Osteoporosis Screening | Practice Considerations for Patients with Disabilities

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Scope and Applicability

These practice considerations apply to patients with disabilities who meet standard U.S. Preventive Services Task Force (USPSTF) osteoporosis screening criteria (i.e., all asymptomatic women 65 and older or asymptomatic postmenopausal women younger than 65 at increased risk for osteoporosis); however, clinical eligibility for osteoporosis screening **should be determined more broadly for patients with disabilities;** research demonstrates that certain disabilities and disability-related factors significantly increase osteoporosis risk regardless of age or menopause status.

Non-ambulatory individuals and those with **intellectual and developmental disabilities (IDD)** face unique risk factors and an elevated osteoporosis risk at younger ages than the general population, yet they are not recognized as at-risk groups by the USPSTF. The USPSTF states that the “recommendation does not apply to individuals, including men, who have medical conditions or are taking medications associated with bone loss” (Nicholson et al., 2025) . This exclusion creates a significant gap in guidance for patients with disabilities, who frequently have medical conditions or take medications that increase osteoporosis risk. These patients fall outside standard screening recommendations precisely because they need earlier, more individualized assessment.

While the USPSTF focuses on primary osteoporosis screening in the general population, people with disabilities often develop secondary osteoporosis through disability-related mechanisms, requiring clinical judgement that extends beyond standard age-based criteria.

Practitioners should consider **individualized bone health assessment** for patients with certain disabilities beginning in early adulthood, particularly for those with cerebral palsy, intellectual disabilities, mobility disabilities, or multiple risk factors.

More research is needed to determine an appropriate starting age for osteoporosis screening in these populations, but practitioners should approach each patient's bone health proactively, recognizing that waiting until traditional screening ages may miss critical opportunities for prevention and early intervention.

This guidance addresses disability-related risk factors, barriers to screening, and accommodation needs for patients with physical or mobility disabilities, sensory disabilities (vision, hearing, deafblind), and IDD.

Disability-related Risk Factors

Non-ambulatory individuals represent a high-risk population requiring special attention. Those with cerebral palsy, spina bifida, and spinal cord injuries are at increased risk for low bone mineral density (BMD) and experience osteoporosis at earlier ages than the general population (Fritz et al., 2021; Sheridan, 2009; Trinh et al., 2017).

Low BMD can be identified in individuals with **cerebral palsy** as early as age 2, with progressive worsening throughout childhood, and problems occurring at younger ages, with more severity compared to the general population (Jasien et al., 2012; Sheridan, 2009).

Bone mass density is shown to be decreased in both men and women with other **IDD**, including those who are ambulatory (Jasien et al., 2012). Fracture patterns observed in individuals with intellectual disabilities indicate premature development of osteoporosis, highlighting the need for proactive prevention and treatment approaches (Frighi et al., 2022).

Medication-related Bone Loss in Disability Populations

Individuals with mobility disabilities and IDD often take **medications** that compound their osteoporosis risk through various mechanisms:

- **Depot medroxyprogesterone acetate (Depo-Provera)** has been prescribed for menstrual management or contraception in non-ambulatory women and those with IDD since the 1990s. This medication suppresses estrogen production, leading to decreased bone formation (Watson et al., 2006).
- **Antiepileptic drugs (AEDs),** such as phenytoin, phenobarbital, carbamazepine, and valproic acid, are required by many patients with IDD to control seizure disorders. These medications cause the body to break down vitamin D too quickly. Since vitamin D is

essential for bone mineralization, this deficiency may contribute to early-onset osteoporosis. (Fritz et al., 2021).

- **Antipsychotic medications** are frequently prescribed for individuals with IDD often for behavioral management. These medications affect bone health through multiple mechanisms, including prolactin elevation and impacts on bone cell activity (Azimi Manavi et al., 2023; Mercurio et al., 2024; Weerasinghe et al., 2023).
- **Corticosteroids** are also recognized as bone-injuring medications. Prolonged exposure to corticosteroids is a risk factor for low BMD, particularly in women with significant mobility limitations or those unable to participate in weight-bearing activities (Scottish Intercollegiate Guidelines Network, 2021).

