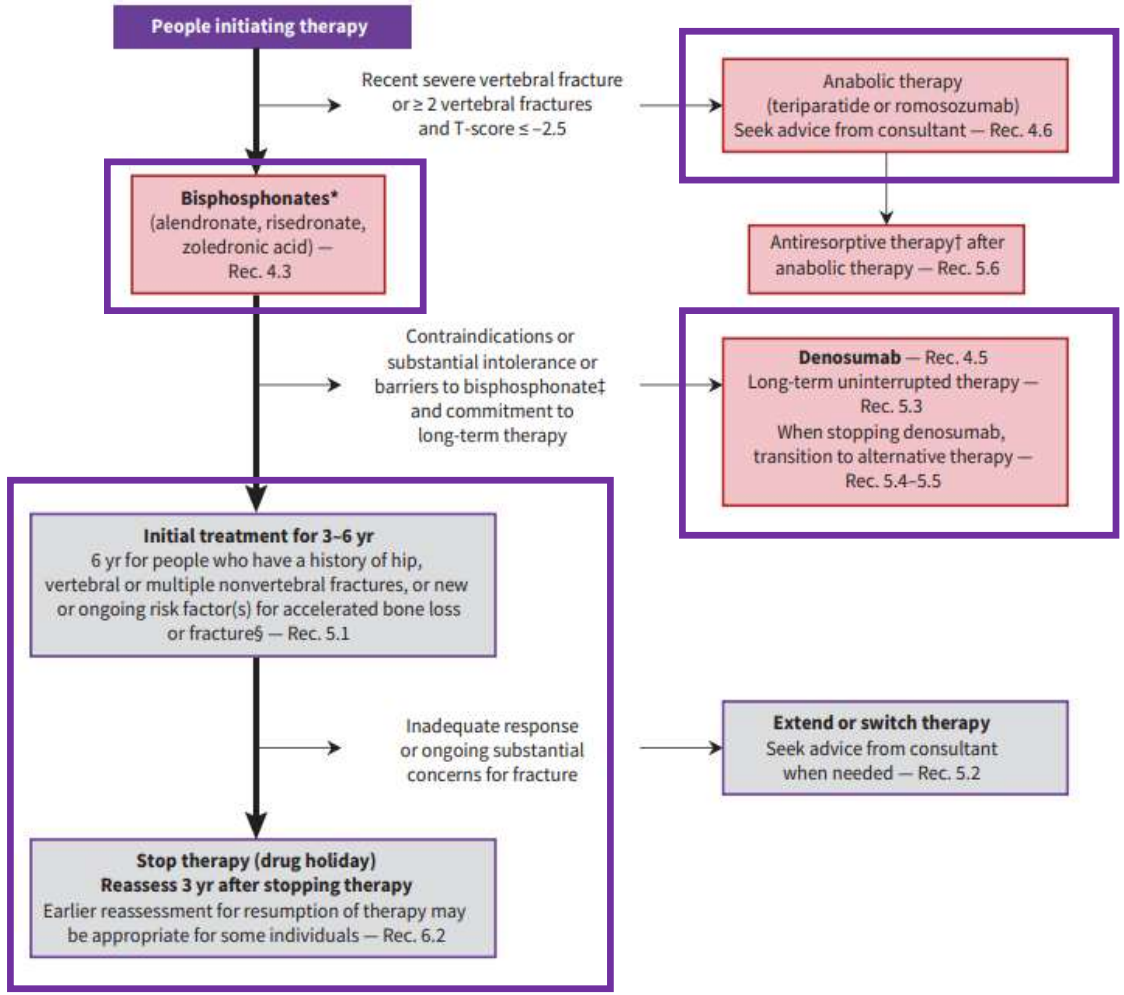


BMD is <u>not</u> required if the patient has hip and vertebral fracture



High Risk patients should be on Pharmacological Therapy

Pharmacotherapy

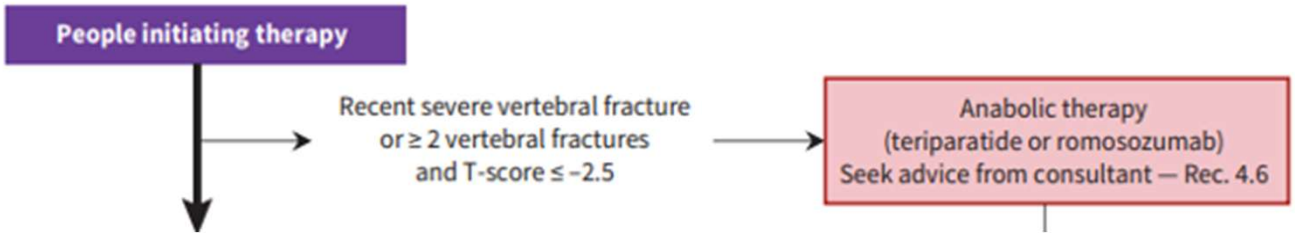


Osteoporosis Pharmacotherapy

Based on GRADE A evidence								
Type of Fracture	Antiresorptive Therapy						Bone Formation Therapy	
	Bisphosphonates			Denosumab	Raloxifene	Estrogen * (Hormone Therapy)	Teriparatide	Romosozumab
