RECORDING OF SESSION TO BEGIN

Treatment Monitoring

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Project ECHO
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- Please use camera as much as possible
- Test both audio & video before joining
- Communicate clearly during session:
  - Can use “raise hand” feature to comment
  - Speak clearly
  - Use chat function for technical issues
- Didactic session will be recorded and shared following the session

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  - None

Objectives

-Determine how monitoring of treatment can be evaluated based on how the diagnosis was made.

-Distinguish between the different parameters that can be assessed.

-Differentiate between how the available medications respond to treatment.

Why was treatment initially started?

- T-score of -2.5 or less
- Fragility fracture
- High FRAX score

Favorable response to treatment

- Improvement over time greater than LSC (least significant change) based on DXA.
- No fractures, however, no treatment guarantees 100% no fractures.
- Bone turnover markers.

Least Significant change

Determined by each machine/site.

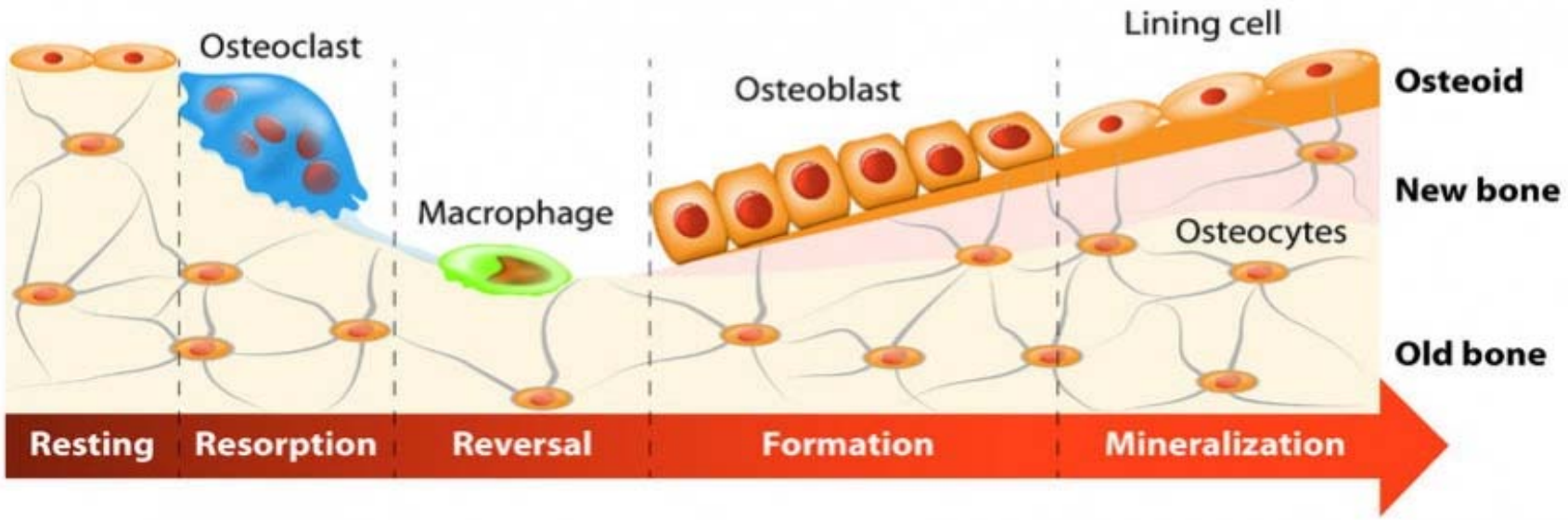
Preferably by each DXA tech also.

Site of Comparison	Least Significant Change (Precision at 95% confidence)
Bilateral Total Hip Mean	0.018
Total Hip Single Side	0.027
Bilateral Femoral Neck Mean	0.033
Femoral Neck Single Side	0.044
Lumbar Spine L1-L4	0.032
Lumbar Spine Fewer than 4 Vertebrae	0.037
Forearm, 1/3 Radius	0.037

DXA monitoring

- Per most guidelines, repeat DXA 1-2 years after starting treatment to assess for response. Can be performed less frequently afterwards.
- Preferably perform at same facility.
- Stable or increasing density with no evidence of new fractures is considered a positive response.