Compounded Risk Factors

Risk factors related to the cumulative effects of multiple medications are further compounded in disability populations by additional factors, including poor nutrition (decreased calcium and vitamin D intake), vitamin D deficiency from limited sun exposure, and feeding difficulties (Burke et al., 2019).

Barriers to Screening

Individuals with disabilities often face substantial barriers to BMD screening, which can lead to delayed diagnosis and treatment of osteoporosis. Common barriers include inaccessible bone density scanning equipment, practitioner assumptions about patients' quality of life and screening benefits, and practitioners' inadequate understanding of disability-specific risk factors (Buckley et al., 2024; Smeltzer & Sharts-Hopko, 2005).

Individuals with disabilities under age 65 who do not meet the postmenopausal qualification face substantial insurance coverage barriers for osteoporosis screening, despite elevated risk from disability-related factors. In addition, risk factors due to ambulatory status or certain medications may be missed only if standard risk assessment calculators are being used, without also incorporating an individualized assessment that explicitly considers these factors.

While the FRAX risk assessment tool, released in 2008, accounts for some risk factors, such as current smoking, glucocorticoids, alcohol consumption, and "secondary osteoporosis," it does not explicitly account for ambulatory status or other medications commonly taken by people with disabilities. These may include depot medroxyprogesterone acetate or antiepileptic or antipsychotic medications, which recent studies have shown to increase risk for secondary osteoporosis. This creates a critical gap; while bone health issues emerge earlier in people with disabilities, insurance companies may legally deny coverage for screenings that fall outside national guidelines, resulting in delayed diagnosis and treatment of osteoporosis.

These systemic and policy-level barriers contribute to the underdiagnosis and undertreatment of osteoporosis in people with disabilities; thereby increasing their risk of hazardous fractures that severely impact morbidity, mortality, and independence (Fritz et al., 2021; Mercurio et al., 2024; Watson et al., 2006). Updating screening guidelines and ensuring appropriate insurance coverage are critical steps toward achieving health equity in bone health care for individuals with disabilities (Weinick et al., 2024).

Patient Assessment

Assumptions about patients with disabilities can create significant barriers to osteoporosis screening. Assumptions, such as patients with

disabilities cannot undergo bone density testing, they have poor quality of life that doesn't warrant screening, their disability makes them unable to understand the procedure, or they lack decision-making capacity, are often wrong and can lead to inadequate care, missed screening opportunities, and health disparities. Instead:

- Assess each patient individually rather than making broad assumptions based on disability type.
- Assume screening is possible until proven otherwise through careful assessment.
- Inquire about previous bone density testing experiences and any concerns or accommodations needed, recognizing that some patients may have had negative health care experiences that affect their willingness to undergo testing.
- Consider that standard risk assessment tools may not capture disability-specific risk factors, requiring supplemental clinical judgment about earlier screening needs.
- Ask about disability-specific risk factors in a routine, nonjudgmental manner as part of comprehensive bone health assessment, including medication use, mobility limitations, and fall history.
- Evaluate medication that may affect bone health, particularly antiseizure medications, depot medroxyprogesterone acetate (Depo-Provera), long-term corticosteroids, and antipsychotic medications.
- Respect the patient's autonomy in medical decision making and evaluate capacity for informed consent based on the individual's demonstrated understanding, not disability status.
- Consider how the patient’s disability may make traditional screening exceedingly difficult, if not impossible, to complete and offer appropriate alternatives when possible.

Alternative Screening Options

A dual-energy X-ray absorptiometry (DEXA or DXA) scan is the gold standard for osteoporosis screening; however, there are several viable alternatives that may work better for people with certain disabilities.

