Bone Voyage: Navigating Comprehensive Osteoporosis Care

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FMF
Family Medicine Forum
Forum en médecine familiale

THE COLLEGE OF FAMILY PHYSICIANS OF CANADA
LE COLLÈGE DES MÉDECINS DE FAMILLE DU CANADA

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PRESENTER DISCLOSURE

Presenter: Divya Garg

Relationships with financial sponsors:

- **Any direct financial relationships, including receipt of honoraria:**

  None.

- **Membership on advisory boards or speakers' bureaus:**

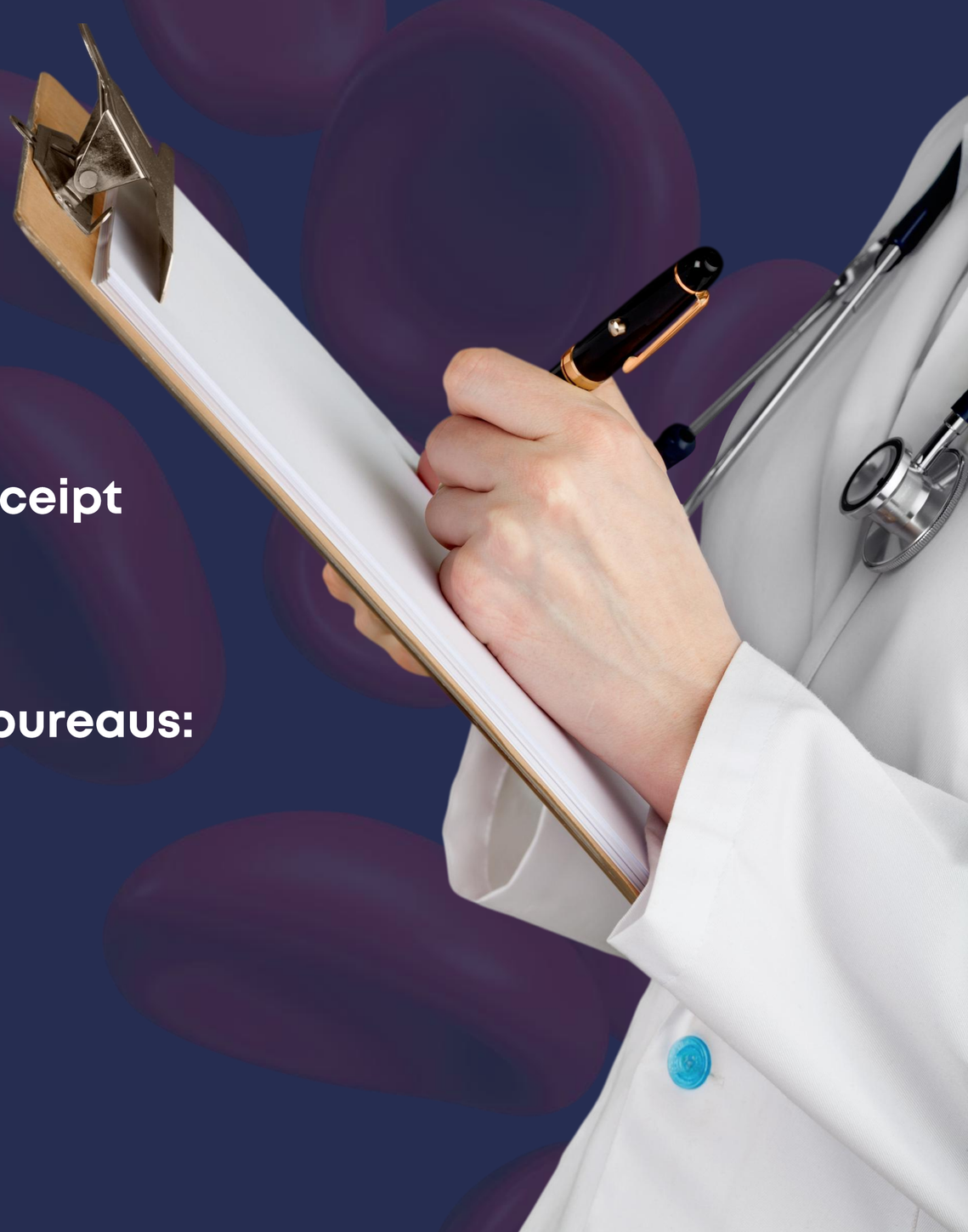
  None

- **Patents for drugs or devices:**

  None

- **Other:**

  None



DISCLOSURE OF FINANCIAL SUPPORT

No external support

Potential for conflict(s) of interest: None

Objectives

At the conclusion of this activity, participants will be able to:

1. Assess individual fracture and fall risk using evidence-based tools
2. Integrate nutrition, exercise, and pharmacotherapy to reduce fracture risk, applying clinical guidelines
3. Implement shared decision-making with patients to select personalized treatment plans and monitoring of bone health

Guideline CPD

Clinical practice guideline for management of osteoporosis and fracture prevention in Canada: 2023 update

Suzanne N. Morin MD MSc, Sidney Feldman MD, Larry Funnell, Lora Giangregorio PhD, Sandra Kim MD, Heather McDonald-Blumer MD, Nancy Santesso PhD, Rowena Ridout MD, Wendy Ward PhD, Maureen C. Ashe PhD, Zahra Bardai MD, Joan Bartley, Neil Binkley MD, Steven Burrell MD, Debra Butt MD, Suzanne M. Cadarette PhD, Angela M. Cheung MD PhD, Phil Chilibeck PhD, Sheila Dunn MD, Jamie Falk PharmD, Heather Frame MD, William Gittings PhD, Kaleen Hayes PhD, Carol Holmes MD, George Ioannidis PhD, Susan B. Jaglal PhD, Robert Josse MD, Aliya A. Khan MD, Virginia McIntyre, Lynn Nash MD, Ahmed Negm MD PhD, Alexandra Papaioannou MD MSc, Matteo Ponzano PhD, Isabel B. Rodrigues PhD, Lehana Thabane PhD, Christine A. Thomas MBA, Lianne Tile MD, John D. Wark MBBS PhD; for the Osteoporosis Canada 2023 Guideline Update Group

■ Cite as: *CMAJ* 2023 October 10;195:E1333-48. doi: 10.1503/cmaj.221647

OSTEOPOROSIS CANADA

Guideline CPD

Recommendations on screening for primary prevention of fragility fractures

Guylène Thériault MD MEd, Heather Limburg MSc, Scott Klarenbach MD MSc, Donna L. Reynolds MD MSc, John J. Riva DC PhD, Brett D. Thombs PhD, Laure A. Tessier MSc, Roland Grad MDCM MSc, Brenda J. Wilson MBChB MSc; for the Canadian Task Force on Preventive Health Care

■ Cite as: *CMAJ* 2023 May 8;195:E639-49. doi: 10.1503/cmaj.221219

Canadian Task Force
on Preventive Health Care

SOGC CLINICAL PRACTICE GUIDELINE

No. 422g, May 2022 (Replaces No. 312, September 2014)

Guideline No. 422g: Menopause and Osteoporosis

Authors
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Let’s start with a case…

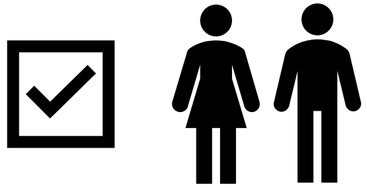
Roxanne is a 70-year-old female with a history of hypothyroidism. Risk factors for fragility fracture include history of hip fracture in mother. She is worried about fractures and has had two falls in the past year.

How should we address Roxanne’s bone health?

SCREENING & RISK ASSESSMENT

Who to screen?

OSTEOPOROSIS CANADA



Clinical assessment 50+
Age 50-64 with previous # or ≥2 risk factors
Age 65-69 with 1 risk factor
Age 70+

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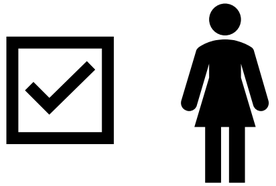
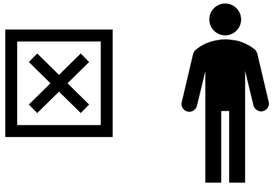
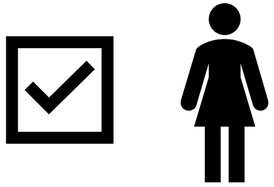


Females age 65+



Not enough evidence to support screening males

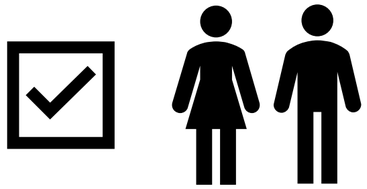
SOGC



Postmenopausal females
Age 50-64 – clinical risk assessment
Females 65+

Who to screen?

OSTEOPOROSIS CANADA



Age 70+
Age 65-69 with 1 **risk factor**
Age 50-64 with previous # or
≥2 **risk factors**

Sign(s) of vertebral #

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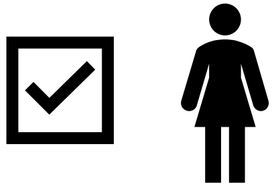
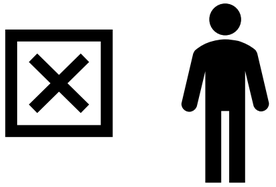


Females age 65+



Not enough evidence to support screening males

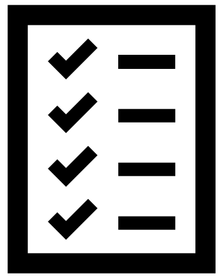
Risk Factors

Previous # after age 40	BMI <20
Glucocorticoids	Secondary osteoporosis
2+ falls in past year	Current smoking
Parent fractured hip	3+ drinks/day

Signs of vertebral

Prospective height loss ≥2cm
Historical height loss ≥6cm
Rib –to-pelvis distance ≤2 fingerbreadths
Occiput-to-wall >5cm

Screening tools



FRAX

BMD

FRAX

Please answer the questions below to calculate the ten year probability of fracture with BMD.

Country: Canada Name/ID: About the risk factors

Questionnaire:

1. Age (between 40 and 90 years) or Date of Birth
   Age: Date of Birth: Y: M: D:
2. Sex ○ Male ○ Female
3. Weight (kg)
4. Height (cm)
5. Previous Fracture ◉ No ○ Yes
6. Parent Fractured Hip ◉ No ○ Yes
7. Current Smoking ◉ No ○ Yes
8. Glucocorticoids ◉ No ○ Yes
9. Rheumatoid arthritis ◉ No ○ Yes
10. Secondary osteoporosis ◉ No ○ Yes
11. Alcohol 3 or more units/day ◉ No ○ Yes
12. Femoral neck BMD (g/cm^2)

Select BMD

Clear Calculate

Weight Conversion

Pounds → kg

Convert

Height Conversion

Inches → cm

Convert

01457449

Individuals with fracture risk assessed since 1st June 2011

Outputs

Ten-year risk of:

- Major osteoporotic #
- Hip #

https://frax.shef.ac.uk/FRAX/

BMD

Outputs

T-scores at:
- Lumbar spine
- Femoral neck
- Total hip

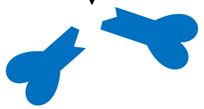
“Densitometric” osteoporosis = T-score ≤ -2.5

How to screen?

OSTEOPOROSIS CANADA

BMD

FRAX



Risk estimate

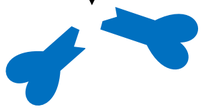
How to screen?

OSTEOPOROSIS CANADA

BMD

“BMD-first”

FRAX



Risk estimate

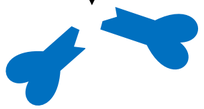
How to screen?

OSTEOPOROSIS CANADA

BMD

“BMD-first”

FRAX



Risk estimate

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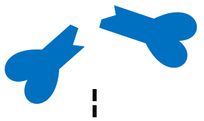
FRAX



Risk estimate

Maybe…

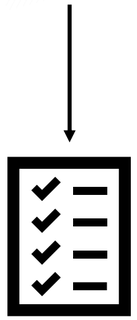
BMD

New risk estimate

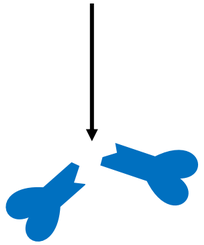
How to screen?

