# Beginner's Guide to Drafting Hospital Partner Dual Energy X-Ray Absorption (DXA) Examinations

**September 2024**

ria RADIOLOGY IMAGING ASSOCIATES P.C.

# Hospital Partner DXA Drafting

## Differences between ISJ & Hospital DXAS

- The HL7 does not auto populate for hospital DXAs
- Results table must be filled out manually
- FRAX or No FRAX- must be determined by the DXA drafter and reported appropriately (calculation of FRAX is often necessary)
- Comparison information is manually entered for hospital DXAs

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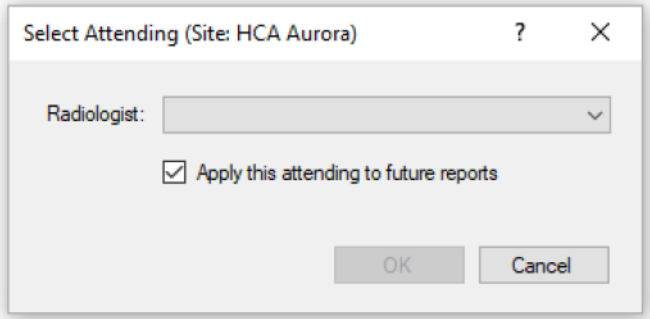
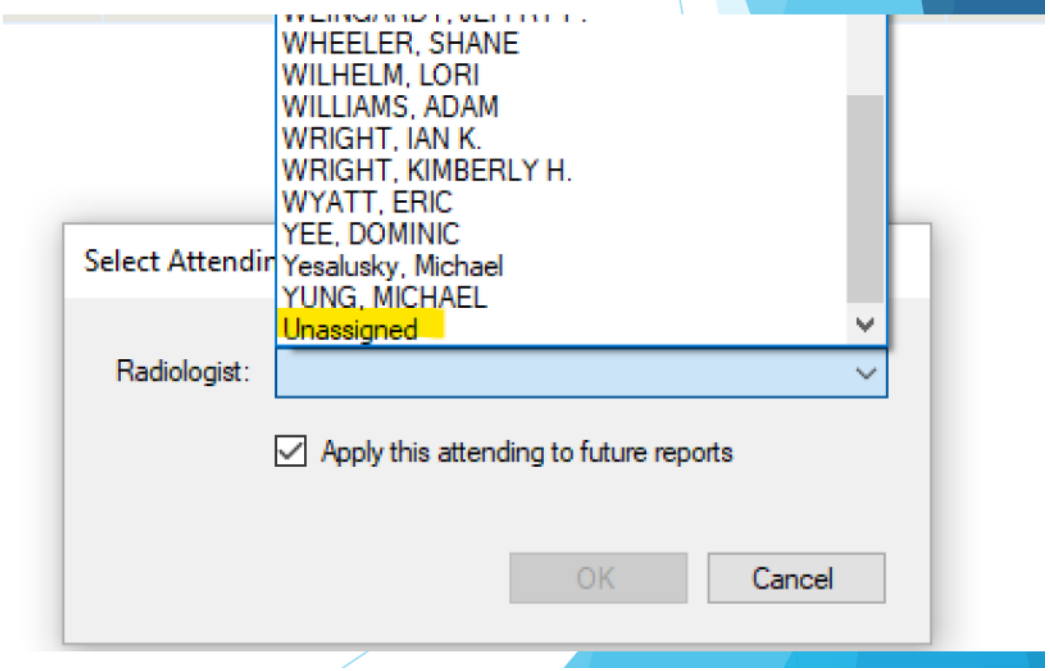
# Hospital Partner DXA Drafting

## SELECT ATTENDING:

This box will pop up for each new hospital system you draft exams for (DAILY). If you are not seeing a normal dictation screen, this box is probably hidden on your desktop! Minimize windows to find this box. Select UNASSIGNED and OK