Lateral Distal Femur DXA

Lateral distal femur scanning can be used for individuals with cerebral palsy and other conditions where standard hip and spine positioning is challenging (Henderson et al., 2015). This alternative site requires different positioning that may be more accessible for patients with mobility disabilities while still providing clinically relevant bone density information (Fritz et al., 2021). Many children with cerebral palsy tolerate this scanning technique well (Sheridan, 2009). (Sheridan, 2009)

Peripheral DXA Scanning

Peripheral DXA scanning may be appropriate for patients who cannot undergo central (hip and spine) DXA scanning due to positioning limitations, contractures, or inability to lie flat (Fritz et al., 2021). Peripheral sites include wrist, heel, and forearm. While peripheral DXA can predict central fracture risk, it should be interpreted with understanding that results may not directly correlate with central site bone density. Consider offering peripheral DXA when central scanning is not feasible despite accommodations.

Quantitative Ultrasound

Quantitative ultrasound (QUS) of the heel or other peripheral sites provides an alternative assessment method that requires minimal positioning, uses no radiation, and can be performed with portable equipment. Emerging portable ultrasound devices for heel-bone assessment show promising correlation with standard bone density

measurements (Adami et al., 2024), though they are not considered equivalent to DXA scanning. This technology may be useful for patients who cannot access DXA equipment or as a monitoring tool between DXA scans. Ultrasound assessment is particularly valuable for patients with severe positioning limitations as it can be performed in various positions and locations.

Accommodation Planning

Accommodation Planning for Office Staff

During scheduling and intake, office staff should proactively inquire about accommodation needs and clearly document them for the clinical team. Staff should be prepared to discuss the different screening options available and schedule additional time when accommodations are needed. Ask patients:

- "What supports would make your bone density scan accessible to you?”
- "Have you had a bone density scan or X-ray before? What accommodations worked well?"
- "Do you have any physical or mobility disabilities that might affect positioning for the scan?"
- “How do you prefer to communicate?”

Pre-visit Planning

In preparation of the patient’s visit, practitioners should do the following:

- Review the patient's medical record for documented disabilities, accommodations, and disability-related risk factors, including

medications that may affect bone health and whether they are non-ambulatory.

- Have basic awareness of the patient's disabilities.
- Contact the patient before the appointment to discuss accommodations needed to safely and effectively complete the screening.
- Coordinate with radiology or imaging departments to confirm accessible equipment availability and provide necessary support.

Implementing Accommodations During the Visit

During the visit, practitioners should:

- Summarize what they learned from the patient's chart and confirm that they understand their needs.
- Discuss any accommodations they have said worked well in the past and confirm how they can assist them.
- Ask patients, "What would make the screening accessible and more comfortable for you?"

Clinical Considerations by Disability Type

Physical/Mobility Disabilities

Clinical Considerations

Patients with physical or mobility disabilities face multiple structural and procedural barriers to bone density screening. Standard DXA equipment typically requires patients to lie flat on a table that is often

part of the machine and may not be height adjustable. Patients may have difficulty with transferring from their wheelchair to the scanning table, maintaining required positioning for hip and spine scans, or lying still for the duration of the scan. Those with contractures, spasticity, or involuntary movements may find standard positioning impossible. Measurement challenges are common due to anatomical deformities or noncooperation, making alternative techniques necessary (Jasien et al., 2012). Additionally, surgical hardware may interfere with standard scanning sites. In children and adults with cerebral palsy, measuring whole body, spine, hip, or even forearm sites are often not possible because of acquired or intrinsic bone-related pathology or the presence of surgical hardware (Sheridan, 2009).

Accommodation Options

- **Height-adjustable scanning tables:** Ensure DXA equipment can accommodate wheelchair transfers with appropriate table height adjustment. Be aware of imaging centers that specialize in DXA scans and have experience working with people with disabilities.
- **Transfer assistance:** Provide trained staff to assist with safe patient transfer using slide boards, mechanical lifts (Hoyer lifts), or other transfer aids as needed.
- **Alternative scanning sites:** Use **lateral distal femur scanning** when hip and spine positioning is not feasible or consider **peripheral DXA scanning of wrist or heel** for patients who cannot undergo central site scanning.
- **Positioning supports:** Provide pillows, foam wedges, rolled towels, or staff assistance to help patients maintain position during scanning.
- **Modified scanning protocols:** Allow breaks between scans if needed and provide clear instructions about scan duration.

- **Extended appointment times:** Schedule additional time to accommodate transfer needs and positioning.