	Alendronate	Risedronate	Zoledronic Acid					
Vertebral	✓	✓	✓	✓	✓	✓	✓	✓
Hip	✓	✓	✓	✓	-	✓	-	✓
Non-vertebral†	✓	✓	✓	✓	-	✓	✓	✓

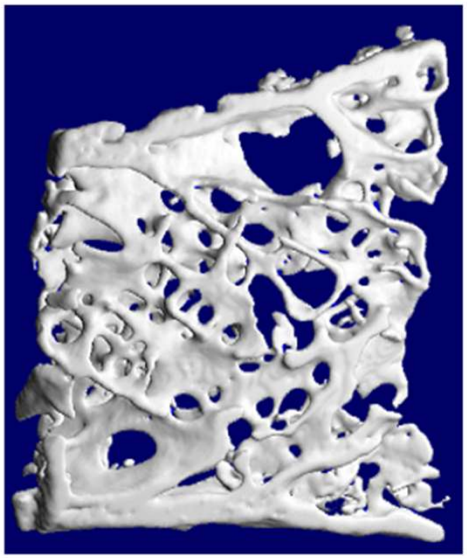
In high-risk patients taken an ANABOLIC FIRST approach

- In high-risk patients, including hip fracture, vert fracture, multiple fractures and recent fracture, I take an anabolic first approach, if there are no contraindications and it is feasible.