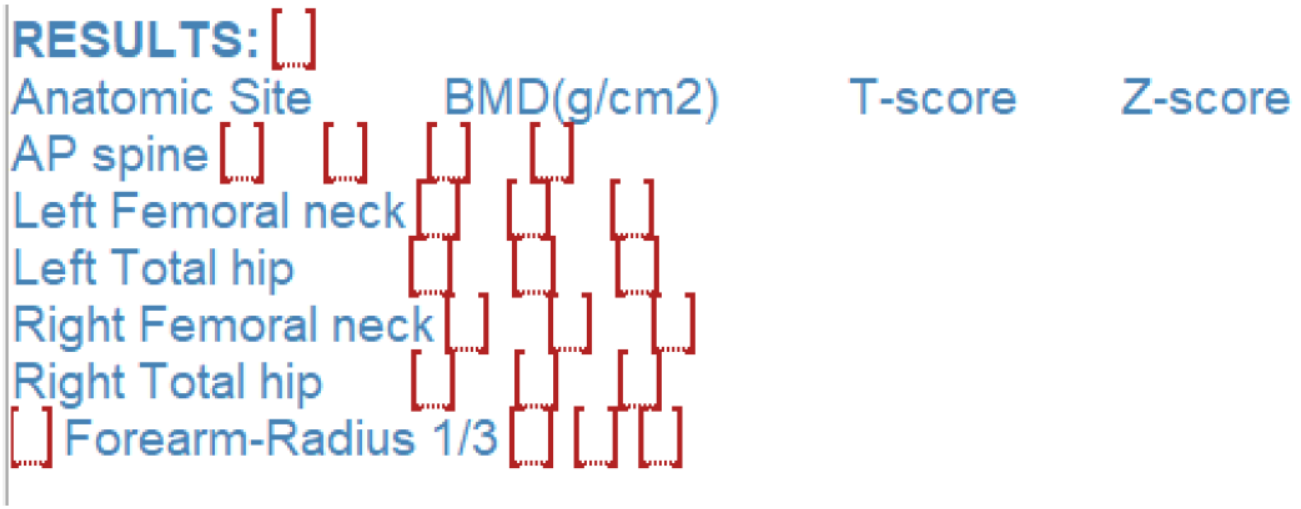


# Hospital Partner DXA Drafting

## HL7 Table does not AUTO POPULATE!

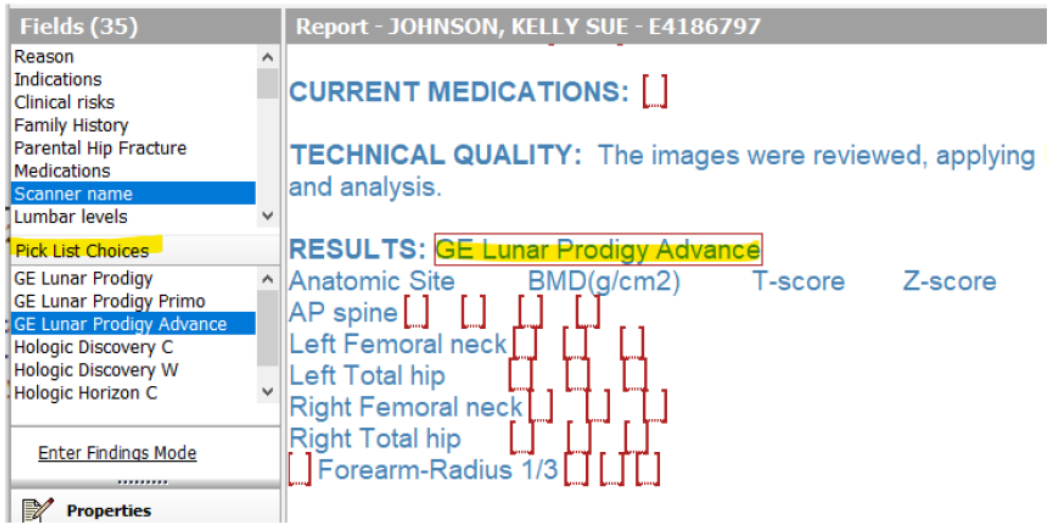
Manually fill in each box using the information provided on DXA IMAGES: (The next few slides will walk you through the process)

