

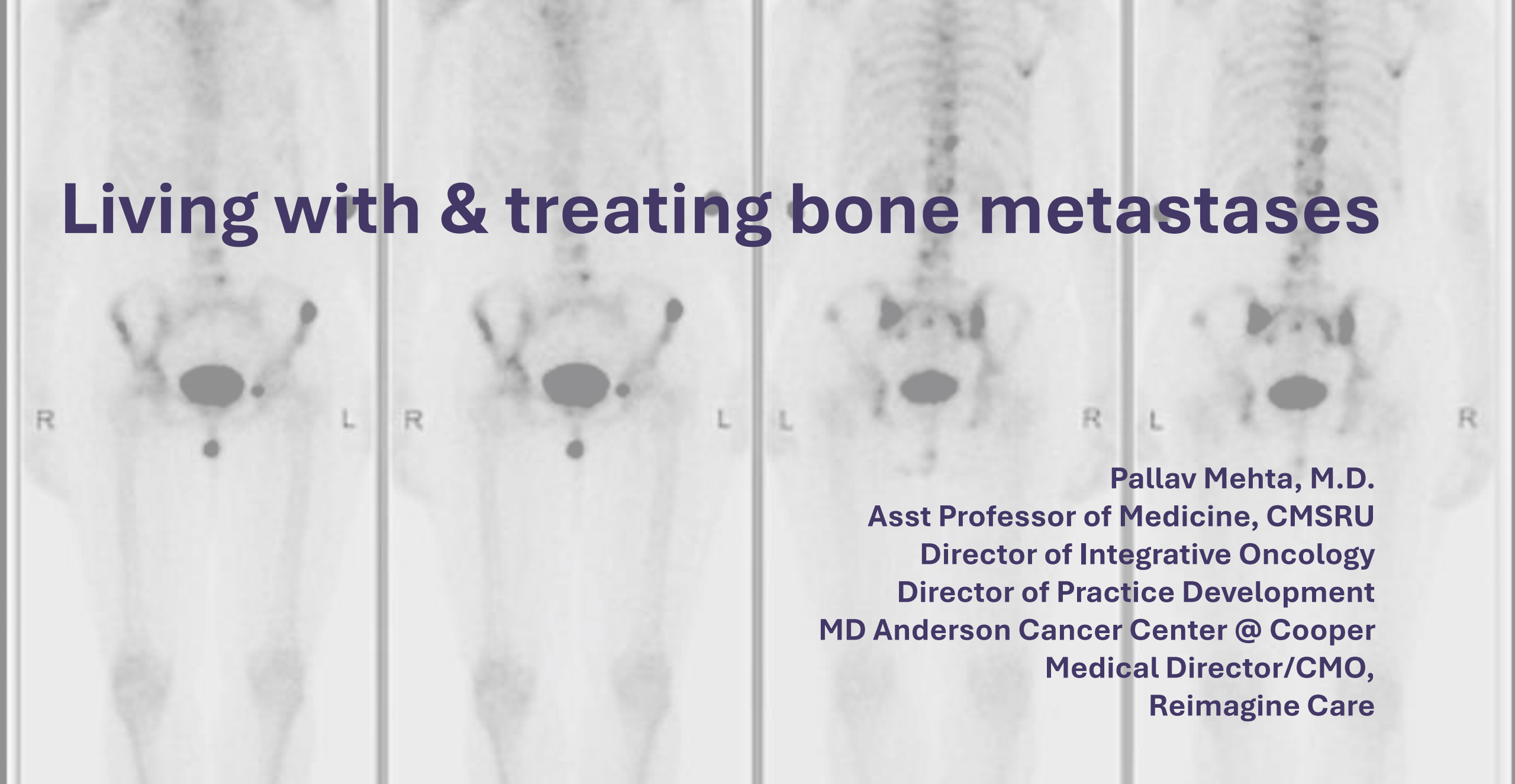


LIVING BEYOND
BREAST CANCER®

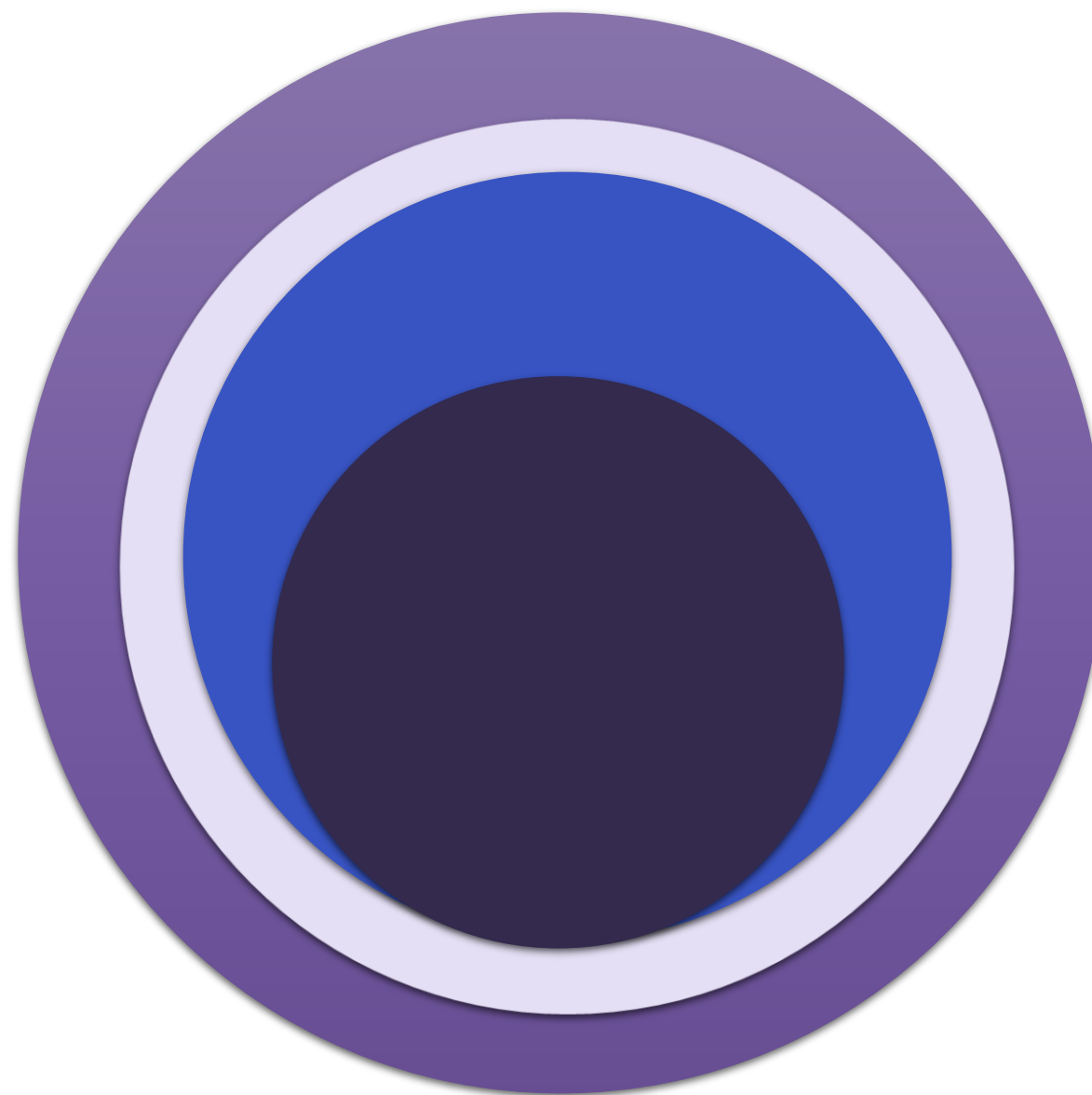
Thriving Together





2025 CONFERENCE ON METASTATIC BREAST
CANCER

Living with & treating bone metastases



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Reimagine Care



-  **All MBC**
-  **Bone MBC**
-  **ER+ Bone MBC**
-  **Bone-only MBC**

Metastasis

- Term is first recorded in Greek writings ~ 1580 AD
- “Change of place, order or nature; migration or transition”



- 1 cm tumor = 1,000,000,000 (Billion) cells
 - ~0.01% of those can become CTC's
 - ~0.01% of those can become metastatic tumors
- Increased recognition in the 20th century with the discovery of xrays by William Roentgen

Metastatic breast cancer is incurable...right?

