DXA Best Practices

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DXA Best Practices

Dual-energy X-ray Absorptiometry: DXA

- Bone Mineral Density (BMD)
  - Diagnosis
  - Fracture Risk (including FRAX/TBS)
  - Monitor
- Vertebral Fracture Assessment (VFA)
- Trabecular Bone Score (TBS)
- Hip Structural Analysis (HSA)
- Body Composition (Body Comp)

What is the problem?

Too many bad DXAs

Bad DXAs can harm patients

BMD Predicts Fracture Risk

DXA Quality Gap Leads to Adverse Clinical Outcomes


Low DXA Reimbursement Leads to Poor DXA Quality

- Losing money with DXA
- No investment in education and training
- Suboptimal DXA studies
- Inappropriate clinical decisions

Potential harm to patients: higher medical expenses, unnecessary lab tests, wrong treatment, fractures that might have been prevented

Open access: download FREE at www.iscd.org
**DXA Quality**

“the degree to which DXA measurements and interpretation are consistent with current professional standards to facilitate desired health outcomes”

**DXA Best Practices is NOT . . .**

- A comprehensive list of all features that characterize a high quality DXA facility
- A substitute for appropriate education, certification, and accreditation
- The only means of addressing the many unmet needs in the care of patients with osteoporosis

**DXA Best Practices is . . .**

- A guide and expectation for DXA supervisors, technologists, interpreters, and clinicians
- A set of essential markers that are consistent with high quality DXA
- Intended to aid patients, referring providers, and payers in recognizing high quality DXA services
- Applicable worldwide for adult and pediatric DXA (according to local circumstances and country-specific standards)
- Expected to evolve over time as new data emerge and new standards are developed

**Methodology**

- ISCD Position Development Conferences held regularly since 2001, with rigorous reviews of best medical evidence evaluated by international panels of experts
- ISCD Official Positions, developed with modified RAND Corporation and UCLA method (RAM) for recent PDCs
- Written, reviewed, and vetted by numerous experts in adult and pediatric DXA worldwide, including the ISCD Scientific Advisory Committee, and approved by the ISCD
How to use DXA Best Practices if you are a bone densitometrist

• Download DXA Best Practices
• Be familiar with it
• Follow the recommendations
• Be trained and stay updated
• Get certified (if not already)
• Facility accreditation is the best way to demonstrate that high quality DXA is being performed

How to use DXA Best Practices if you are NOT a bone densitometrist

• Ask about the following
  – Certification for DXA tech and interpreter
  – Facility accreditation
  – Precision assessment has been done and least significant change is known

• Look at the report
  – Make and model of DXA instrument are identified
  – One diagnosis per patient, not different diagnosis for each skeletal site
  – One fracture risk assessment per patient, not different one for each skeletal site

• Look at the images
  – Spine positioning and vertebral body labeling
  – Hip positioning
  – Comparing “apples with apples”

DXA Best Practices Scan Acquisition and Analysis

1.1. At least one practicing DXA technologist, and preferably all, has a valid certification in bone densitometry.
1.2. Each DXA technologist has access to the manufacturer’s manual of technical standards and applies these standards for BMD measurement.

1.3. Each DXA facility has detailed standard operating procedures for DXA performance that are updated when appropriate and available for review by all key personnel.

1.4. The DXA facility must comply with all applicable radiation safety requirements.

1.5. Spine phantom BMD measurement is performed at least once weekly to document stability of DXA performance over time. BMD values must be maintained within a tolerance of ±1.5%, with a defined ongoing monitoring plan that defines a correction approach when the tolerance has been exceeded.
1.6. Each DXA technologist has performed in vivo precision assessment according to standard methods and the facility LSC has been calculated.

1.7. The LSC for each DXA technologist should not exceed 5.3% for the lumbar spine, 5.0% for the total proximal femur, and 6.9% for the femoral neck.

2.1. At least 1 practicing DXA interpreter, and preferably all, has a valid certification in bone densitometry.

2.2. The DXA manufacturer and model are noted on the report.
2.3. The DXA report includes a statement regarding scan factors that may adversely affect acquisition/analysis quality and artifacts/confounders, if present.

2.4. The DXA report identifies the skeletal site, region of interest, and body side for each technically valid BMD measurement.

2.5. There is a single diagnosis reported for each patient, not a different diagnosis for each skeletal site measured.

2.6. A fracture risk assessment tool is used appropriately.
DXA Best Practices
Interpretation and Reporting

2.7. When reporting differences in BMD with serial measurements, only those changes that meet or exceed the LSC are reported as a change.

Summary

• High quality DXA is essential for correct diagnostic classification, optimal fracture risk assessment, and BMD monitoring

• DXA Best Practices provide a framework for DXA supervisors, technologists, interpreters, and clinicians to achieve and assess DXA quality

• DXA Best Practices are expected to evolve with advances in medical evidence and changes in standards