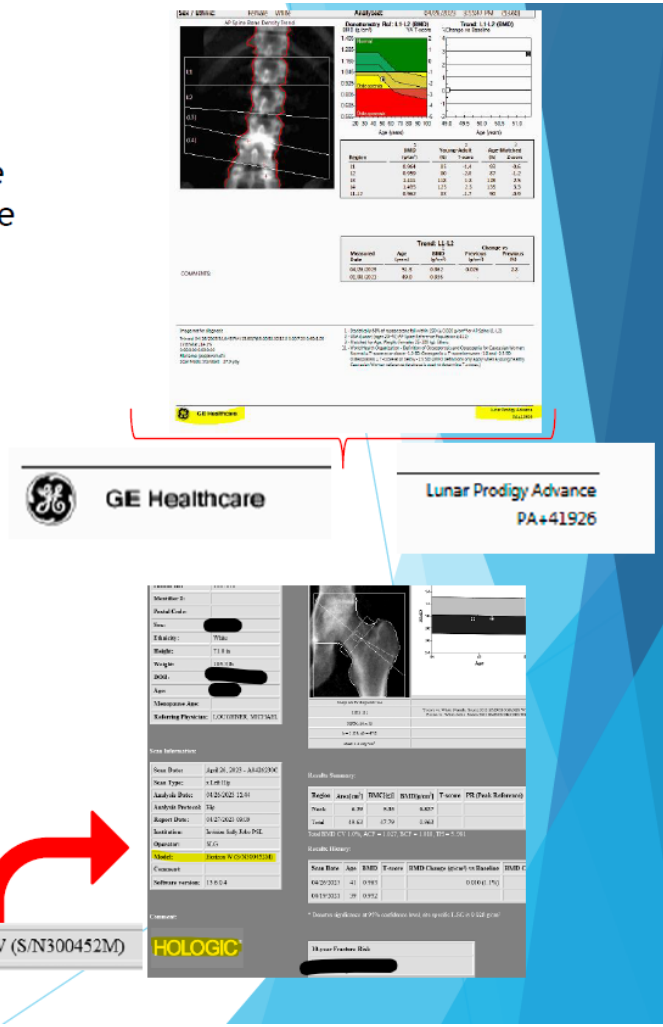


# Hospital Partner DXA Drafting

## RESULTS : [ ]

In the red results bracket- enter the device information: Found at the bottom of the page for GE and under scan information for Hologic (see pick list options)

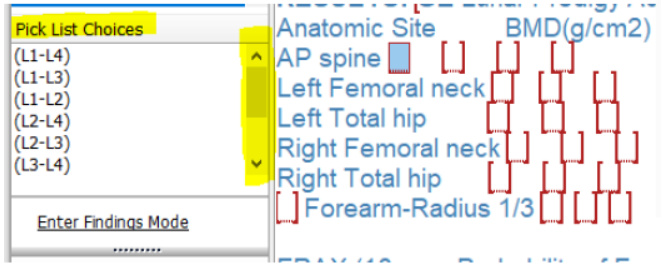


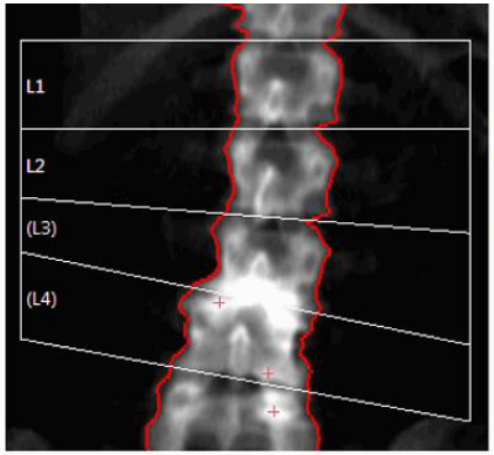



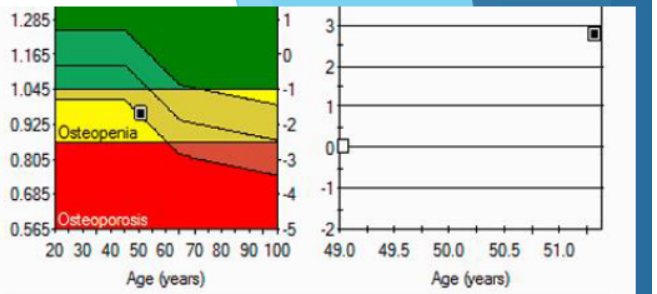
# Hospital Partner DXA Drafting

## ROI Data: SPINE

Notice the 1st AP spine fill in field has a pick list with scroll bar for additional choices: (select the levels)




| Region | 1 BMD (g/cm²) | 2 Young-Adult (%) | 2 Young-Adult T-score | 3 Age-Matched (%) | 3 Age-Matched Z-score |
|---|---|---|---|---|---|
| L1 | 0.964 | 85 | -1.4 | 93 | -0.6 |
| L2 | 0.959 | 80 | -2.0 | 87 | -1.2 |
| L3 | 1.411 | 118 | 1.8 | 128 | 2.5 |
| L4 | 1.495 | 125 | 2.5 | 135 | 3.3 |
| L1-L2 | 0.962 | 83 | -1.7 | 90 | -0.9 |