The bone remodelling process



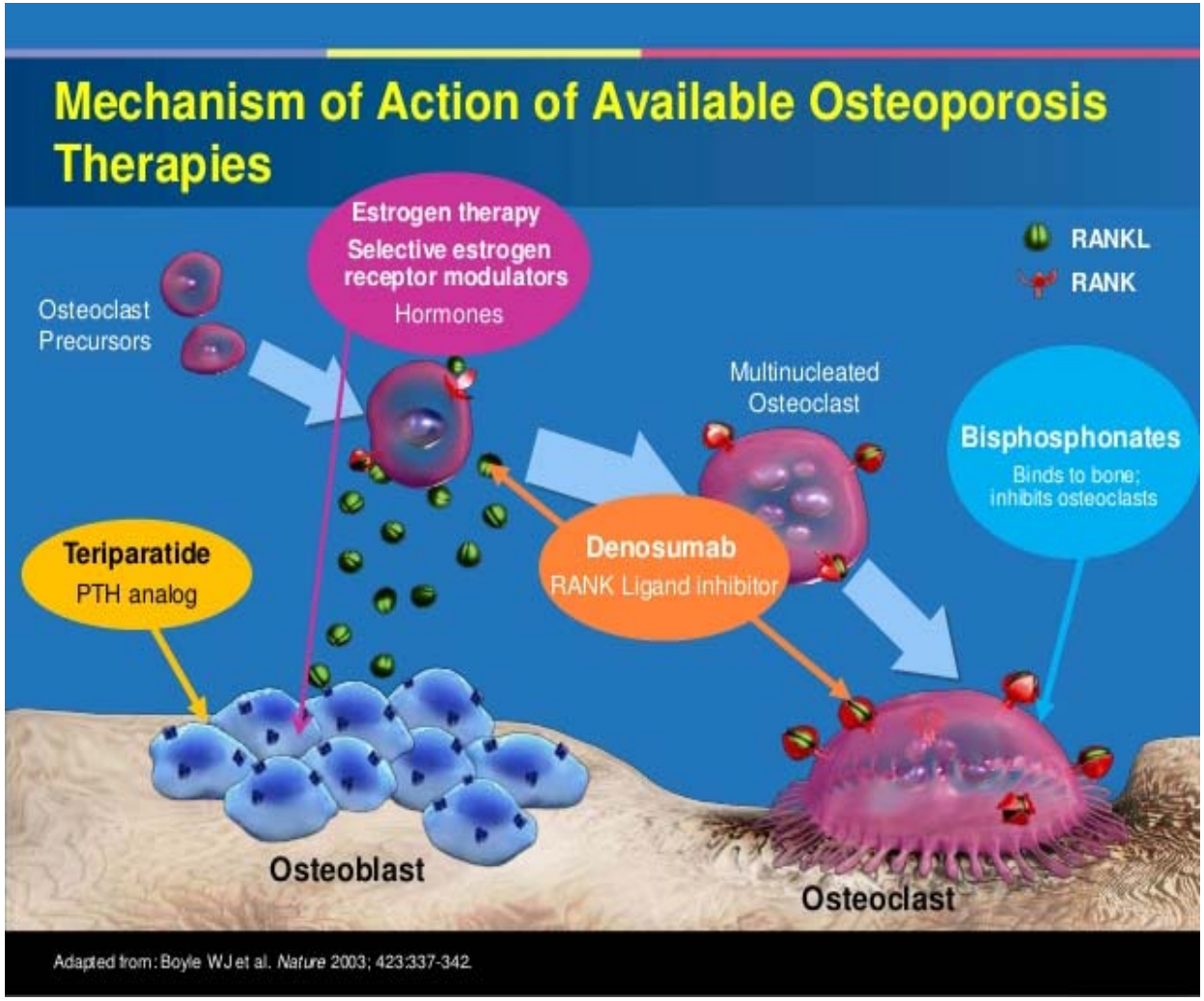
Medications to prevent bone loss and fracture

Bisphosphonates are first line treatment for most people.