OSTEOPOROSIS CANADA

BMD



FRAX



Risk estimate

“BMD-first”

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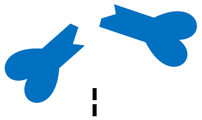
FRAX



Risk estimate

Maybe…

BMD

New risk estimate

“Risk assessment-first”

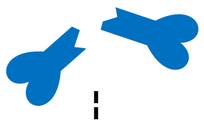
How to screen?

SOGC

Postmenopausal females 50-64

FRAX

“Risk assessment-first”



Risk estimate

Maybe…

BMD

New risk estimate

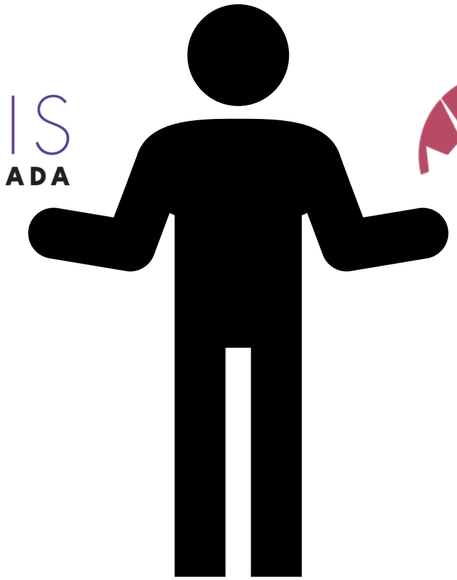
65+

BMD and FRAX

Which approach is best?

SOGC

OSTEOPOROSIS CANADA



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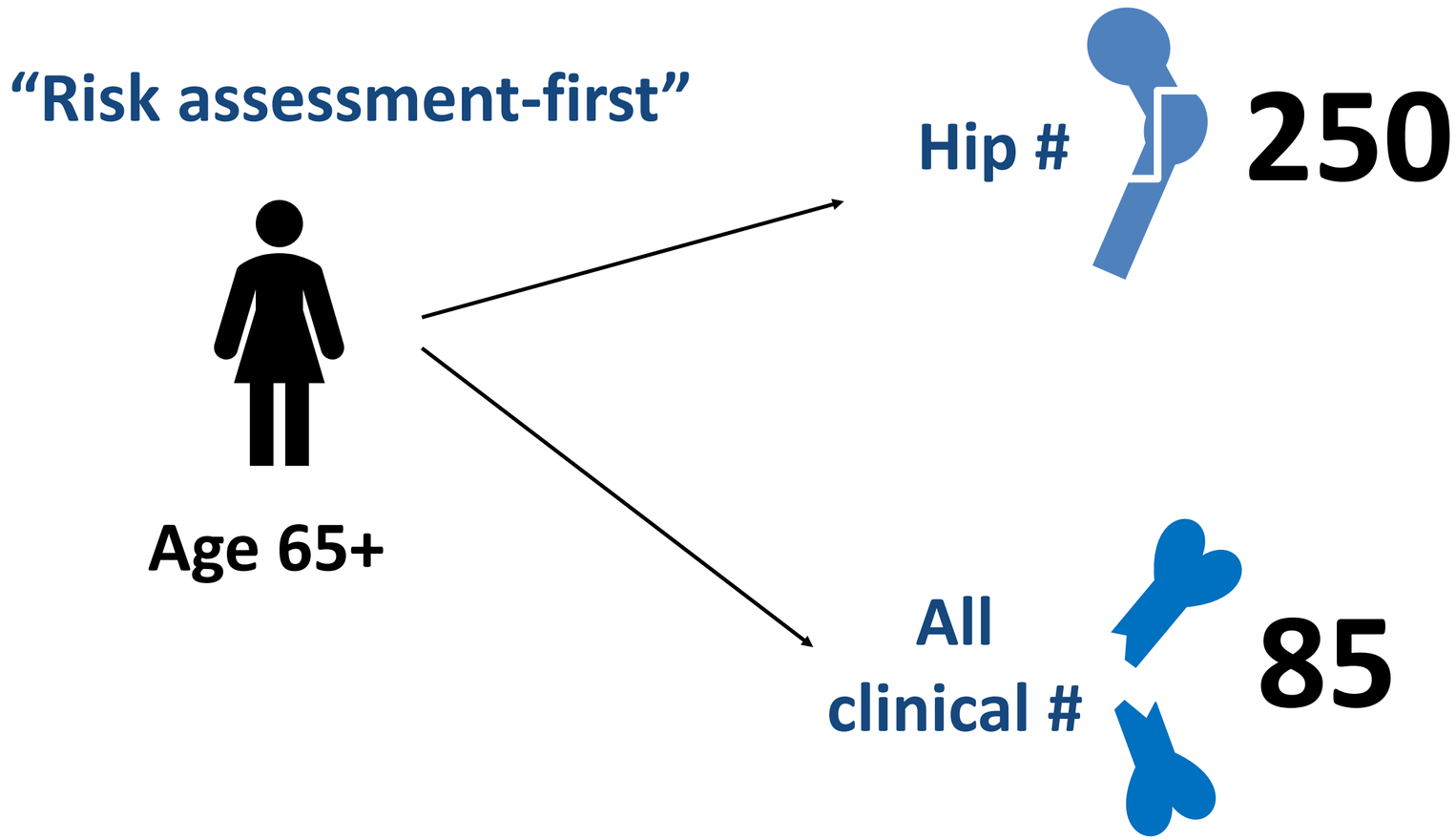
Number needed to screen (NNS)



4 fewer hip fractures and 11.8 fewer clinical fragility fractures per 1000 screened.

Back to the case

Roxanne is 70 and has one risk factor for fracture (parent fractured a hip).

She meets screening criteria by all three guidelines.

FRAX (without BMD) done in the clinic

Questionnaire

1. Age (between 40 and 90 years)	70
2. Sex	Female / Male
3. Weight	kg 71 — kg / cm
4. Height	cm 160
5. Previous Fracture	X
6. Parent Fractured Hip	✓
7. Current smoking	X
8. Glucocorticoids	X
9. Rheumatoid arthritis	X
10. Secondary osteoporosis	X
11. Alcohol 3 or more units/day	X
12. Femoral neck BMD	Select BMD

Calculate | Clear

Age : 70 BMI : 27.7 without BMD

THE TEN-YEAR PROBABILITY OF FRACTURE

Major osteoporotic	15 %
Hip Fracture	3.9 %

Adjust your results, try FRAXplus®

What does FRAXplus® do ? Click here

Ten-year # risk (%)

Major Osteoporotic #: 15%

Hip #: 3.9%

CTF decision aid utilized

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Home | Risk Factors | Benefits & Harms | About | Resources | EN

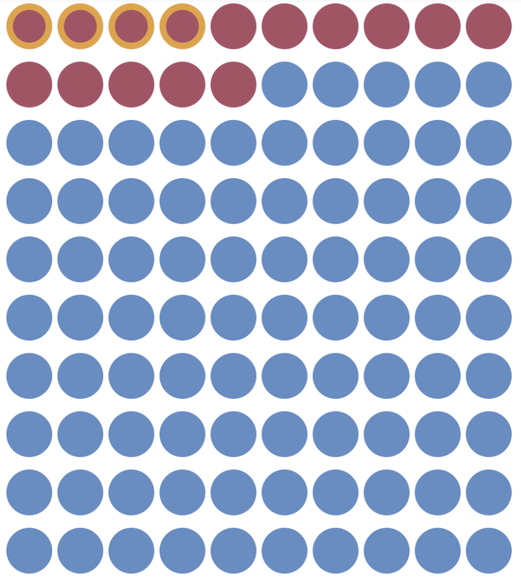
Choose an option:

Risk Info | FRAX Score

Age *	70
Sex *	Female
Weight (kg) *	71
Height (cm) *	160
Previous Fracture *	NO / YES
Parent Fractured Hip *	NO / YES
Current Smoker *	NO / YES
Glucocorticoids *	NO / YES
Rheumatoid Arthritis *	NO / YES
Secondary osteoporosis *	NO / YES
Alcohol 3 or more units/day *	NO / YES

Femoral Neck BMD (T-score or g/cm^2) (if available)

BMD is **NOT required** for initial risk assessment



Data underpinning the Canadian FRAX algorithm is limited for some racial and ethnic groups and should be interpreted cautiously.

Information in this section is only about pharmacological options.

Bisphosphonates: NO | YES

Out of 100 people like you, over the next 10 years:

- 85 people will **not** sustain a fracture
- 15 people will sustain a **fragility fracture**
- 4 people will sustain a **hip fracture**

https://frax.canadiantaskforce.ca/

Roxanne gets a BMD

T-scores

Lumbar spine: -2.5
Femoral neck: -1.9
Total hip: -2.3

FRAX (with BMD) repeated in the clinic

Questionnaire

1. Age (between 40 and 90 years): 70
2. Sex: Female / Male
3. Weight: kg 71 (kg / cm)
4. Height: cm 160
5. Previous Fracture: X
6. Parent Fractured Hip: ✓
7. Current smoking: X
8. Glucocorticoids: X
9. Rheumatoid arthritis: X
10. Secondary osteoporosis: X
11. Alcohol 3 or more units/day: X
12. Femoral neck BMD: T-score -1.9

Calculate | Clear

Age : 70 BMI : 27.7 with BMD

THE TEN-YEAR PROBABILITY OF FRACTURE

Major osteoporotic	16 %
Hip Fracture	3.9 %

Adjust your results, try FRAXplus®

What does FRAXplus® do ? Click here

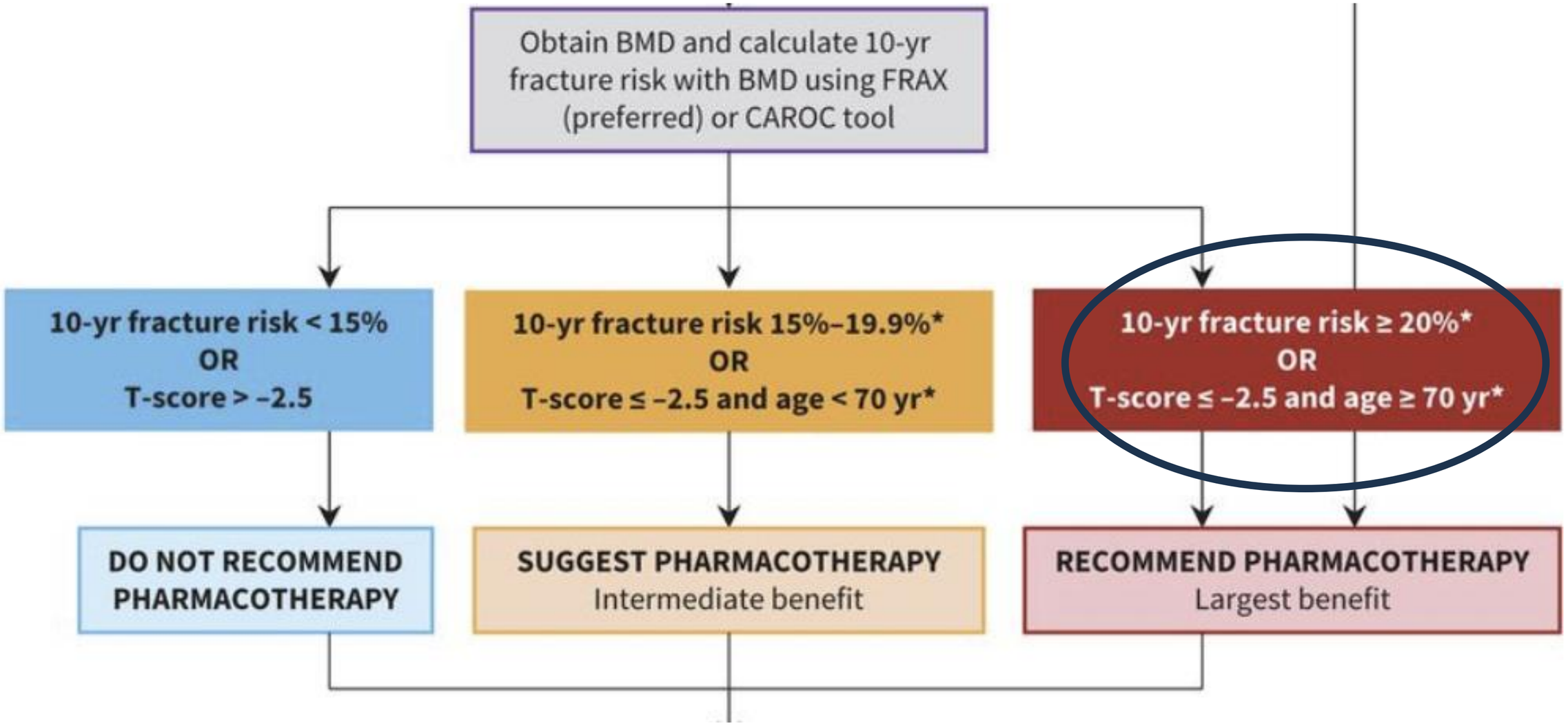
Ten-year # risk (%)