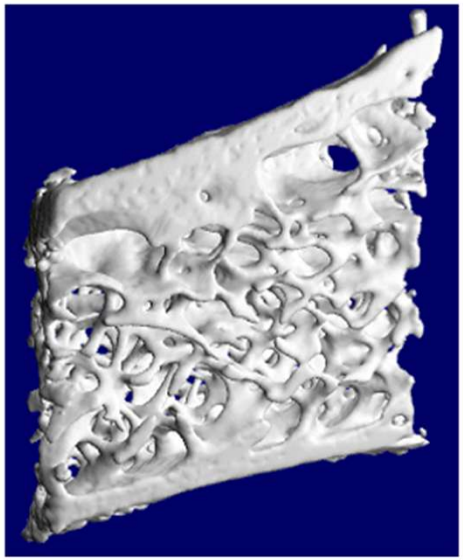


Bone Building Effects of Anabolics

Before
CD: 2.9/mm^3; Ct Th: 320 µm

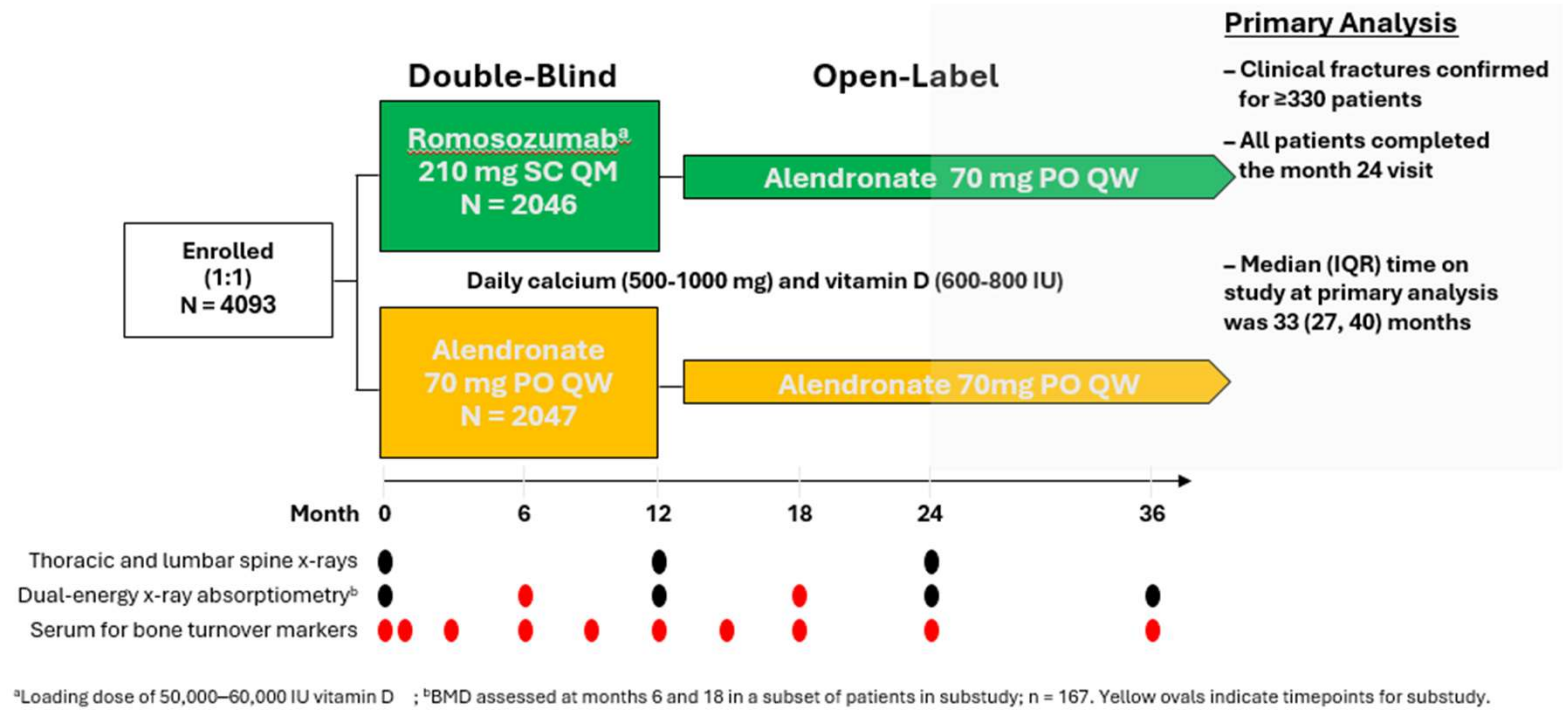


After
CD: 4.6/mm^3; Ct. Th. 420 µm



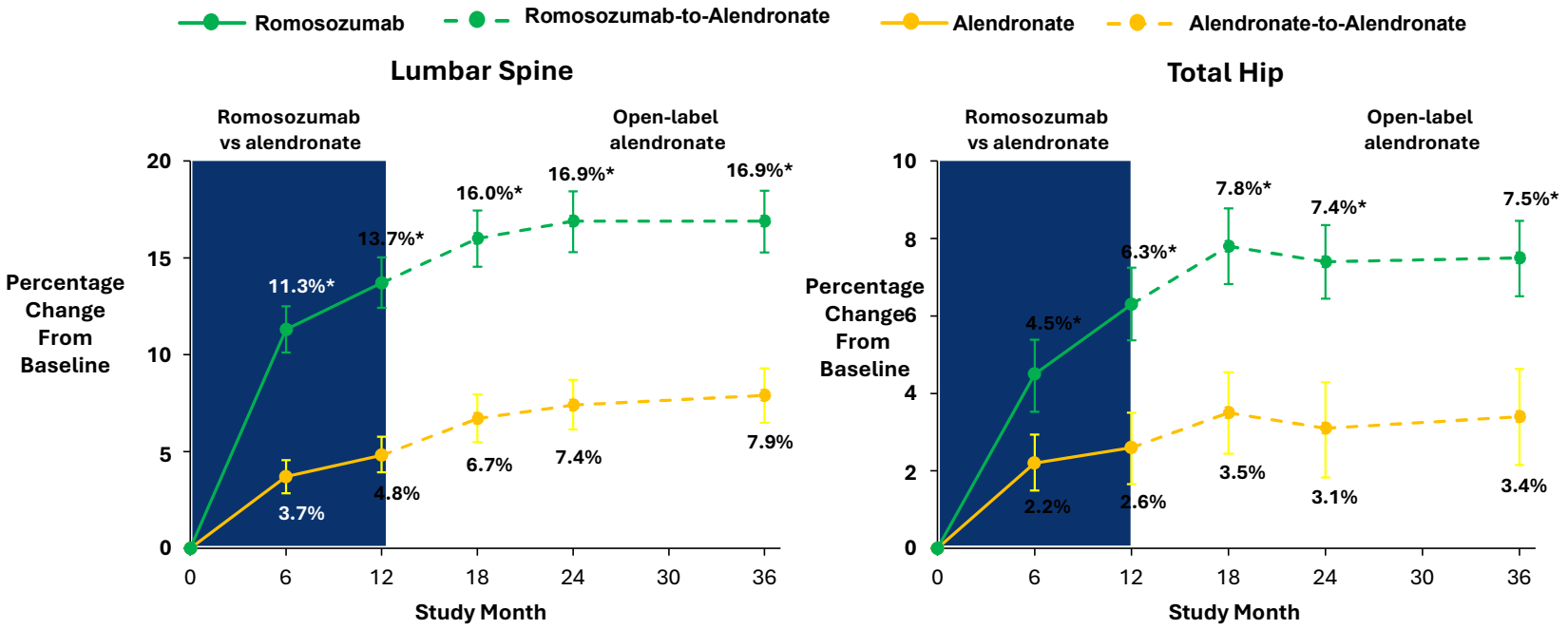
Dempster, JBMR 2001