“We should avoid false promises...but we should also avoid nihilism. The journey is worth taking, even if the goal currently seems elusive.”

- “Curing Metastatic Breast Cancer” George Sledge

“Although we humans cut nature up in different ways...The imagination of nature is far, far greater than the imagination of man.”

- Richard Feynman, Nobel Laureate

“I had a long conversation with Ms. _____ about the implications of metastatic disease and the goals of therapy which are not to eradicate but to control and stabilize disease.”

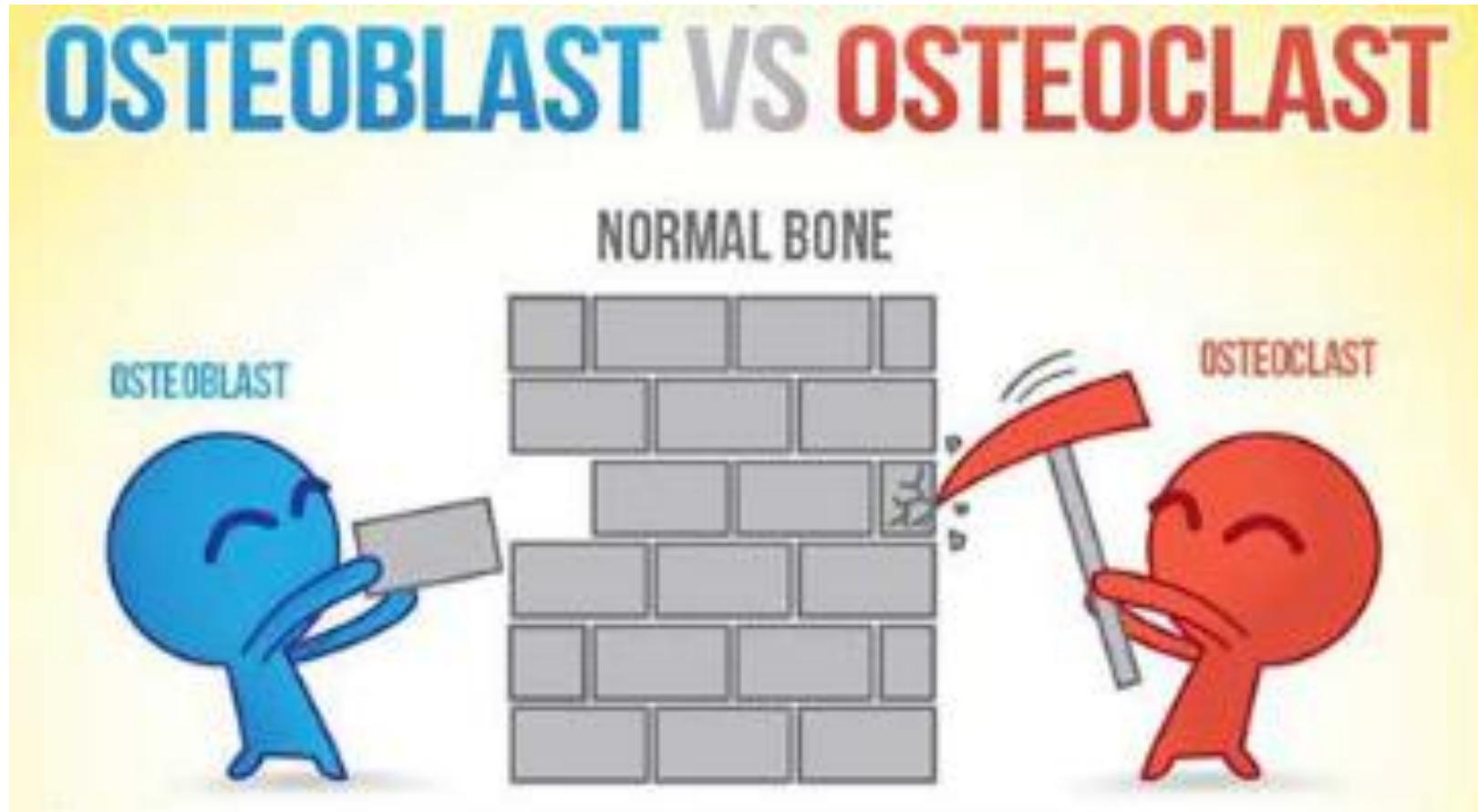
- Pallav Mehta's notes, 2004 - 2024

Why Breast cancer —————> bone?

- Paget's "Seed and Soil" theory, 1889
 - Seeds are the breast cancer cells