Clinical Decision Points

- **If the patient uses a wheelchair and cannot transfer to the scanning table**: Ensure a height-adjustable table and/or other appropriate transfer aids are available and provide transfer assistance with trained staff.
- **If the patient cannot maintain standard positioning for hip/spine DXA**: Consider lateral distal femur scanning or peripheral DXA at wrist or heel.
- **If the patient has contractures or spasticity preventing standard positioning**: Use alternative scanning sites and positioning supports.
- **If DXA scanning is not possible despite accommodations**: Consider QUS of the heel or other peripheral sites.

Sensory Disabilities (Vision, Hearing, Deafblind)

Clinical Considerations

Patients with sensory disabilities face communication and information-access barriers that can interfere with bone density screening and potentially lead to inadequate care, missed screenings, or traumatic experiences. These barriers are concerning because effective communication is essential for informed consent, proper positioning, and patient safety.

These barriers vary by disability type but are interconnected in their impact on care quality. For patients who are blind or have low vision, they may have difficulty accessing written materials, spatial orientation to exam environment, and procedure positioning. For patients who are deaf or hard of hearing, communication barriers can lead to missed or misunderstood explanations and instructions, resulting in errors in care,

inadequate informed consent, or discomfort during scanning. The lack of qualified interpreters may lead to overreliance on writing or lipreading, which may be inadequate for some patients, and may be problematic for patients who use American Sign Language (ASL) as a first language.

For patients who are deafblind, the challenges are compounded, as they require specialized tactile or adaptive communication support that practitioners may be unfamiliar with. Staff lacking experience with disability-specific communication needs can create additional barriers, leading to frustration, miscommunication, and potentially unsafe care situations.

Accommodation Options

Auxiliary aids and communication support

- Ask the patient what communication method they prefer, and, if unable to provide that method, work with them to choose an alternative that results in effective communication.
- Always speak directly to the patient instead of the patient's support person or interpreter.
- Do not begin any explanation or procedure until the auxiliary aid is present.
- Allow additional time for communication exchange and processing.

For Patients with Hearing Disabilities

- **Provide qualified sign language interpreters** in person or through video remote interpreting (VRI) services, real-time computer-aided transcription services (CART), assistive listening devices and systems, and written materials.

- **Clear visual communication**: Maintain eye contact with the patient, not the interpreter. Position interpreters or visual aids where patients can easily see them whenever possible, and technicians should refrain from verbal communication until the interpreter is in the line of sight of the patient Repeat and spell medical or unfamiliar terms.
- **Alternative breathing cue system:** Develop visual or tactile signaling systems, such as dimming lights, gentle touch, or visual cards, to indicate when to hold breath during imaging.

For Blind or Low-vision Patients

- **Braille or large-print materials:** Provide these upon request in a timely manner. A similar statement may also be included in all print materials: “If you need this information in large print, Braille, or in audio, please contact xxx-xxx-xxxx” (Kailes, 2021).
- **Comprehensive verbal descriptions**: Provide detailed verbal descriptions of the procedure, equipment, room layout, and positioning requirements before and during the examination.
- **Tactile guidance and orientation**: Use appropriate touch (with permission) to guide positioning and provide tactile orientation to equipment and room features.
- **Audio materials**: Offer audio versions of educational materials and instructions.
- **Describe sensations**: Before and during the screening, practitioners should describe sensations patients may experience and provide warning before touching or repositioning to help patients prepare for what they will feel.

For Deafblind Patients

- **Arrange for specialized deafblind interpreters** who can provide tactile sign language interpretation.
- **Tactile communication systems**: Use agreed-upon tactile signals for breathing cues, positioning guidance, and procedural updates.
- **Support person integration**: Work collaboratively with the patient's preferred communication method, interpreter, and support person, while ensuring the patient remains the primary decision maker.