Use DXA images and HL7 table to fill in RESULTS

**When entering -1.7 say "MINUS 1.7"**

**RESULTS:** GE Lunar Prodigy Advance

| Anatomic Site | BMD(g/cm2) | T-score | Z-score |
|---|---|---|---|
| AP spine (L1-L2) | 0.962 | -1.7 | -0.9 |
| Left Femoral neck | | | |
| Left Total hip | | | |
| Right Femoral neck | | | |
| Right Total hip | | | |

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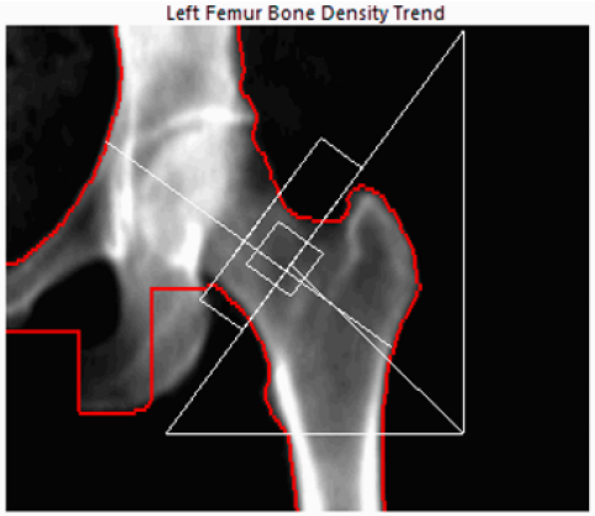
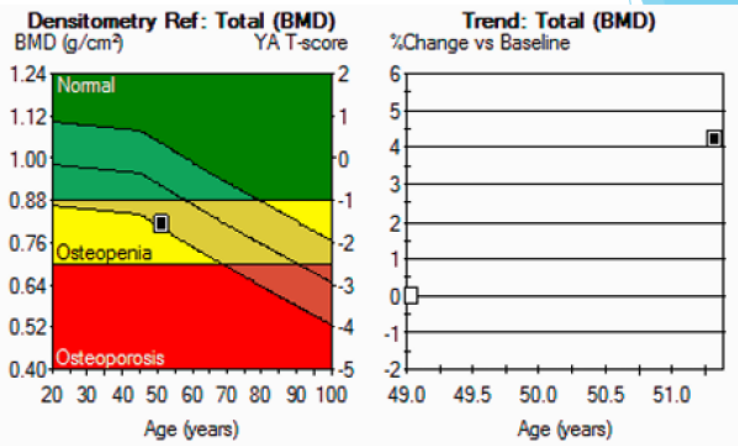
# Hospital Partner DXA Drafting

## ROI Data: HIP




| Region | 1 BMD (g/cm²) | 2 Young-Adult (%) | 2 Young-Adult T-score | 3 Age-Matched (%) | 3 Age-Matched Z-score |
|---|---|---|---|---|---|
| Neck | 0.706 | 72 | -2.3 | 80 | -1.4 |
| Troch | 0.682 | 86 | -1.0 | 92 | -0.5 |
| Total | 0.813 | 81 | -1.6 | 88 | -0.9 |

**RESULTS:** GE Lunar Prodigy Advance

| Anatomic Site | BMD(g/cm2) | T-score | Z-score |
|---|---|---|---|
| AP spine (L1-L2) | 0.962 | -1.7 | -0.9 |
| Left Femoral neck | 0.706 | -2.3 | -1.4 |
| Left Total hip | 0.813 | -1.6 | -0.9 |
| [ ] Forearm-Radius 1/3 | [ ] | [ ] | [ ] |

Delete unused result boxes if only one hip is imaged (notice right hip boxes have been eliminated)