 - Soil is the "Premetastatic niche"
 - The environment created by the tumor itself in other organs making them attractive to the rogue cancer cells
- This is why all cancers don't spread to all organs
 - Colon cancer almost never goes to the bones for example

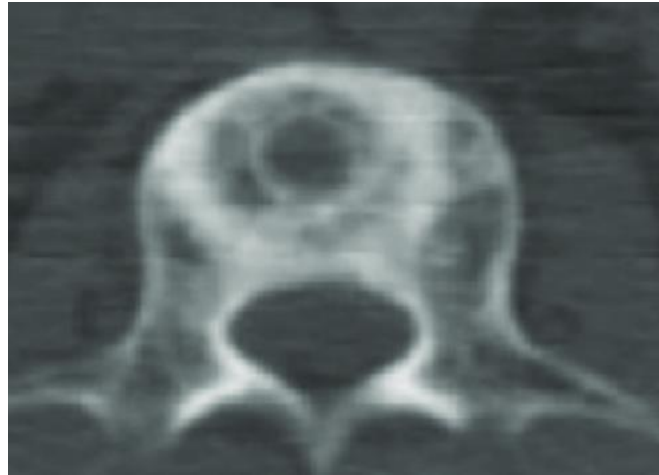


Balance of healthy bone

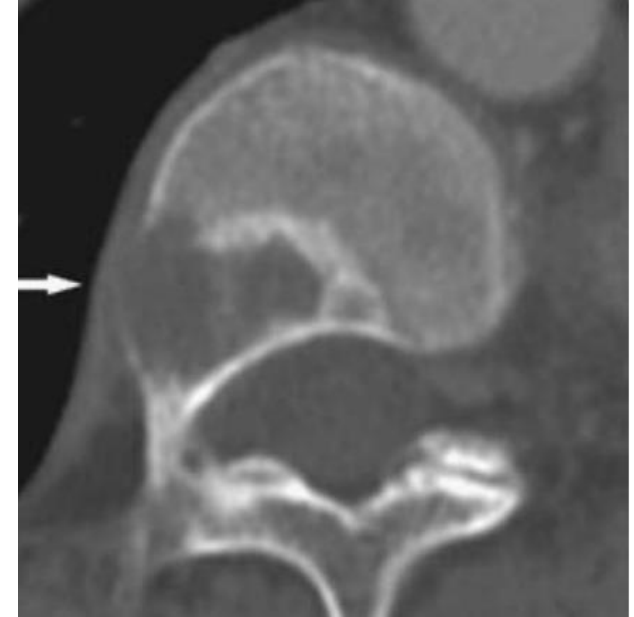




Blastic



Mixed

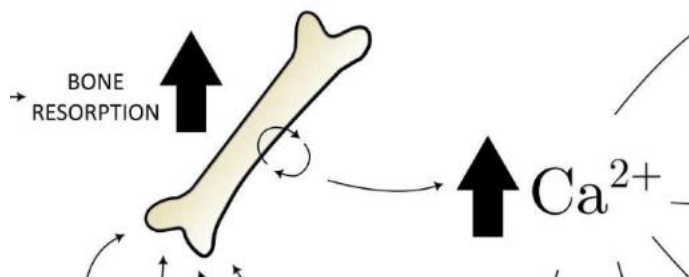


Lytic

Presenting Signs/Symptoms



Pain 70-80%



**Malignant Hypercalcemia
10-20%**



**Spinal Cord
Compression
10%**



**Fracture
20%**

Many ways to diagnose – none perfect



Xray



Bone scan



CT Scan



MRI



PET/CT

Get a biopsy the first time!