Romosozumab – ARCH Trial



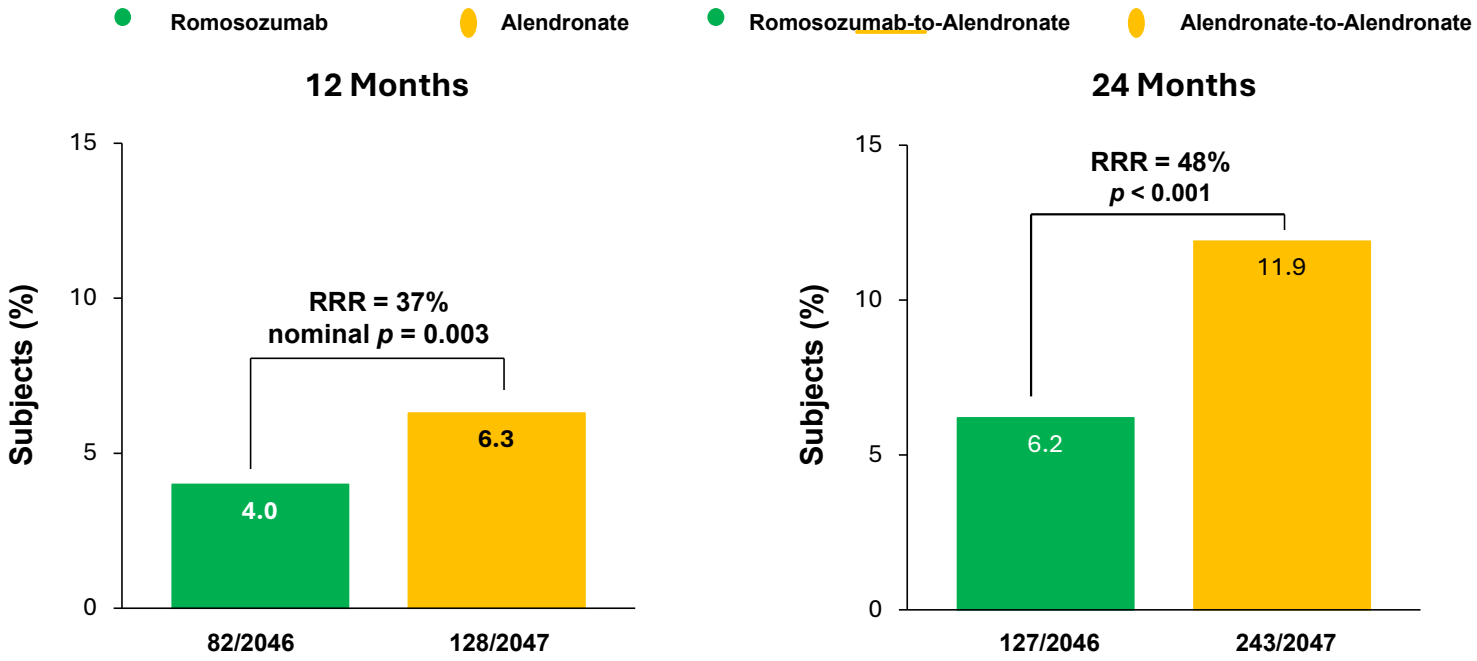
[a]Loading dose of 50,000–60,000 IU vitamin D ; [b]BMD assessed at months 6 and 18 in a subset of patients in substudy; n = 167. Yellow ovals indicate timepoints for substudy.