Major Osteoporotic #: 16%

Hip #: 3.9%

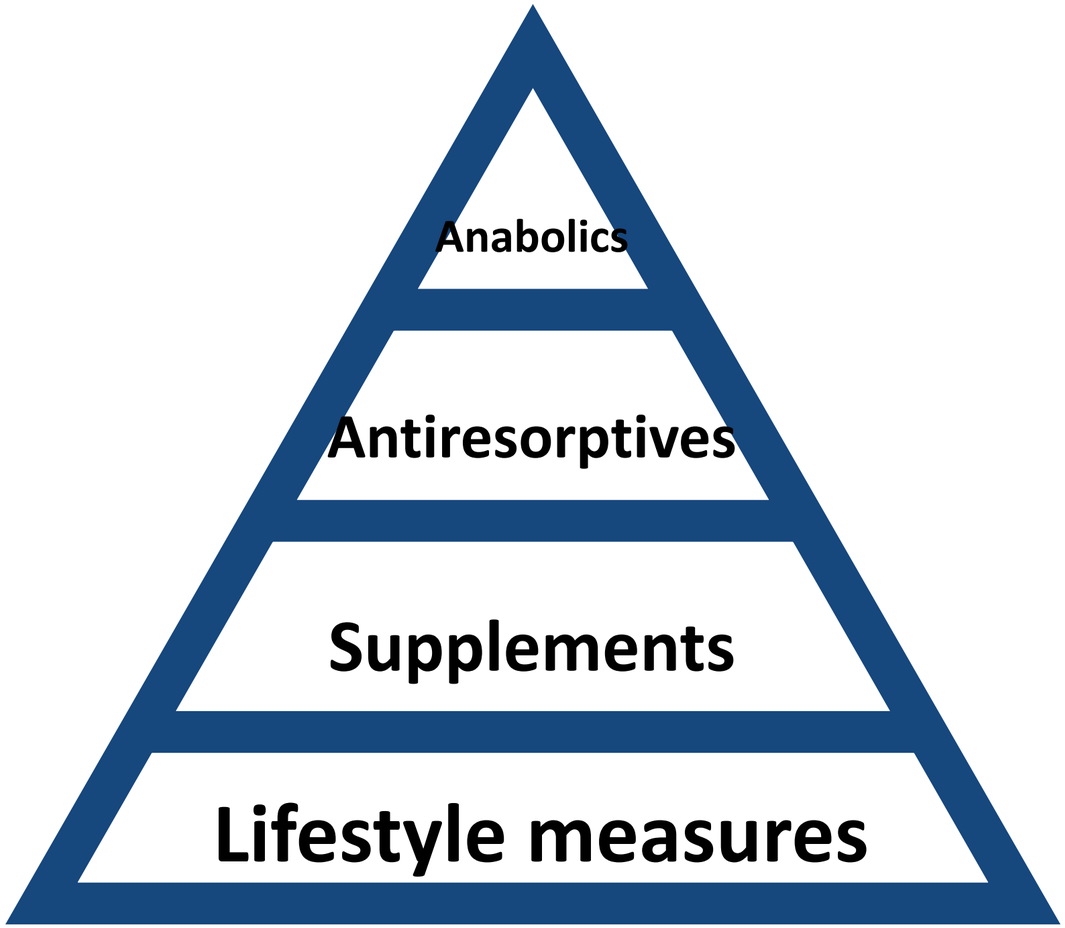
What now?

Roxanne is interested in lowering her fracture risk and wonders what she can do.

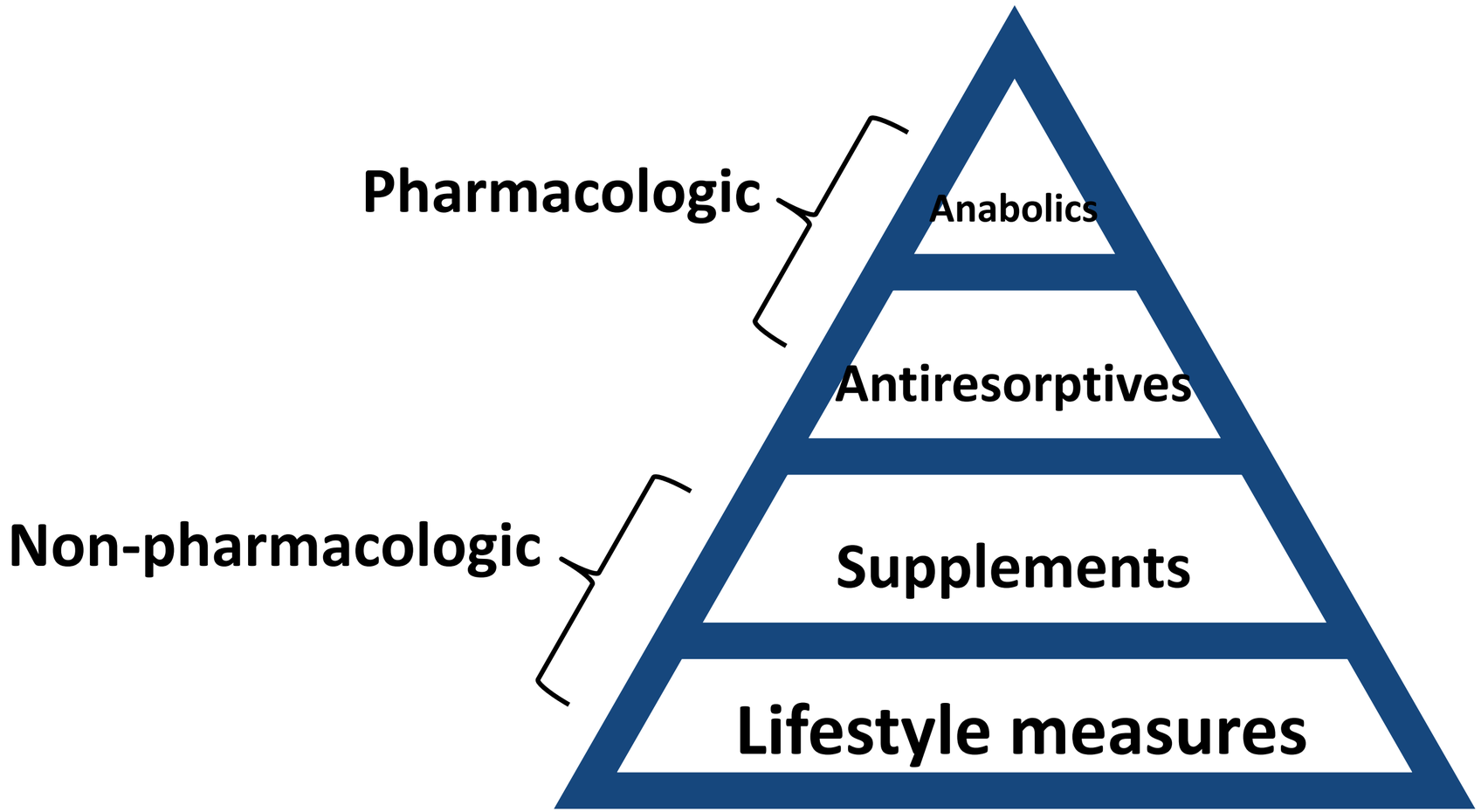

Obtain BMD and calculate 10-yr fracture risk with BMD using FRAX (preferred) or CAROC tool
10-yr fracture risk < 15% OR T-score > –2.5
10-yr fracture risk 15%–19.9%* OR T-score ≤ –2.5 and age < 70 yr*
10-yr fracture risk ≥ 20%* OR T-score ≤ –2.5 and age ≥ 70 yr*
DO NOT RECOMMEND PHARMACOTHERAPY
SUGGEST PHARMACOTHERAPY Intermediate benefit
RECOMMEND PHARMACOTHERAPY Largest benefit

STRATEGIES TO REDUCE FRACTURE RISK

Strategies to reduce fracture risk



Strategies to reduce fracture risk



Pharmacotherapy: Anabolic

Name	Mechanism	Administration	Duration
Teriparatide (Forteo)	Anabolic (PTH analogue) Induces bone formation	SC injection, daily	2 years
Romosozumab (Evenity)	Anabolic (sclerostin inhibitor) Sclerostin is an inhibitor of bone formation, so by blocking it, romosozumab increases bone formation and decreases bone resorption.	SC injection, monthly	1 year

Need to follow anabolic therapy with anti-resorptives to preserve bone gains.

Pharmacotherapy: Antiresorptive

Name	Mechanism	Administration	Duration
Alendronate (Fosamax) **Risedronate** (Actonel)	Antiresorptive (bisphosphonate)	Oral pill, weekly	3-6 years
Zoledronate (Aclasta)	Antiresorptive (bisphosphonate)	IV infusion, usually yearly	3-6 years
Denosumab (Prolia)	Antiresorptive (RANK-ligand inhibitor) Disrupts osteoclast formation.	SC injection, every 6 months	Unclear, often 6-10 years


DG
Menti
Osteoporosis
Choose a slide to present
How would you screen Roxanne for risk of fragility fractures?
0
BMD
0
FRAX
0
CBT
0
Clinical Assessment
0
None of the above
How much are medications expected to lower Roxanne's fracture risk?
0
25%
0
40%
0
50%
0
75%

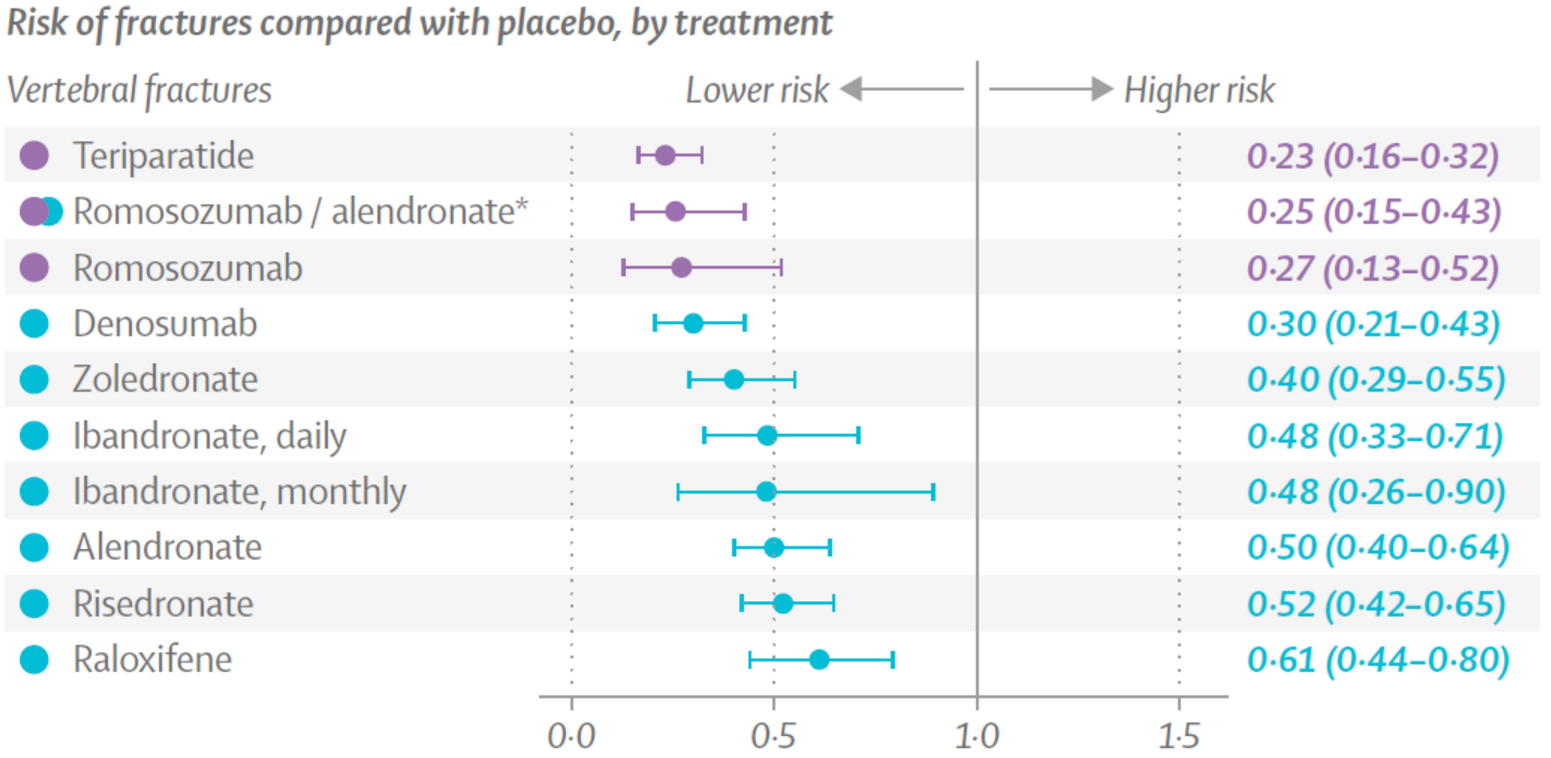
Pharmacotherapy: Risk Reduction

Vertebral: 50%

Anabolics:
70-80%

Injectable Antiresorptives:
60-70%

Oral Antiresorptives:
40-50%



Reid & Billington. Lancet, 2022.