Clinical Decision Points

- **If the patient requests auxiliary aids:** Arrange for auxiliary aid and wait to begin the procedure. Do not proceed without effective communication in place.
- **If the patient's preferred auxiliary aid is unavailable**: Work with the patient to find another method that results in effective communication. Document the alternative method used and if it worked well for the patient for future reference.
- **If the interpreter cannot be seen by the patient**: Reposition the interpreter to ensure a clear line of sight or consider alternative communication methods if repositioning is not possible.
- **If the patient cannot hear or see standard breathing cues**: Implement alternative signaling system (visual cues, tactile signals, or dimming lights) established before procedure begins.
- **If the patient who is blind or has low vision is disoriented**: Provide verbal orientation to room layout and equipment and offer tactile guidance with permission.

Intellectual/Developmental Disabilities

Clinical Considerations

Patients with IDD face barriers to bone density screening related to health care practitioner assumptions, communication challenges, consent processes, and sensory sensitivities. Practitioners may incorrectly assume that screening is not beneficial or that patients cannot understand the procedure. Communication barriers can prevent proper explanation of the screening process. Patients with autism or other developmental disabilities may find the sensory aspects of bone density scanning (positioning, machine sounds, unfamiliar environment) overwhelming without proper preparation.

Accommodation Options

- **Plain language explanations:** Avoid medical jargon and acronyms. Use short sentences under 10 words. Use teach-back techniques to ensure understanding of where the test occurs, how long it takes, what to expect, and the purpose.
- **Visual supports and social stories**: Photos, diagrams, and videos showing the room, equipment, and step-by-step process can reduce anxiety and support understanding.
- **Sensory accommodations:** Ask patients about environmental modifications that would support their sensory needs, such as dimmed lighting, reduced noise, or minimizing other sensory stimuli.
- **Preparatory visits:** Offer pre-visit tours or practice sessions to familiarize patients with the environment, equipment, and staff.
- **Supported decision making:** Collaborate with caregivers while ensuring the patient's preferences and autonomy are respected. Use communication aids or support people as needed but obtain consent from the patient directly whenever possible.

- **Extended appointment times:** Allow additional time for explanation, questions, and accommodation implementation.

Clinical Decision Points

If the patient appears anxious about the procedure: Offer preparatory visit or additional time for explanation and accommodation planning.

If the patient cannot tolerate standard scanning environment: Consider environmental modifications (lighting, noise reduction) or alternative scanning options.

If the patient demonstrates difficulty understanding procedure despite plain language explanation: Use visual aids and teach-back methods to assess comprehension before proceeding.

If the patient needs more time to process information: Allow for extended appointment time, break information up into smaller segments, use multiple communication methods, and confirm understanding at each step.

If the patient's caregiver is reluctant about screening: Provide education about osteoporosis risk in people with IDD, discuss the importance of screening, address caregiver concerns, and emphasize patient autonomy in decision making if appropriate.

Follow-up and Continuity Considerations

Results Communication

Provide results in accessible formats appropriate to the patient's communication needs. Use plain language summaries for patients with intellectual disabilities, ensure interpreter services for deaf patients, and provide large print or Braille formats for patients with vision disabilities. Explain what results mean for the patient's bone health and any recommended follow-up actions.

Documentation of Accommodations

Clearly document all accommodations used and their effectiveness in the patient's medical record. Include specific details about positioning aids, communication methods, and environmental modifications that worked well to facilitate future appointments.

Future Screenings

For patients with disability-specific risk factors, establish individualized screening intervals that may be more frequent than standard recommendations. Ensure that accommodation information is transferred when referring to specialists or other facilities.

Coordination with Specialists

If referring patients for specialized bone health evaluation or treatment, clearly communicate accommodation needs and successful strategies to the receiving provider's office to ensure continuity of accessible care.

Resources

- http://www.lateraldistalfemur.org/
- [reference to the MCD osteoporosis screening guide]

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About Screening for All

Screening For All is an initiative funded by the Centers for Disease Control and Prevention (CDC)'s National Center on Birth Defects and Developmental Disabilities (NCBDDD) to address the significant barriers people with disabilities face in accessing preventive health screenings.

Developed by MCD Global Health, this project provides patients and health care practitioners with evidence-based tools and resources to make preventive health screenings accessible to all patients. Questions or comments can be sent to info@mcd.org. More resources are available at mcd.org/screening-for-all.

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