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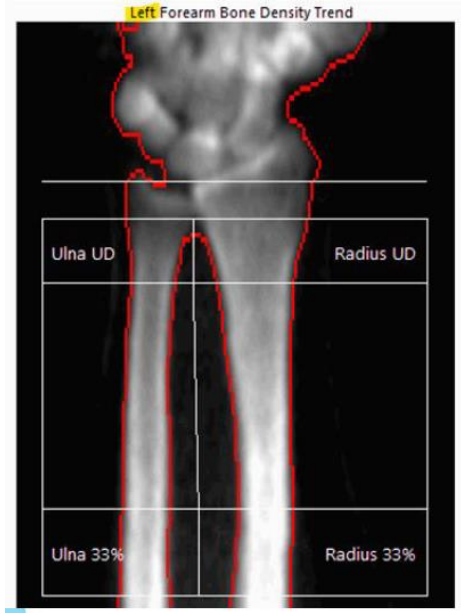
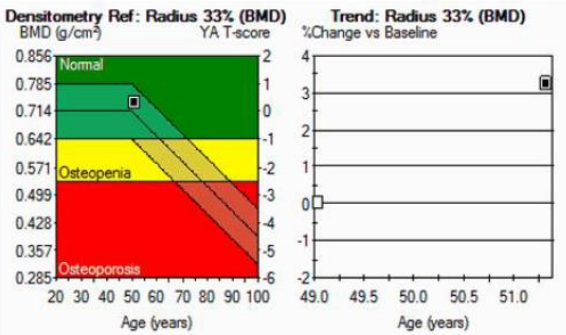
# Hospital Partner DXA Drafting

## ROI Data: Forearm







| Region | BMD (g/cm²) | Young-Adult (%) | Young-Adult T-score | Age-Matched (%) | Age-Matched Z-score |
|---|---|---|---|---|---|
| Radius UD | 0.378 | 100 | 0.0 | 101 | 0.1 |
| Ulna UD | 0.263 | - | - | - | - |
| Radius 33% | 0.737 | 103 | 0.3 | 104 | 0.4 |
| Ulna 33% | 0.682 | - | - | - | - |
| Both UD | 0.336 | - | - | - | - |
| Both 33% | 0.711 | - | - | - | - |
| Radius Total | 0.576 | 105 | 0.6 | 106 | 0.7 |
| Ulna Total | 0.507 | - | | | |
| Both Total | 0.547 | - | | | |

**TECHNICAL QUALITY:** The images were reviewed, apply and analysis.

**RESULTS:** GE Lunar Prodigy Advance

| Anatomic Site | BMD(g/cm2) | T-score | Z-score |
|---|---|---|---|
| AP spine (L1-L2) | 0.962 | -1.7 | -0.9 |
| Left Femoral neck | 0.706 | -2.3 | -1.4 |
| Left Total hip | 0.813 | -1.6 | -0.9 |
| Left Forearm-Radius 1/3 | 0.737 | 0.3 | 0.4 |

Radius 33% is the only set of numbers reported for forearm

Specify Left or Right in the fill in field in front of forearm

# Hospital Partner DXA Drafting

## FRAX (10-year Probability of Fracture):

GE studies- FRAX is a separate image:

Left Femur FRAX*

**Risk Factors:**

- [x] None
- [ ] Alcohol (3 or more units per day)
- [ ] Family Hist. (Parent hip fracture)
- [ ] Glucocorticoids (Chronic)
- [ ] History of Fracture (Adult)
- [ ] Secondary Osteoporosis
- [ ] Rheumatoid Arthritis
- [ ] Tobacco User (Current Smoker)