- Prove:
 - It's cancer – Eosinophilic granuloma; Bone cyst; Enchondroma
 - It's breast cancer – Myeloma; Osteosarcoma; other metastasis
 - It's the same receptor profile – ER/PR/HER2
- How
 - Needle biopsy by Interventional Radiology
 - Surgical biopsy by Orthopedic Oncology

Factors

- Bone-only vs bone + visceral
- Oligometastatic
- Pace of progression
- Receptor profile
- Genomics/Genetics
- Response to treatment
- Symptoms

Goals

- Prevent Skeletal events
 - Fracture
 - Pain
 - Spinal cord compression
 - Need for radiation therapy
- Improve QOL
 - Pain
 - Function
 - Emotional well being
- Control cancer growth

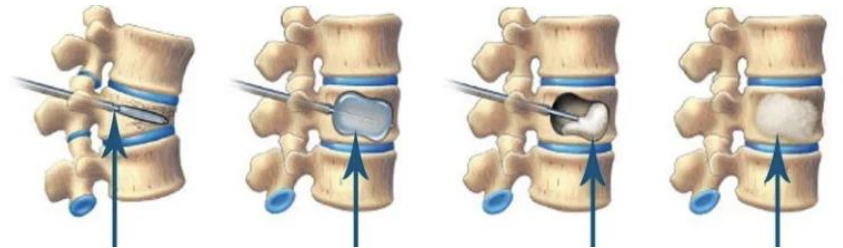
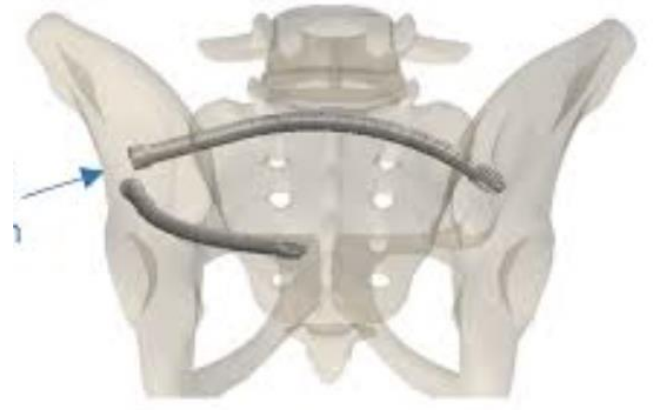
Treatment: Radiation

- Why?
 - If pain or risk to critical places like spinal cord
- How?
 - EBRT in 5-10 Fx
 - SBRT in 3
 - SBRT in single fraction
- When?
 - If pain is such that it's requiring med or limiting function
 - If changing treatment that may take some time to take effect



Treatment: Procedural

- Surgery – Rods, Nails, Screws
 - If impending/complete fracture of weight bearing bone
 - ↓Pain and ↑Function
 - Orthopedic oncologist if at all possible!
- Non-surgical procedures
 - RFA or Cryoablation for small lesions
 - Kyphoplasty for certain spinal fractures



Treatment: Osteoclast inhibitors

- Bisphosphonates or denosumab
 - Monthly or every 3m is fine for most patients
 - Oral vs IV vs. SubQ
 - Have to take oral Vit D and Calcium
- MRONJ
 - Seen in ~1-2% of patients on these drugs
 - More often with monthly therapy and with longer duration
 - Avoid invasive dental work 6-8 wks pre/post
 - Risk is almost negligible with q6m treatment



Signs. Symptoms. Labs. Imaging.