Denosumab also works as an anti-resorptive medication

Anabolic agents build bone.

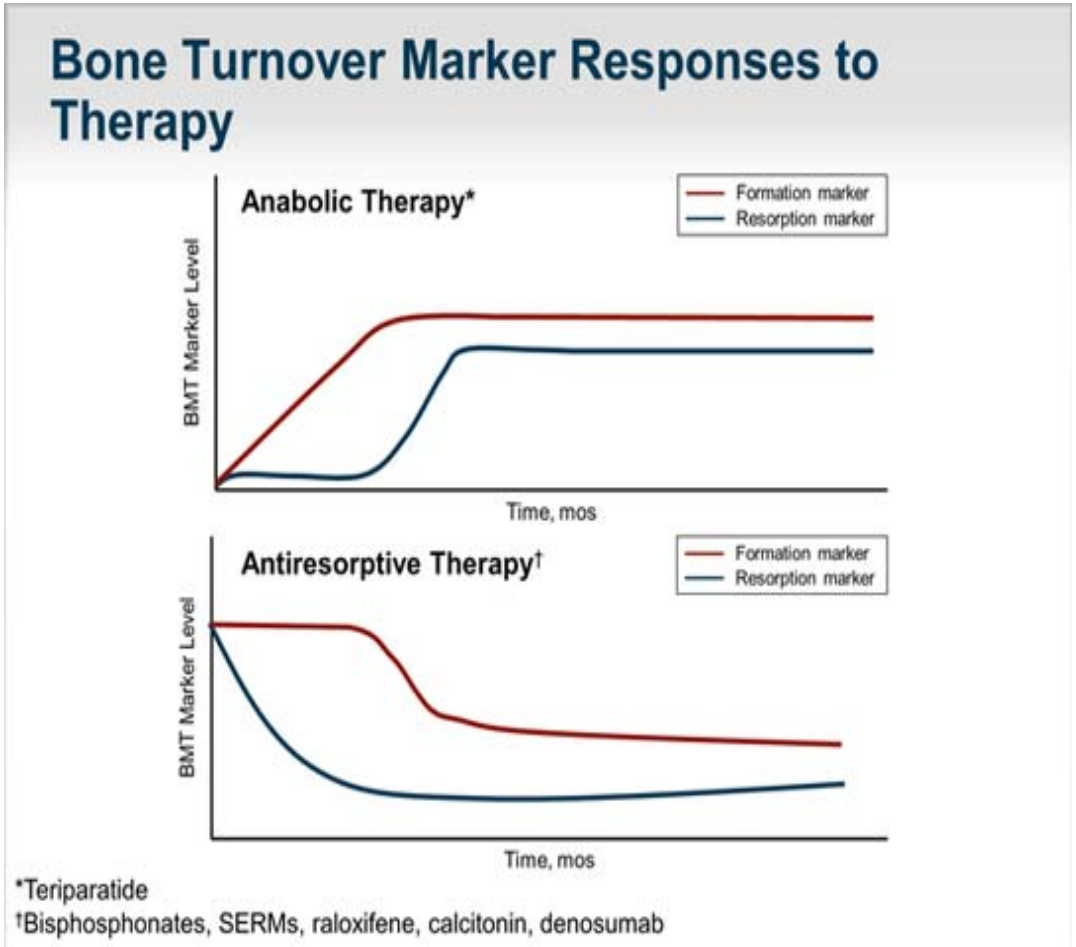
Important to consider for monitoring treatment and considering bone turnover markers.



Bone turnover markers

CTX is recommended for assessing bone resorption. Should decline with treatment.

PINP is recommended for assessing bone formation or growth. This should increase with anabolic treatments.