**NOF/ISCD Filters:**

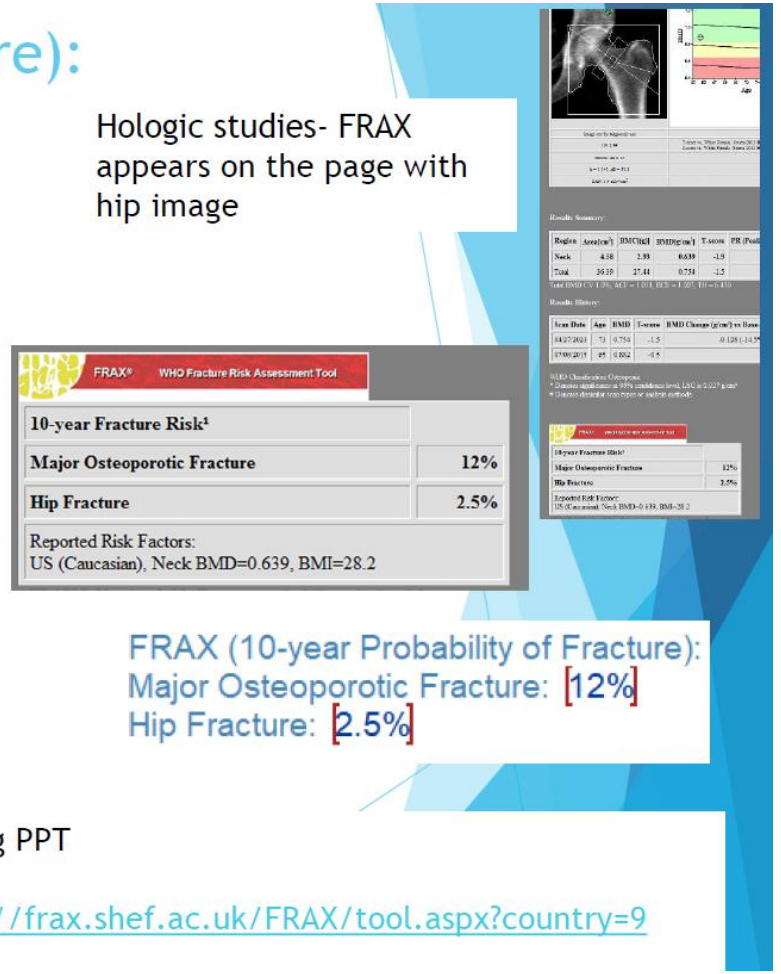
- [ ] On Treatment
- [ ] Previous Fracture (Hip or Spine)

FRAX (10-year Probability of Fracture):
Major Osteoporotic Fracture: [6.5%]
Hip Fracture: [1.3%]

**10-year Probability of Fracture:**[17]

| | |
|---|---|
| Major Osteoporotic[18] | 6.5% |
| Hip | 1.3% |
| Population | USA (Caucasian) |
| Based on Femur (Left) Neck BMD | |

Hologic studies- FRAX appears on the page with hip image




- FRAX information can be found on slides 59-65 in DXA Drafting PPT
- Use macro ELIMINATE FRAX when FRAX is not appropriate
- If FRAX is not calculated or incorrectly calculated, use https://frax.shef.ac.uk/FRAX/tool.aspx?country=9

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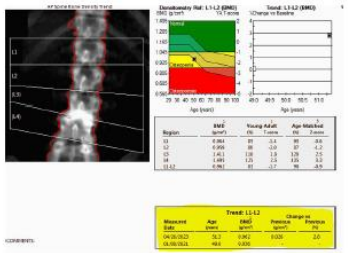
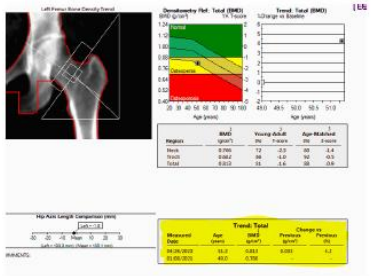
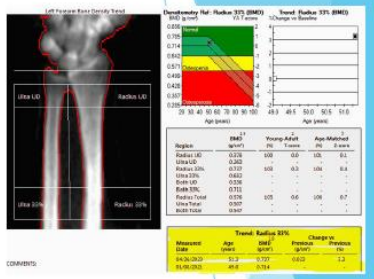
# Hospital Partner DXA Drafting

## Macro Compare Hospital:

Comparison information is located in the TREND TABLE (Highlighted in yellow on thumbnails and magnified below each thumbnail)
EXAMPLE:







**Trend: L1-L2**

| Measured Date | Age (years) | BMD (g/cm²) | Change vs Previous (g/cm²) | Change vs Previous (%) |
|---|---|---|---|---|
| 04/26/2023 | 51.3 | 0.962 | 0.026 | 2.8 |
| 01/08/2021 | 49.0 | 0.936 | - | - |