Percentage Change From Baseline in Lumbar Spine and Total Hip BMD Through Month 36 by LOCF



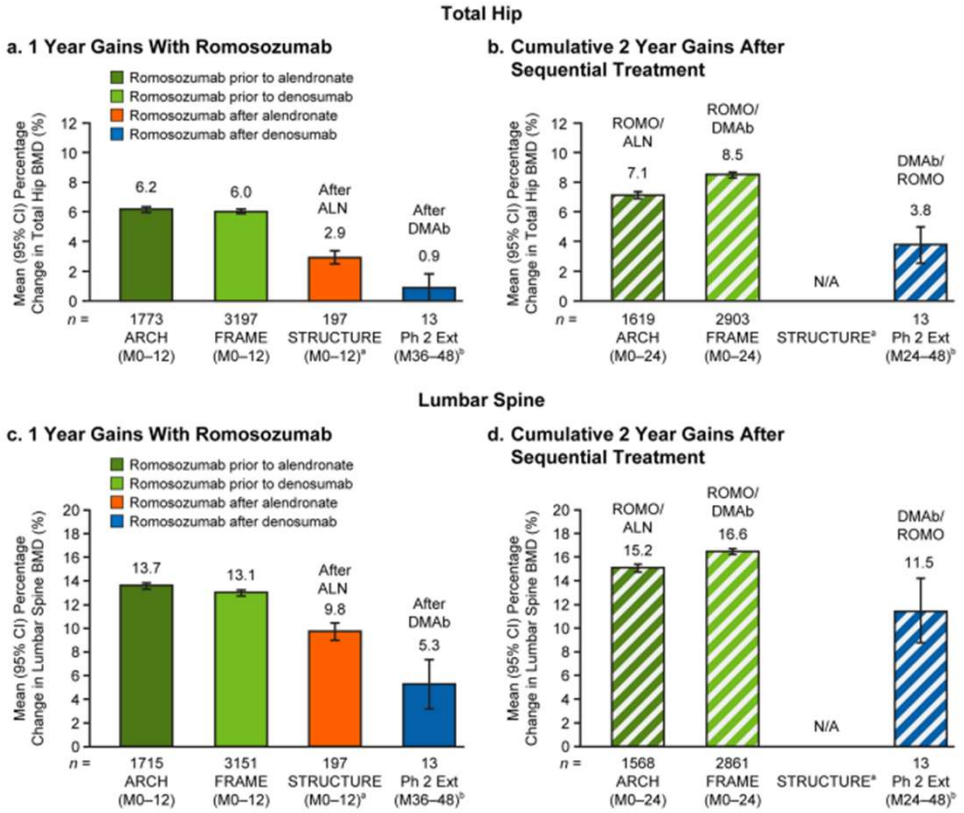
Data are least square mean (95% CI). Romosozumab-to-alendronate n = 84 lumbar spine, 85 total hip; alendronate-to-alendronate n = 79 lumbar spine, 80 total hip. *$p < 0.001$.