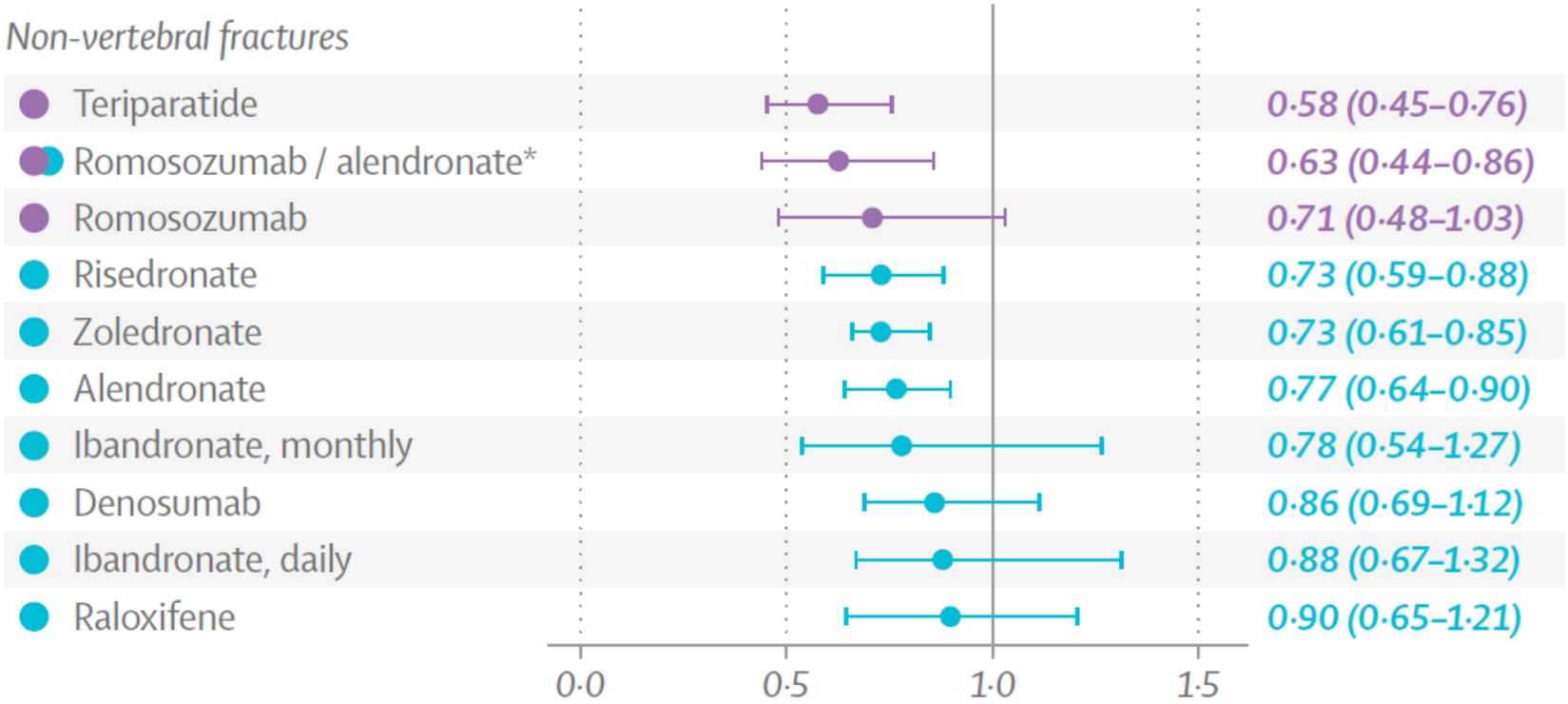
Pharmacotherapy: Risk Reduction

Non-vertebral: 25-40%

Anabolics:
30-40%

Antiresorptives:
10-30%

(Hip: 30-40%)

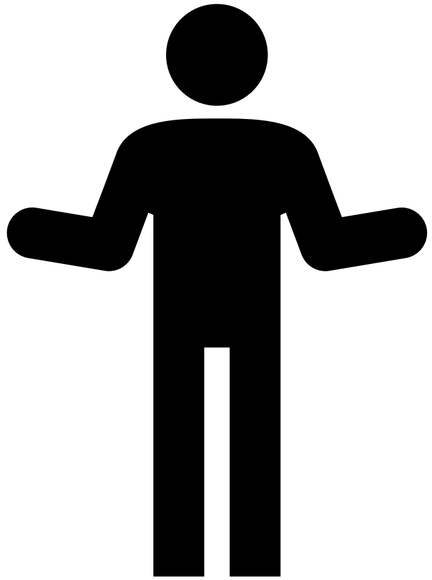


Reid & Billington. Lancet, 2022.

What number should we tell patients?

Mayo clinic decision aid:
40% RRR

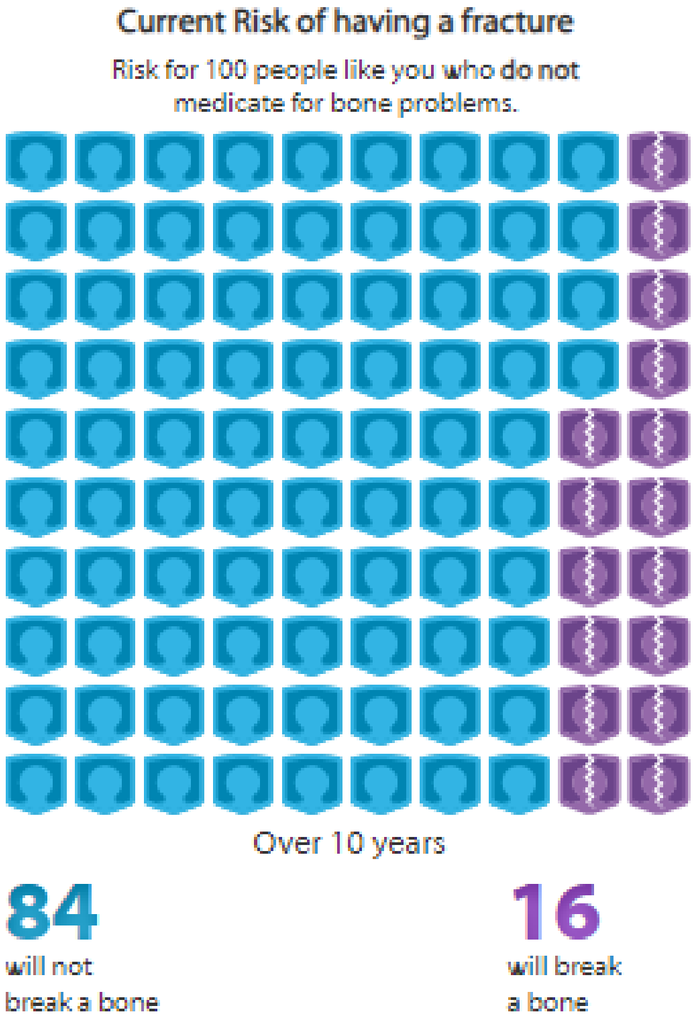
https://osteoporosisdecisionaid.mayoclinic.org/

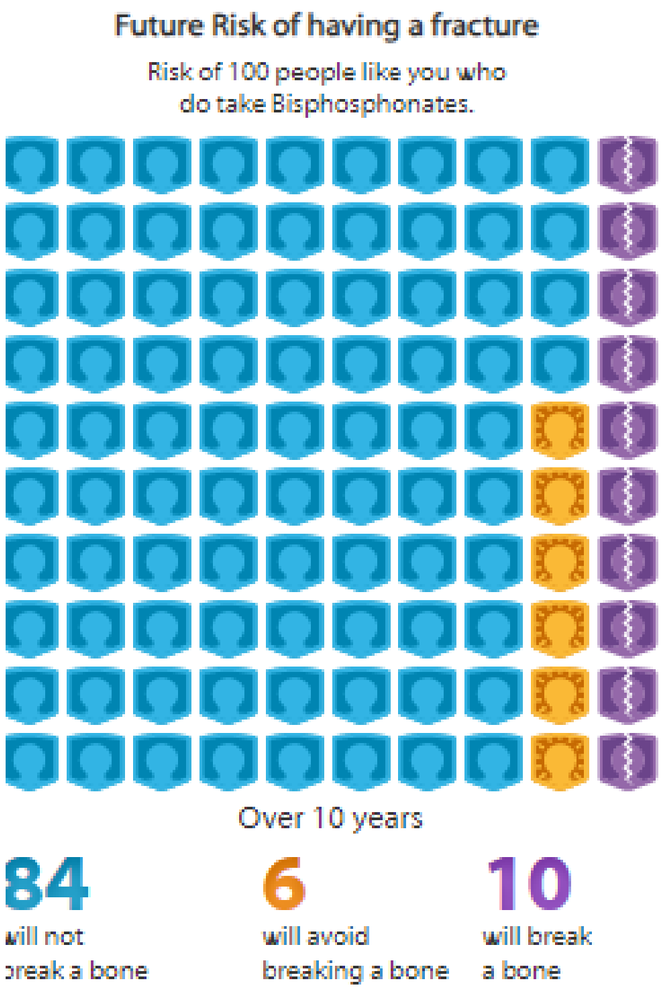


CTF decision aid:
25% RRR

https://frax.canadiantaskforce.ca/

Mayo Clinic Decision Aid



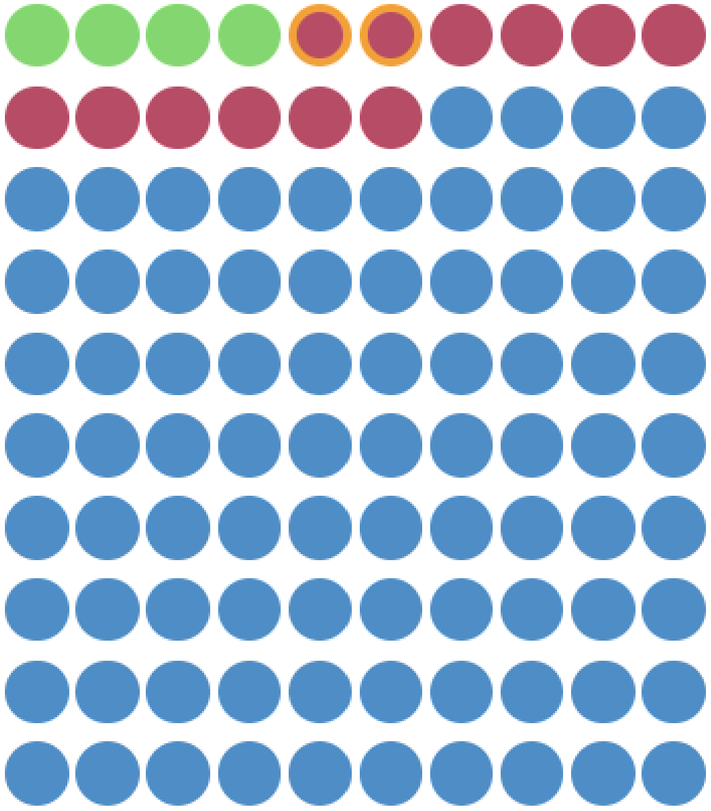


https://osteoporosisdecisionaid.mayoclinic.org/

CTF Decision Aid

Risk

Risk over 10 years



Out of 100 people like you, over the next 10 years:

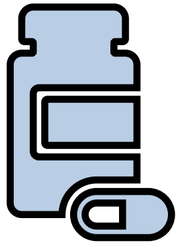
- 84 people will **not** sustain a fracture
- 4 people will **avoid** sustaining a fragility fracture
- 12 people will sustain a **fragility fracture**
- 2 people will sustain a **hip fracture**

https://frax.canadiantaskforce.ca/

Pharmacotherapy Duration

Name	Duration
Alendronate (Fosamax) **Risedronate** (Actonel)	3-6 years
Zoledronate (Aclasta)	3-6 years
Denosumab (Prolia)	Unclear, often 6-10 years
Teriparatide (Forteo)	2 years
Romosozumab (Evenity)	1 year

Pharmacotherapy: Side effects



Alendronate
Risedronate
GI intolerance
(10-20%)

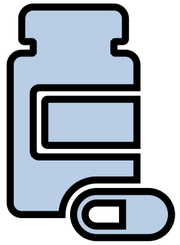
Zoledronate
Acute phase response
(30-40%)
Hypocalcemia
Renal dysfunction
?A fib

Denosumab
Hypocalcemia
Infection
Rebound vertebral fractures

Teriparatide
Hypercalcemia
Nausea, headache, arthralgias/myalgias
(~10%)

Romosozumab
?Cardiovascular events

Pharmacotherapy: Side effects



Alendronate
Risedronate
GI intolerance
(10-20%)

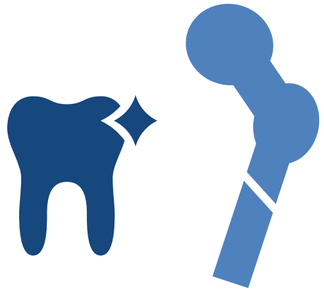
Zoledronate
Acute phase response
(30-40%)
Hypocalcemia
Renal dysfunction
?A fib

Denosumab
Hypocalcemia
Infection
Rebound vertebral fractures

Teriparatide
Hypercalcemia
Nausea, headache, arthralgias/myalgias
(~10%)

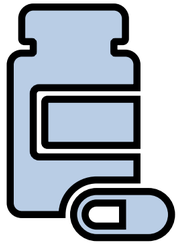
Romosozumab
?Cardiovascular events

Osteonecrosis of the jaw (ONJ)
< 1:10,000



Atypical femur fracture (AFF)
< 1:1000
Duration-dependent

Pharmacotherapy: Side effects



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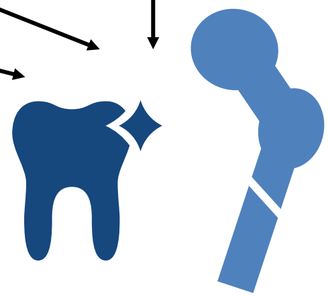
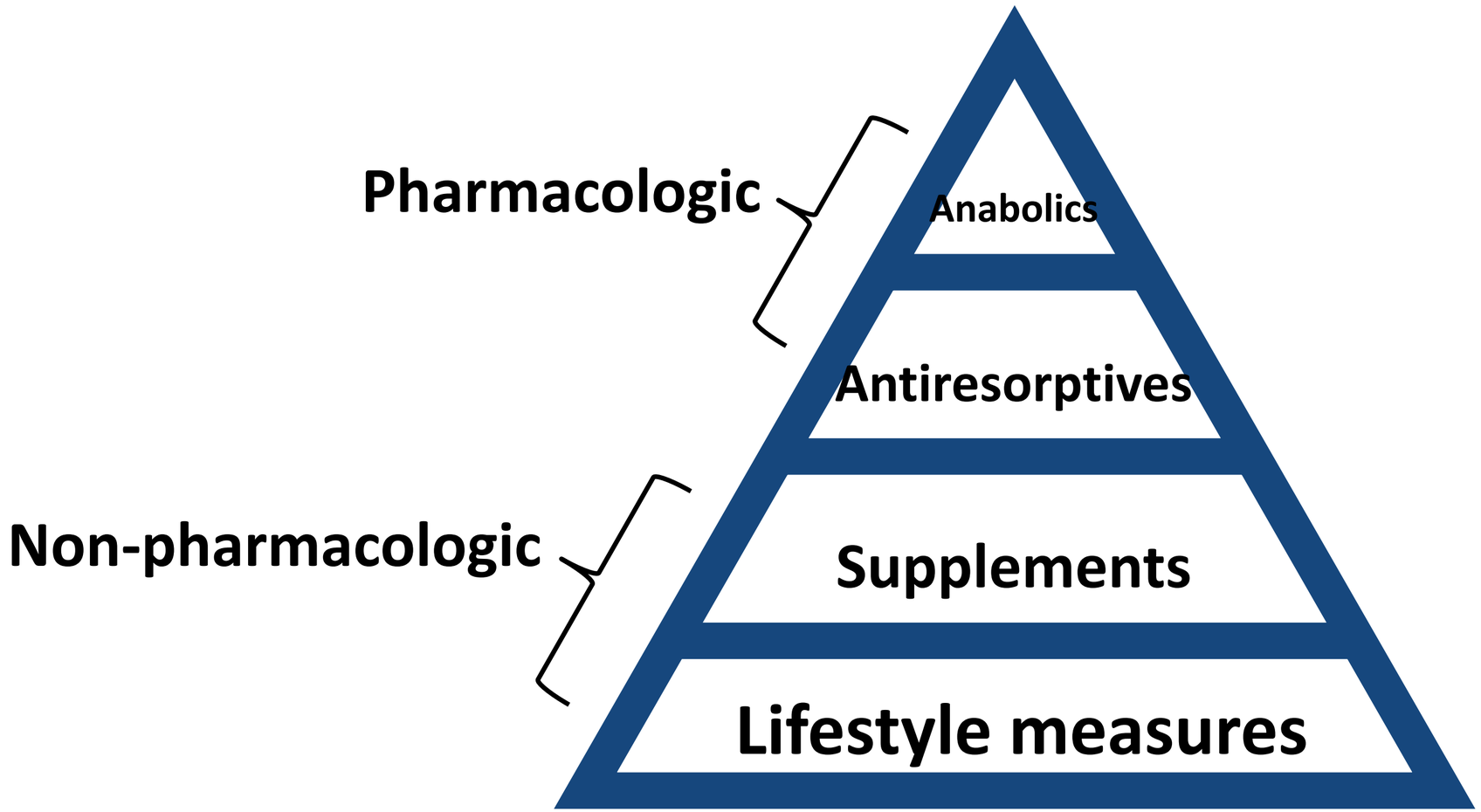
?



Osteonecrosis of the jaw (ONJ)
< 1:10,000

Atypical femur fracture (AFF)
< 1:1000
Duration-dependent
Risk higher in Asian women

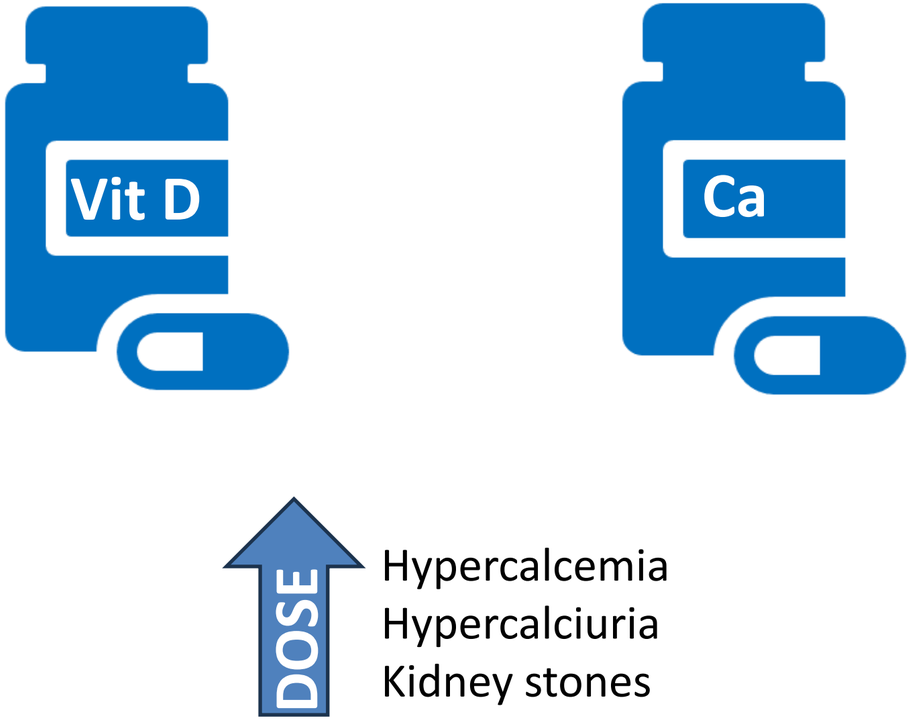
Strategies to reduce fracture risk



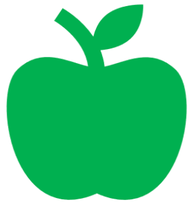
Supplements: Risk Reduction

- No compelling evidence for fracture risk reduction with dietary supplements
- **Most enthusiastic estimate for vitamin D + calcium: 10-15%**
- Benefit likely limited to those who are deficient

Supplements: Adverse Effects



Lifestyle Measures



Well-balanced diet

Smoking cessation
Alcohol moderation

Exercise
Falls prevention

Nutrition

Roxanne reports living alone and limited meal preparation.

- One-third of adults age 65 and older are at nutritional risk.
- Under-nutrition risk factors include social isolation and female sex.

Nutrition considerations

Eating well for bone health guidelines

Eating a well-balanced diet

½ meal vegetables or fruit
¼ protein sources
¼ whole grains

Getting enough calcium & protein

1200 mg/day; 20-30g/meal

Limiting caffeine & sodium

Less than 400mg caffeine/d
Less than 2300 mg sodium/d

Strategy:

- "Food-first" approach
- Supplements fill in gaps
- Start with one meal or snack at a time to make sustainable changes

Limiting unhealthy habits

Avoid smoking

Reduce alcohol consumption
to no more than 2 drinks/day

Exercise considerations

OSTEOPOROSIS CANADA

Balance & Functional Training

2+ days/week

Progressive Resistance Training

2+ days/week

Other Activities

Should be encouraged

Cardio 150 min/week

Balance

Shifting body weight to the limits of stability,

- Reacting to things that upset one's balance (e.g., catching and throwing a ball),
- Maintaining balance while moving (e.g., Tai chi, heel raises, agility training), and
- Reducing base of support (e.g., standing on one foot).

Functional exercises improve ability to perform everyday tasks, or do activities for fun or fitness (e.g., chair stands for sit-to-stand ability, stair-climbing to train for hiking).

Resistance training involves exercises in which major muscle groups (e.g., upper and lower extremities, chest, shoulders, back) work against resistance (e.g., squats, lunges and push-ups). Increase volume (e.g., sets, reps, weight), frequency or difficulty to achieve progressive overload. Many resistance training exercises would be considered functional exercises.