Can Treat to Target be used in Osteoporosis?

- Depends on what parameters are being assessed.
- Biggest concern is no fractures, again, no medication guarantees no fractures.
- Favorable DXA response ideal, particularly if considering a drug holiday at some point.

DXA as a surrogate marker

While a person may be responding biologically, they can still have very low BMD and a high risk for fracture.

The goal is to improve the selection of initial drug therapy based on severity, improve follow-up of patients on treatment and anticipate how to use newer treatments that have a very potent effect on BMD and perhaps greater reductions in risk.

Fracture protection should persist with stability. BP response tends to plateau. Unknown if changing to another med to increase BMD will translate into additional anti fracture efficacy.

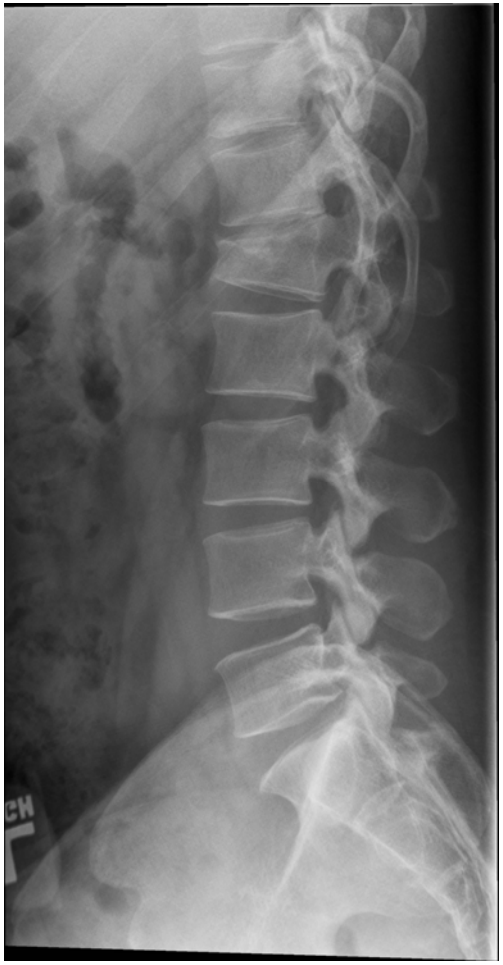
Recent Fracture

T-score target spoiler: a recent fracture increases future fracture risk regardless. Also many people fracture with normal BMD.

Combination therapy not generally indicated but can be in this situation.

Anabolic agents can help with healing, also used at times with spinal fusions.

Here a goal might be freedom from fractures for 3-5 years.



What to do if a fracture occurs on therapy and/or bone density declines?

- First assess if medication was being taken correctly/regularly if oral.
- Assess for any other underlying secondary cause for bone loss.
- Consider switching or adding on additional treatment if the patient is very high risk for fracture.
- In certain situations waiting to see what happens with next DXA is appropriate.

Issues with Prolia (denosumab)

Some people describe this therapy as indefinite (misleading).

Can be given up to 10 years, should not be stopped abruptly due to effects wearing off and risk for rebound fractures.

Optimal timing of switching to a bisphosphonate remains to be established.

The BP might not be fully incorporated into remodeling sites while remodeling is markedly reduced by denosumab.