- Often more difficult to monitor than visceral metastasis
- Signs: Less tenderness or physical appearance of lesion
- Symptoms: Less pain
- Labs: Alk Phos, Calcium, tumor markers (?), ctDNA (?)
- Imaging: More sclerosis; Less activity on PET; FES PET (?)



Integrative Onc approaches

- Nutrition/supplements
 - Dietary calcium is better than supplemental calcium though need both
 - Can only absorb about 400-500mg at one time
 - Vitamin D3 to maintain normal to mildly above normal levels >30-50
 - Toxicity can happen with Vit D level > 80
 - Mg? Zn? Vit K2? Boron?
- Mind/body practices
 - Mindfulness; acupuncture; yoga

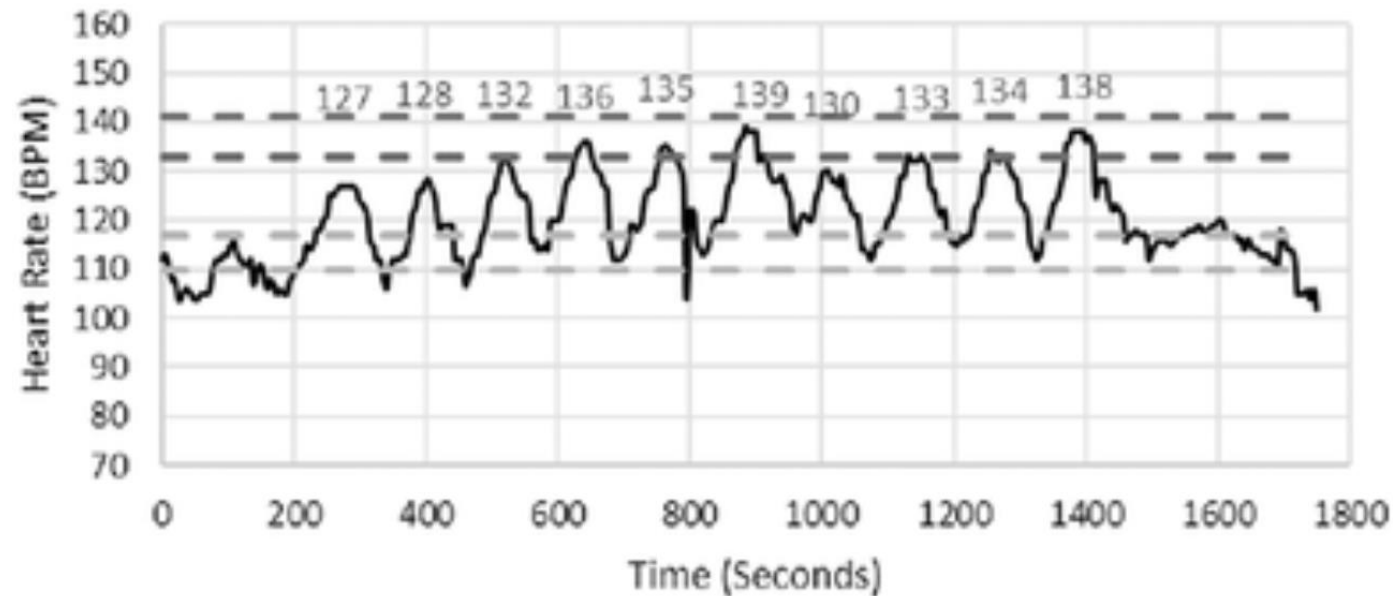
Physical activity – Resistance exercise

- ↑ Bone density/muscle mass and strengthens tendons & ligaments
- Improves appearance
- Caution re: weight bearing bones at risk



Physical activity - cardiovascular

- Intentional activity of sustained duration w HR \geq 60% APM
- Caution re: High impact
- \uparrow Fat loss = \downarrow Estrogen
- \downarrow Vasomotor symptoms
- \downarrow Joint pains on AI's
- Even intervals can be done