Exercise considerations

OSTEOPOROSIS CANADA

Balance & Functional Training

2+ days/week

Progressive Resistance Training

2+ days/week

Other Activities

Should be encouraged

Cardio 150 min/week

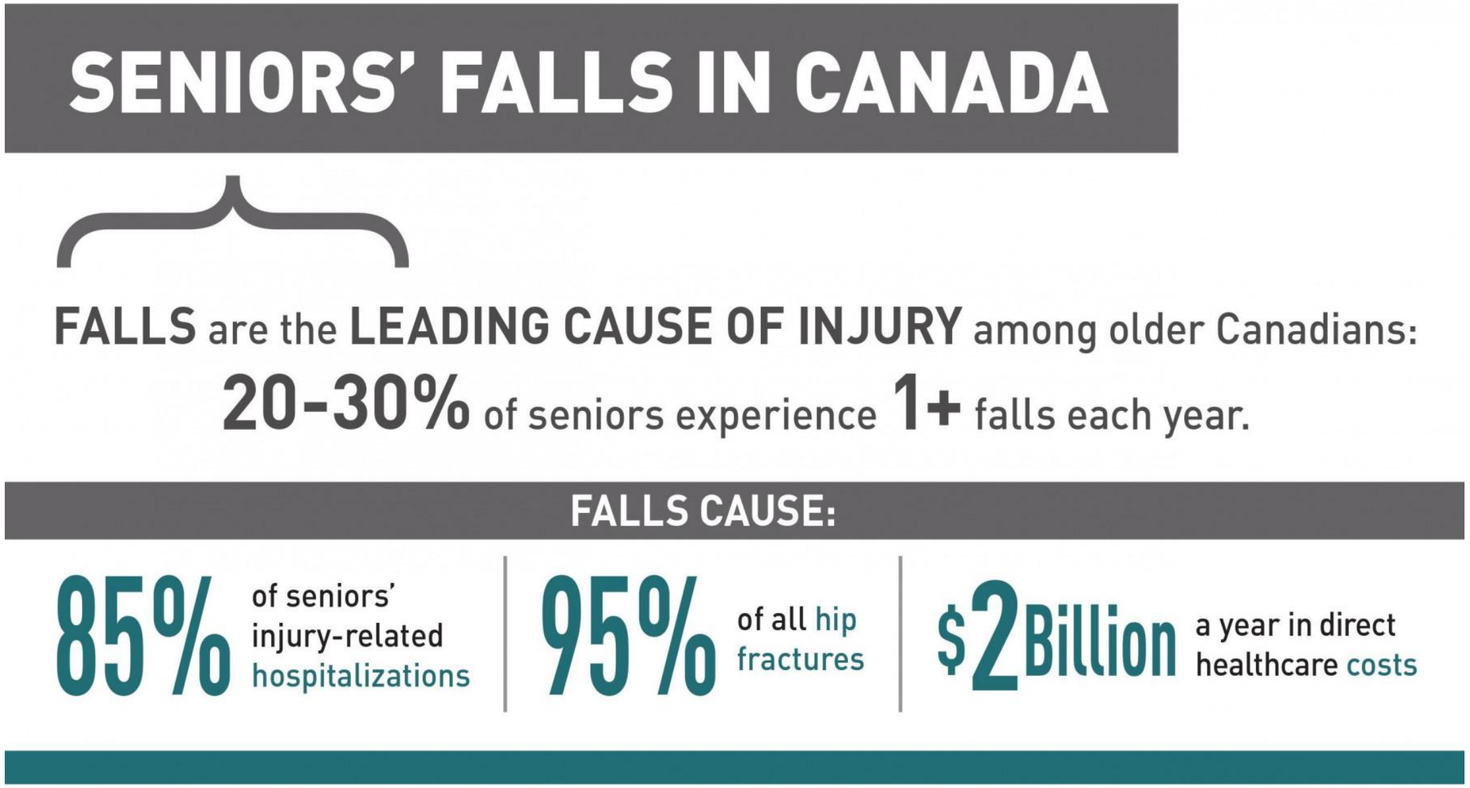
May need to modify activities that involve rapid, sustained, end range-of-motion twisting or flexion of spine.

For patients with fractures/pain:

- Focus on form/alignment rather than intensity
- Perform exercises where spine is least loaded
- Seek PT/OT guidance

Falls prevention

- Previous falls are predictors of a future fall
- Falls account for
  - >80% of fractures in the elderly
  - 95% of all hip fractures
  - 45% of spine fractures
- Falls are preventable



Seniors' Falls in Canada - Infographic - Canada.ca

Fall Risk Assessment

Assessment Tool	Description	Fall Risk Indicators
Screening question	**“Have you had any falls in the last year?”**	Two or more falls within a year, frailty, loss of consciousness, inability to rise independently, or fall-related injury indicate higher fall risk.
One-Legged Stance Test	Assesses balance and postural control by timing how long an individual can stand on one leg without support.	Inability to stand on one leg for at least 10 seconds indicates impaired balance; less than 5 seconds suggests increased fall risk
30-Second Sit-to-Stand Test	Assesses functional lower limb strength and muscular endurance by recording the total number of full stands completed from a seated position within a 30-second timeframe.	Number of sit to stands below age- and sex-specific averages may indicate increased fall risk
Timed Up and Go Test (TUG)	Assesses functional mobility and balance by timing how long it takes an individual to rise from a chair, walk 3 meters, turn around, return, and sit back down.	Taking more than 12 seconds to complete the TUG test indicates increased fall risk; some studies propose a higher threshold of 15 seconds.

Multiple self reported and performance-based measures.

Roxanne’s falls risk screening

“Have you had any falls in the last year?”
She has had two prior falls in the past year

Unilateral stance time (assessed balance and postural control)
= 18 sec (Right) and 5.6 sec (Left)

30 second sit-to-stand test (assesses functional lower limb strength)
= 8

Roxanne’s falls risk screening

- **2 prior falls**
- **One-Legged Stance Time**

  < 10 seconds indicates impaired balance

  < 5 sec is associated with significant falls risk
- **Reduced lower extremity strength is associated with higher fall risk**
  - Below average number of stands for the patient’s age group indicates a higher risk of falls (see table).

30-Second Sit-to-Stand							
Age	**60-64**	**65-69**	**70-74**	**75-79**	**80-84**	**85-89**	**90-94**
Men	**14-19**	**12-18**	**12-17**	**11-17**	**10-15**	**8-14**	**7-12**
Women	**12-17**	**11-16**	**10-15**	**10-15**	**9-14**	**8-13**	**4-11**

Range of scores between 25-75 percentiles.

Exercise Resources

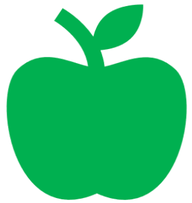
Osteoporosis Canada

- Exercise | Osteoporosis Canada
- OC-Too-Fit-To-Fracture-Osteo-Exercise-Book.pdf (osteoporosis.ca)

Find a BoneFit™ Provider

- Looking for A Bone Fit™ Trained Professional?

Lifestyle Measures: Risk Reduction



Well-balanced diet

No controlled studies

Smoking cessation
Alcohol moderation

No controlled studies

Exercise
Falls prevention

Possibly up to 50%... but limited fracture outcome trials

How does all of this apply to Roxanne?

If her current risk of major osteoporotic fracture is 16%, her estimated risk with each of these strategies would be…

Healthy diet = not known, but probably lower
Calcium and vitamin D (15% reduction) = 16 x 0.85 = 13.6%
Appropriate exercise (50% reduction) = 16 x 0.5 = 8%
Quitting smoking and moderating alcohol use = not known, but probably lower
With medication (40% reduction) = 16 x 0.60 = 9.6%

A combination of strategies = not known, but effects probably additive

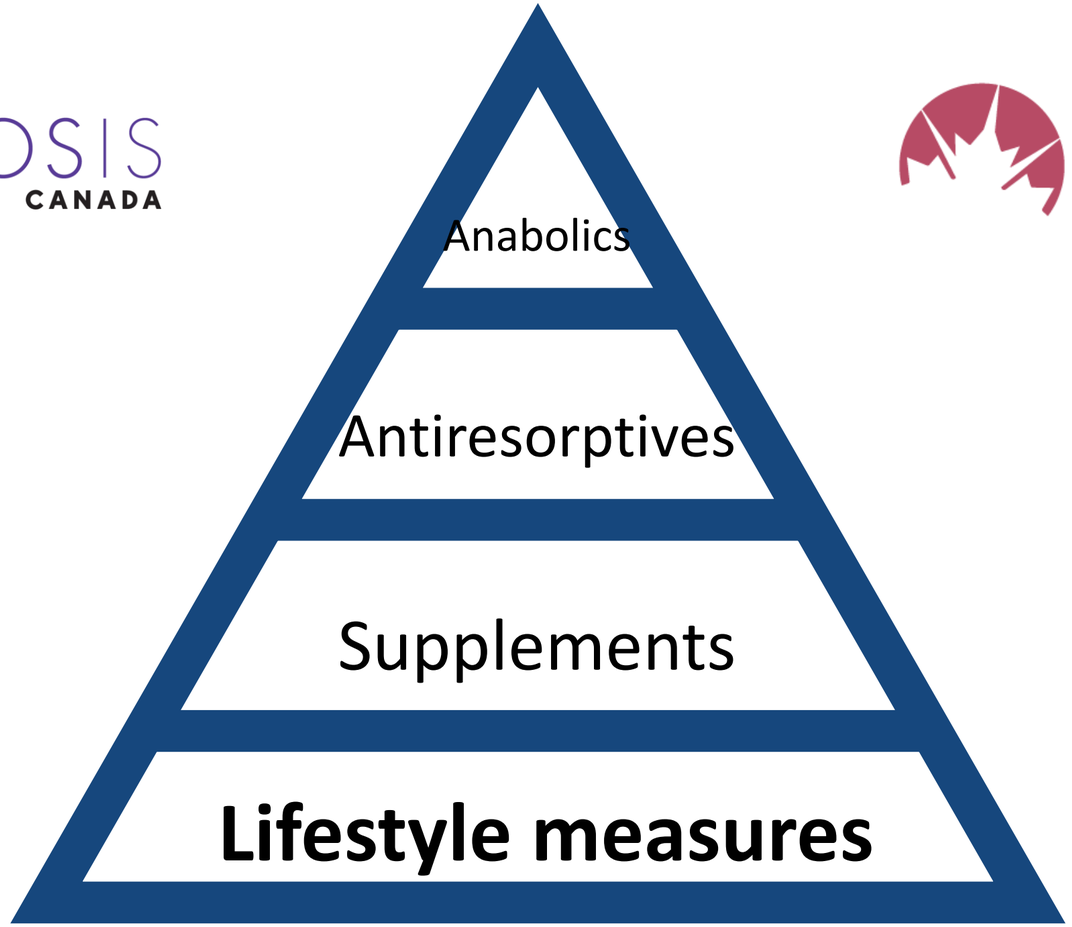
What now?

What should Roxanne do to lower her risk of fracture?

What do the guidelines say?

OSTEOPOROSIS CANADA

Canadian Task Force on Preventive Health Care



Recommend for everyone age 50+

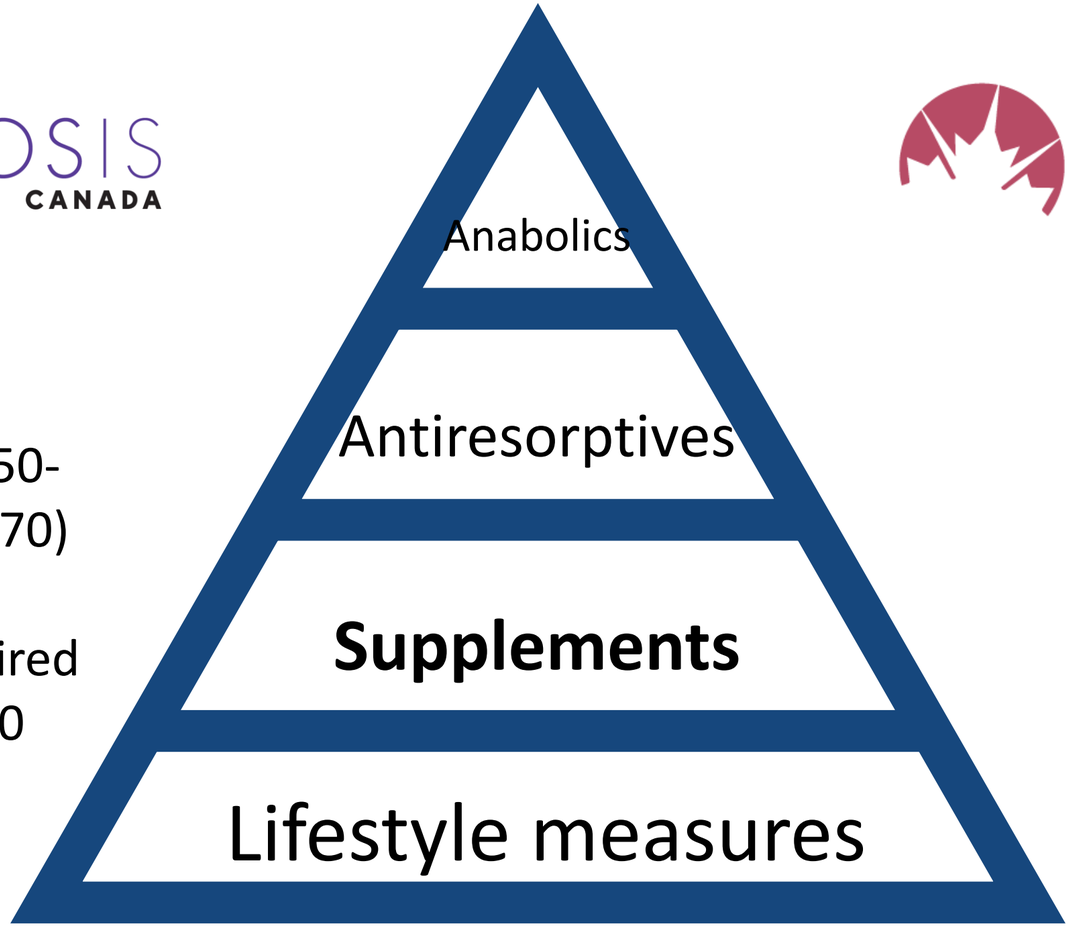
No comment

What do the guidelines say?