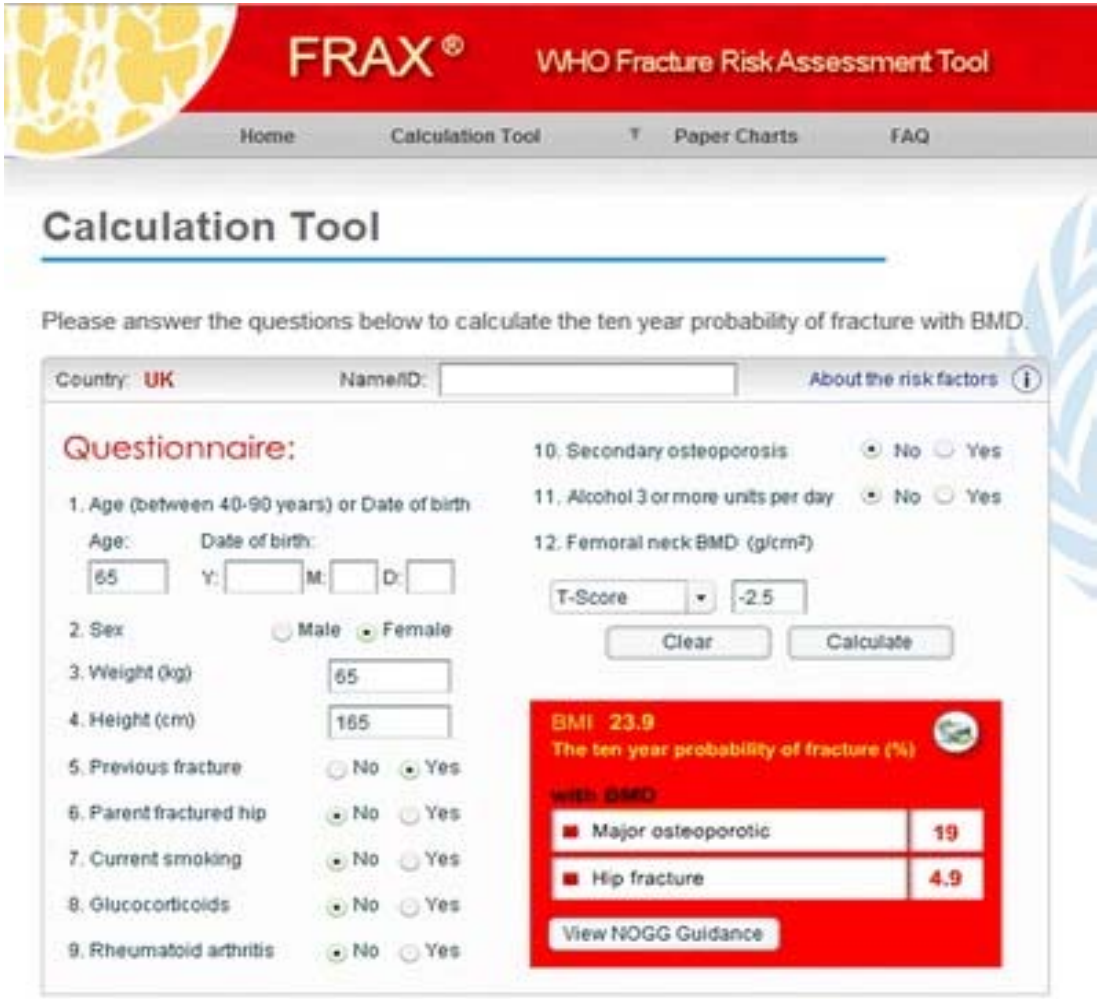
Issues with FRAX

For any given value of BMD, fracture risk increases with age.

It is uncommon for someone's FRAX score to actually increase.

This is not reliable in a person on a drug holiday.

We have limited ability to affect the major risk factors, there are few biomarkers, not enough good data to support a treat-to-target approach.



Role of clinicians

Estimate their patients' risk

Persuade them that this is a worthwhile strategy.

Based on periodic biomarker or other assessment…

Amend the drug regimen to keep as close to targets as possible.

Summary

- Monitoring response to therapy is important to identify who may require a change in therapy.
- Bone turnover markers not used routinely but can be considered for additional information.
- The finding of a BMD decrease >LSC or a new fracture should trigger an additional evaluation.
- Can consider change in therapy if indicated or closer monitoring

Conclusion

- Volunteers to present cases (this is key to the Project ECHO model)
  - Please submit cases to Jennifer.Kelly@uvmhealth.org
- Please complete evaluation survey after each session
- Claim your CME at www.highmarksce.com/uvmmed
- Please contact us with any questions, concerns, or suggestions

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Cases/HIPAA

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Case presentation

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