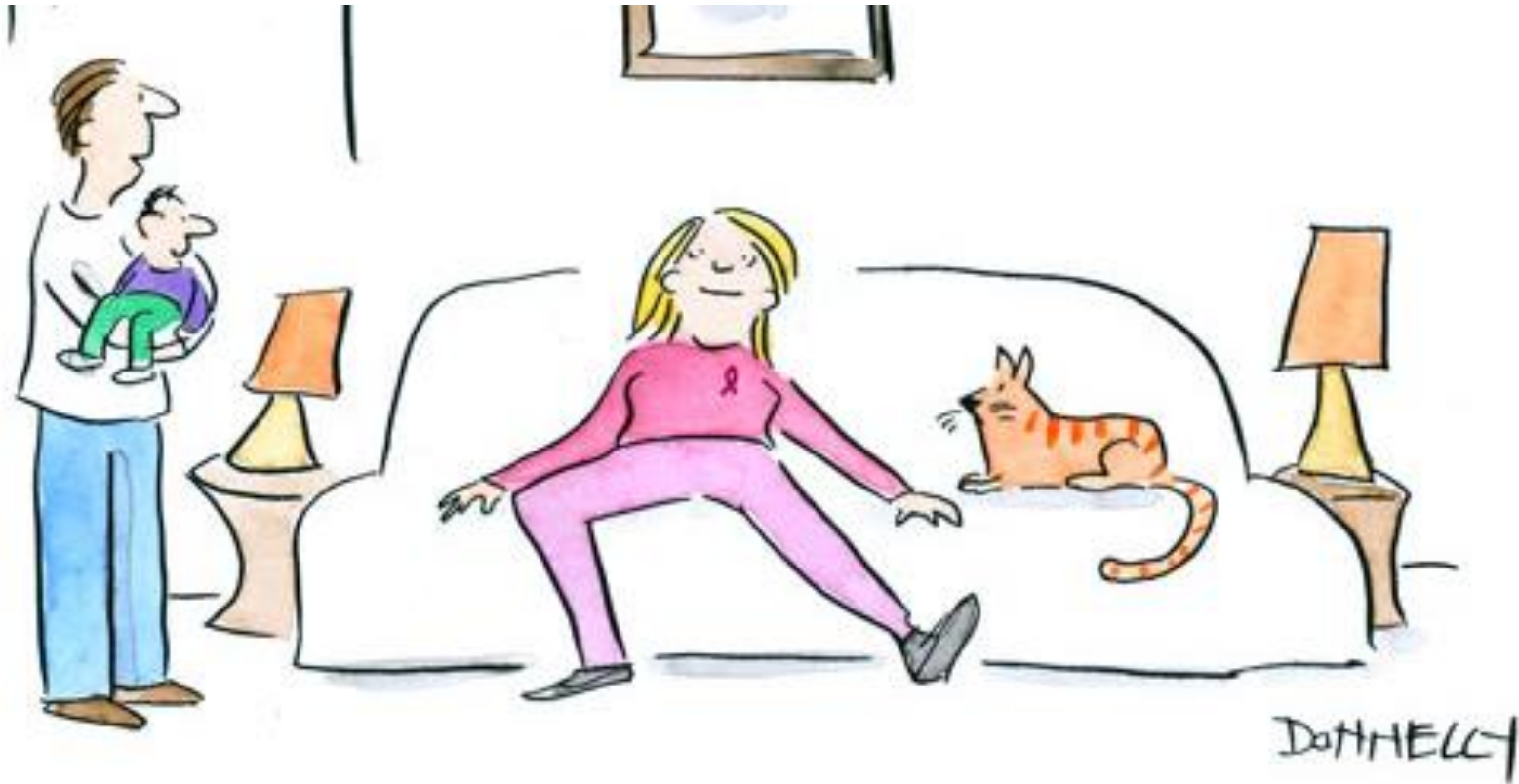


Physical Activity – Balance and Coordination

- Fall and injury prevention – especially with neuropathy
- Vestibular physical therapy may be needed
- Other exercises:



Thank You!



“Honey, you ran, walked, baked, sewed, blogged and biked for breast cancer. Ready for some naptime activism?”