OSTEOPOROSIS CANADA

Vit D: 400 IU/d (age 50-70), 800 IU/day (age 70)

Calcium: only if required to obtain RDA of 1200 mg/day



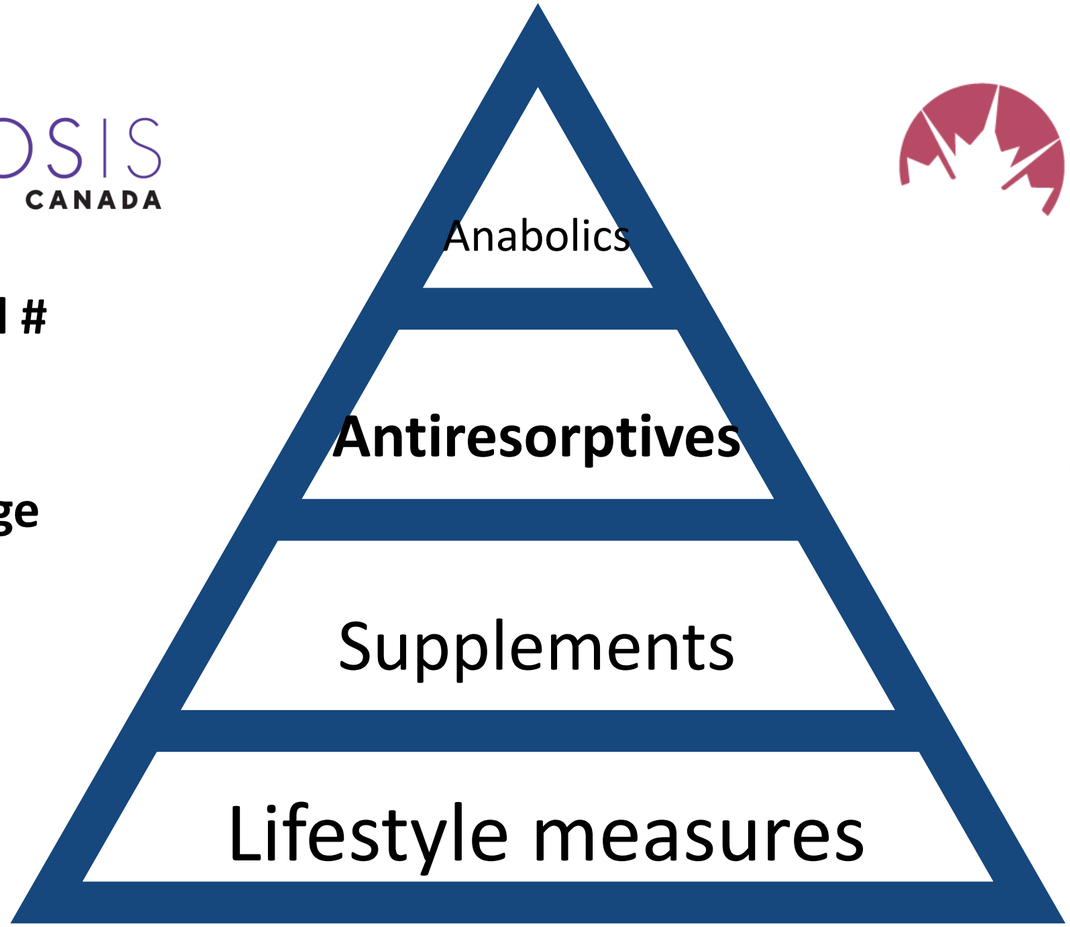
Canadian Task Force on Preventive Health Care

No comment

What do the guidelines say?

OSTEOPOROSIS CANADA

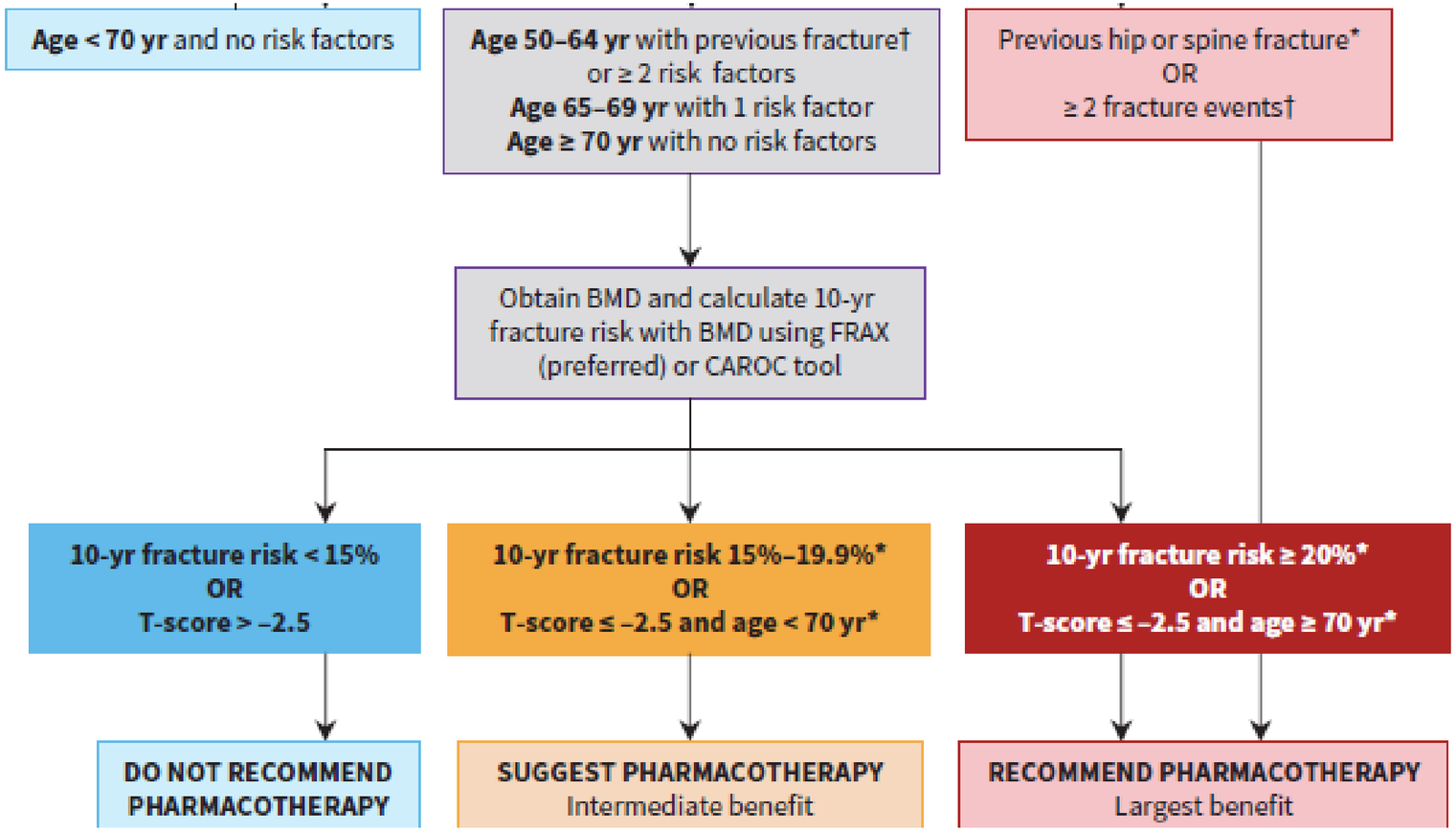
Prior hip or vertebral #
Multiple #s
FRAX ≥20%
T-score <=-2.5 and age 70+



Canadian Task Force on Preventive Health Care

Use shared decision-making

Osteoporosis Canada 2023 Guidelines



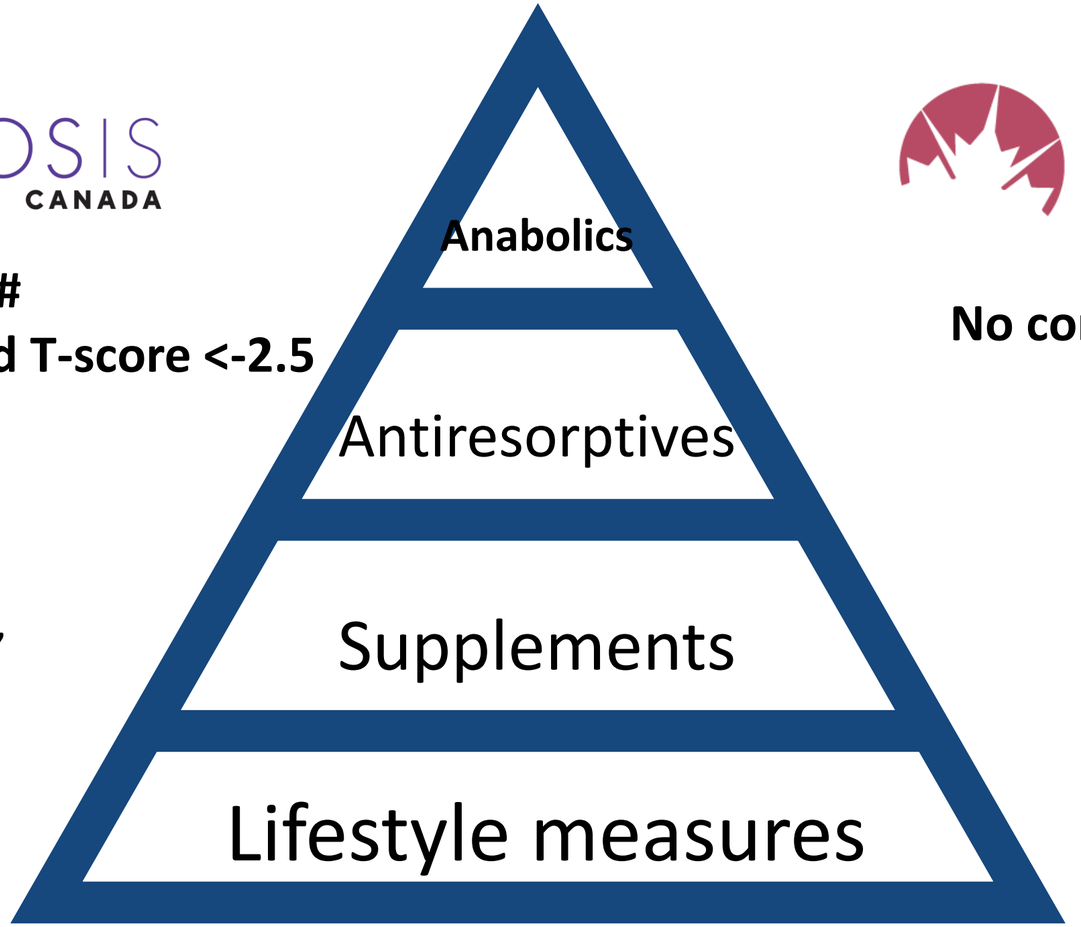
CMAJ 2023 October 10;195:E1333-48. doi: 10.1503/cmaj.221647

What do the guidelines say?

OSTEOPOROSIS CANADA

Recent severe vertebral #
Multiple vertebral #s and T-score <-2.5

Remark: “Recent fracture” is defined as a fracture occurring within the past 2 yr, and “severe vertebral fracture” as vertebral body height loss of > 40%.