Primary Endpoint: Subject Incidence of New Vertebral Fracture Through Month 24 by Multiple Imputation



n/N1 = number of subjects with fractures/number of subjects in the primary analysis set for vertebral fractures. Missing fracture status was imputed by multiple imputation for patients without observed fracture at an earlier timepoint. n and % are based on the average across 5 imputed datasets. RRR = relative risk reduction.

Treatment Sequencing Matters



Greatest efficacy is seen with an anabolic first approach

Cosman et al. JBMR 2017

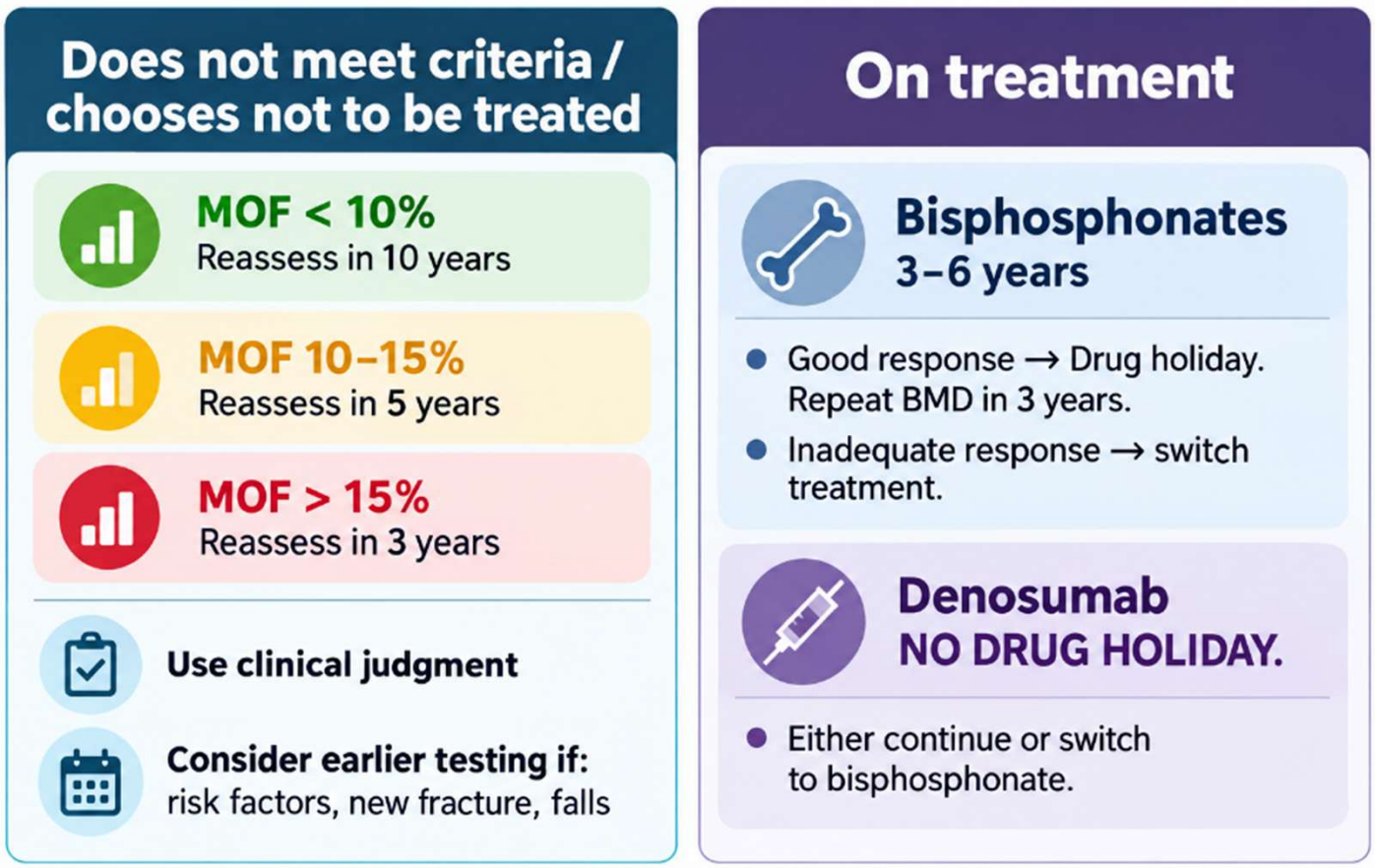
Romosozumab product monograph: Black box warning