**Trend: Total**

| Measured Date | Age (years) | BMD (g/cm²) | Change vs Previous (g/cm²) | Change vs Previous (%) |
|---|---|---|---|---|
| 04/26/2023 | 51.3 | 0.813 | 0.033 | 4.2 |
| 01/08/2021 | 49.0 | 0.780 | - | - |

**Trend: Radius 33%**

| Measured Date | Age (years) | BMD (g/cm²) | Change vs Previous (g/cm²) | Change vs Previous (%) |
|---|---|---|---|---|
| 04/26/2023 | 51.3 | 0.737 | 0.023 | 3.3 |
| 01/08/2021 | 49.0 | 0.714 | - | - |

**COMPARISON:** 1/8/2021. Compared with the previous exam, the lumbar spine bone density has increased by 0.026 g/cm2 (2.8%), which is not statistically significant. The left total hip bone density has increased by 0.033 g/cm2 (4.2%), which is statistically significant. The left forearm bone density has increased by 0.023 g/cm2 (3.3%), which is not statistically significant.

# Hospital Partner DXA Drafting

## Hospital Macro Summary

| Macro List by Category | Notes |
|---|---|
| **Technical Quality Macros** | |
| 609 | Previous images reanalyzed |
| No Spine on f/u | Spine found to be unreliable on prior exam and not imaged on current exam |
| Sclerosis | Spine unreliable (severe sclersosis or degenerative changes), T & Z elevated compared to hip and forearm, forearm not imaged, but should have been |
| Spine Unreliable but Imaged | Delete all spine info in HL7 table if using this macro |
| Combo | Use if all vertebral bodies are not included |
| Hypercalcemia | Forearm should be imaged |
| Hyperparathyroidism | Forearm should be imaged |
| REVIEW Slide 55 (MISC. Approved Verbiage) | |
| **FRAX Macros** | |
| FRAX | Major ≥ 20 % and Hip ≥ 3 % |
| Eliminate FRAX | HRT, OP meds, review slides 59-65 (DXA Drafting) |
| **Comparison Macros** | |
| ROC Unreliable | Spine increase is abnormal compared to other sites, copy and paste the last senetence to add |
| Compare Hospital | Basic template for entering comparison results |
| Outside Comparison Hospital | Template for exams with outside priors (similar to isj vs different isj macro) |
| Summit View Compare | Prior exam performed using GE lunar technology |
| RWMC Compare Discrepancy | Lumbar spine labeling changed and the trending values are not accurate. (New baseline spine) |
| **Impression Macros** | **Don't forget rate of change statement when using unique impression macros** |
| Osteopenia Elevated Risk | Frax indicates elevated risk (≥3% ≥20%) |
| Low Trauma FX | Use when the pt has a **fragility** fx (humerus, forearm, femur, tib-fib, spine, ribs, pelvis) but diagnosis is (LBD or Normal) |
| Impression Prior Hip or Vertebral FX | Pt has normal or LBD and reported spine or hip fx (resulting from trauma) |
| Established Osteoporosis | T scores @ or below -2.5 and 1 or more fx reported (regardless of trauma/no trauma) |
| Osteoporosis Elevated Risk | (1st OP diagnosis) or (previously diagnosed with OP but not treated and bmd decreasing) |
| Supra Normal | All Z-scores are @ or above 2.5 |
| Z-Score Impression | Males younger than 50, premeno females younger than 45 (@ 45 all females get T & Z-scores regardless of menopausal state) |
| Macro 605 | Treatment macros should be used in the impression for all pts on OP meds and Synthetic HRT<br>Do not include fx risk statement in impression for pts on treatment<br>**Macro 605**- Sig. increase in BMD , **Macro Stabilization**- No sig. change in BMD, **Macro 606**- Sig. decrease in BMD |
| Macro Stabilization | |
| Macro 606 | |

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# Hospital Partner DXA Drafting

## Assigning Hospital Exams to Radiologists:

- Dr. Yung - Do not reserve ISJ or Banner DXAS (Site codes BNIS), he will sign off on all other hospital DXAS
- Lampert, Barke, and Hsieh- Can usually sign off on all DXAs
- Obregon will email when he is available
- Brenneman- ISJ dxas only

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# Hospital Partner DXA Drafting

## Additional Questions or Comments?

**Contact:**
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