Canadian Task Force on Preventive Health Care

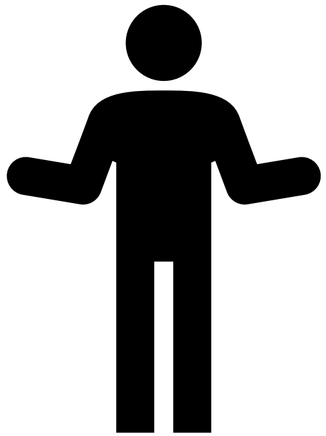
No comment

What do we tell patients?

OSTEOPOROSIS CANADA

Canadian Task Force on Preventive Health Care

Previous hip or vertebral #
Multiple fractures
FRAX ≥ 20%
T-score ≤-2.5 and age 70+



Shared decision-making

What do we tell patients?

OSTEOPOROSIS CANADA

Canadian Task Force on Preventive Health Care

Previous hip or vertebral #
Multiple fractures
FRAX ≥ 20%
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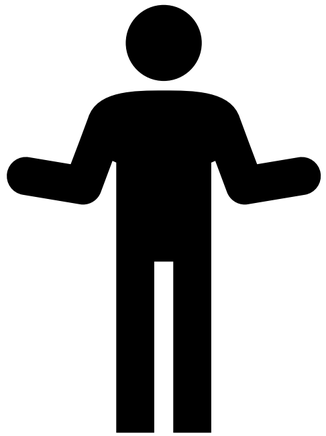


Shared decision-making

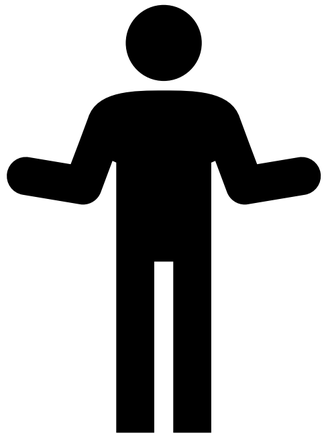
What about choice of medication?

OSTEOPOROSIS CANADA

First-line: alendronate, risedronate
IV zoledronate

Consider denosumab if: contraindications, substantial intolerance or barriers to bisphosphonates

Consider anabolics if: recent severe vertebral #, or multiple vertebral #s and T-score <-2.5



Canadian Task Force on Preventive Health Care

Shared decision-making

Back to Roxanne

- [x] Well-balanced diet with enough calcium and protein
- [x] Not smoking; <2 alcoholic drinks/day
- [x] Referred to Alberta Healthy Living Program for exercise assessment
- [x] Started on vitamin D3 400 IU/day
- [?] Pharmacotherapy?

Back to Roxanne

- [x] Well-balanced diet with enough calcium and protein
- [x] Not smoking; <2 alcoholic drinks/day
- [x] Referred to Alberta Healthy Living Program for exercise assessment
- [x] Started on vitamin D3 400 IU/day
- [?] Pharmacotherapy?

Meets T-score criteria (Osteoporosis Canada), but decision depends on her preferences and values!

Fork in the road

Option 1: Pharmacotherapy

- ☑ Well-balanced diet with enough calcium and protein
- ☑ Not smoking; <2 alcoholic drinks/day
- ☑ Referred to Alberta Healthy Living Program for exercise assessment
- ☑ Started on vitamin D3 800 IU/day
- ☑ **Alendronate 70 mg/week for 5 years**
  Risedronate 35 mg/week for 5 years
  Zoledronate 5 mg IV annually for 3 years

Option 2: No Pharmacotherapy

- [x] Well-balanced diet with enough calcium and protein
- [x] Not smoking; <2 alcoholic drinks/day
- [x] Referred for exercise assessment
- [x] Started on vitamin D3 800 IU/day
- [x] **No pharmacotherapy**

What now?

How should Roxanne be monitored?

MONITORING

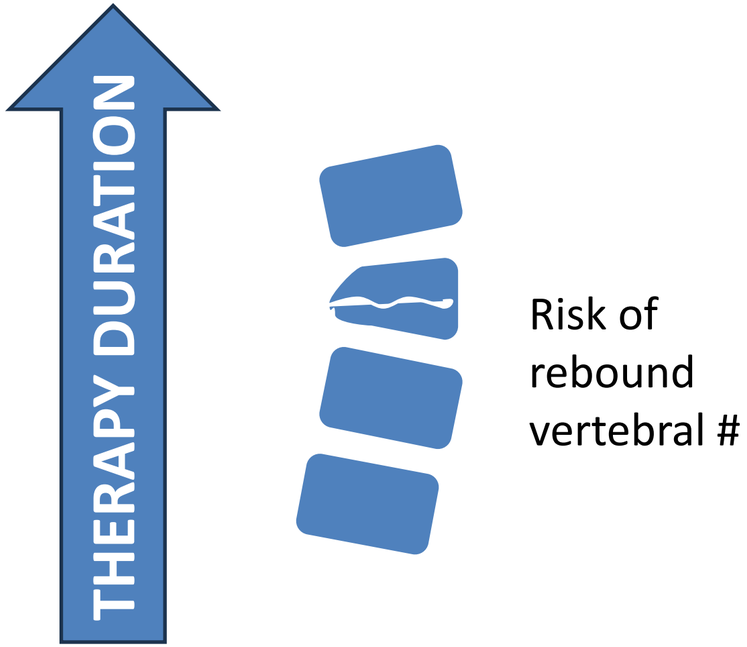
Option 1: Pharmacotherapy

Monitoring: BMD at end of treatment course
- Typically 5 years for oral agents, 3 for IV
- No strong evidence to repeat sooner

Consider treatment failure if:
- Declining BMD (>=5%)
- >1 new fracture on therapy

Long-term: Drug holiday of 2-5 years, at which time fracture risk assessment can be repeated and another treatment course considered

What if Roxanne started denosumab?



Risk of rebound vertebral fracture(s) when medication is stopped or delayed

- Do not go >7 months between doses
- Transition to a bisphosphonate for 1-2 years after treatment course
- Optimal duration of therapy unknown
- Have exit plan in mind before starting

Option 2: No pharmacotherapy

OSTEOPOROSIS CANADA

BMD testing can be repeated at:
- 5–10 yr if the risk of major osteoporotic # is < 10%
- 5 yr if the risk of major osteoporotic # is 10%–15%
- 3 yr if the risk of major osteoporotic fracture is > 15%

Canadian Task Force on Preventive Health Care

Rescreening within 8 years does not appear useful

Option 2: No pharmacotherapy

OSTEOPOROSIS CANADA

BMD testing can be repeated at:
- 5–10 yr if the risk of major osteoporotic # is < 10%
- 5 yr if the risk of major osteoporotic # is 10%–15%
- 3 yr if the risk of major osteoporotic fracture is > 15%

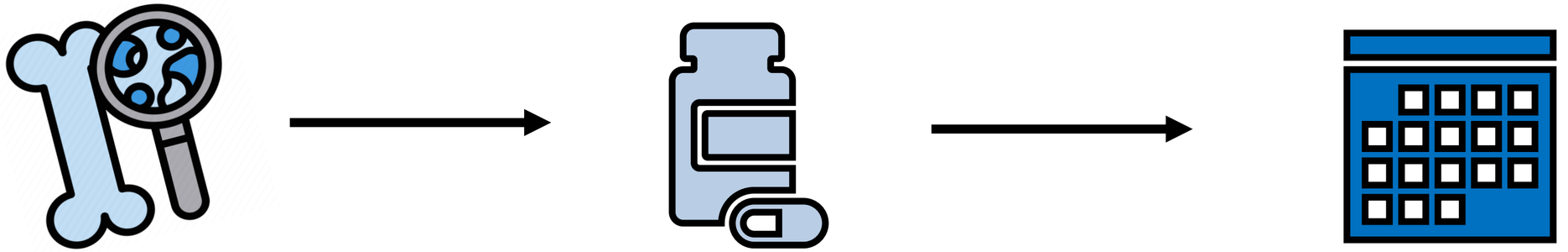
Canadian Task Force on Preventive Health Care

Rescreening within 8 years does not appear useful

Not before 3 years with either approach

Summary

Bone health considerations



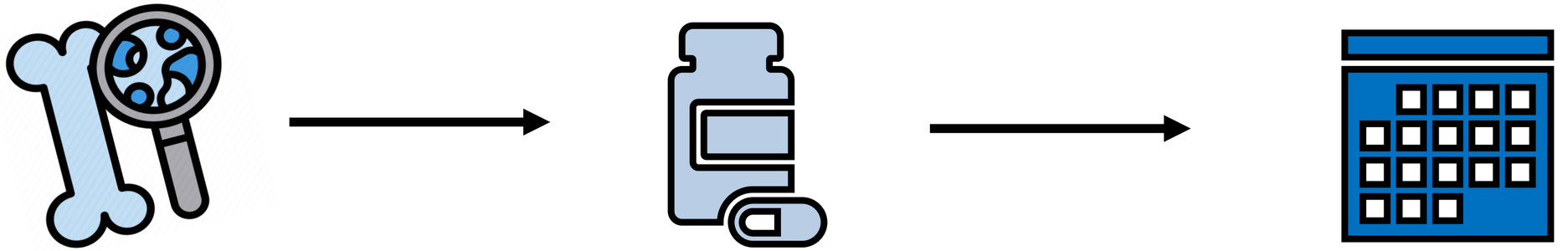
Risk Assessment (screening)

Treatment Decision

Monitoring

Summary

Bone health considerations



Risk Assessment (screening)

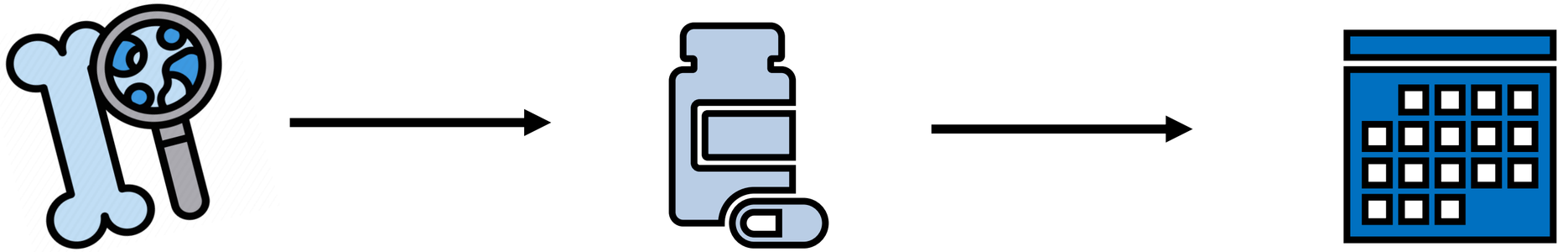
Consider starting with FRAX

Treatment Decision

Monitoring

Summary

Bone health considerations



Risk Assessment (screening)

Treatment Decision

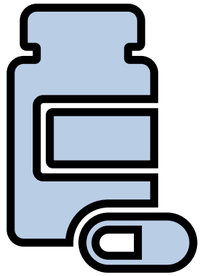
Monitoring

Lifestyle measures for everyone
Vitamin D 400-800 IU/day for most
Pharmacotherapy depending on fracture risk and patient preference

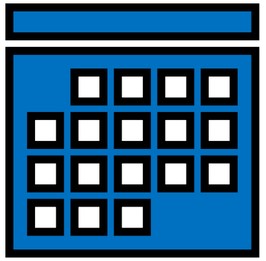
Summary

Bone health considerations

Risk Assessment
(screening)



Treatment
Decision



Monitoring

No need to repeat BMD for >3-5 years in most individuals, regardless of management plan

Limited evidence for duration of drug holidays

Key points

- Risk assessment first screening and application of FRAX is recommended for all females 65 and older.
- Fall risk should be incorporated in fracture risk assessment using self reported or performance-based measures.
- Recommend balance, functional, and resistance training ≥2x/week for all adults ≥50.
- Health care providers should recommend daily calcium and vitamin D intake per Health Canada guidelines, with a minimum 400 IU vitamin D supplement to support bone health.
- Pharmacotherapy is recommended for individuals with prior fractures, 10-year fracture risk ≥20%, or a T-score ≤−2.5 and age ≥70, guided by shared decision making and patient preference.

THANK YOU!

PLEASE FILL OUT YOUR SESSION EVALUATION NOW!

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LE COLLÈGE DES MÉDECINS DE FAMILLE DU CANADA

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