Serious warnings and precautions

Potential risk of myocardial infarction, stroke and cardiovascular death:

- EVENITY may increase the risk of myocardial infarction, stroke, and cardiovascular death
- EVENITY treatment is not recommended in patients with a history of myocardial infarction or stroke
- Consider whether the benefits outweigh the risks in patients with other cardiovascular or cerebrovascular disease or associated risk factors
- EVENITY treatment should be discontinued in patients that experience a myocardial infarction or stroke

Treatment Monitoring



Going back to Betty



- Fit and Healthy
- Severe Vertebral Fracture = High Risk
- No cardiovascular history
- BW unremarkable
- BMD LS T score -2.6, FN T score -2.2

= Treat with Romosozumab followed by anti-resorptive

Summary

1 FRAX is now the preferred fracture risk assessment tool

Use country-specific FRAX (Canada) to estimate 10-year probability of major osteoporotic and hip fracture.



- Validated
- Easy to use
- Incorporates clinical risk factors
- Guides treatment decisions

2 Risk stratification incorporates FRAX, BMD T-Score and Age

Use FRAX, BMD (T-score) and age together to determine overall fracture risk.



3 Fracture risk categories (based on FRAX 10-year risk of major osteoporotic fracture)

Low Risk	Intermediate Risk	High Risk
< 15%	15 – 19.9%	≥ 20%

4 For high-risk patients, consider an ANABOLIC FIRST approach

In patients at high risk of fracture (e.g., FRAX ≥20%), consider initial treatment with an anabolic agent.



5 Treatment sequencing matters

Follow anabolic therapy with an antiresorptive agent to maintain gains in bone density and sustained fracture risk reduction.



6 Clearer guidelines for treatment monitoring and BMD testing

Updated recommendations provide more specific guidance on monitoring response to therapy and timing of repeat BMD testing.



Monitor treatment response



Repeat BMD testing at recommended intervals

Fracture Risk Scale (FRS)

https://www.gerascentre.ca/our-guidelines/fracture-risk-scale-frs/



Thank You – Happy to Take Questions