

Medical Coverage Policy | Vertebral Fracture Assessment



EFFECTIVE DATE: 10|01|2015

POLICY LAST UPDATED: 11|01|2023

OVERVIEW

Vertebral fracture assessment (VFA) with densitometry is a technique to assess vertebral fractures at the same time as bone mineral density, using additional software with dual-energy x-ray absorptiometry. The addition of VFA to bone mineral density may augment diagnostic information on fracture risk.

This policy addresses vertebral fracture assessment **without** densitometry.

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Not applicable

POLICY STATEMENT

Medicare Advantage Plans

Screening for vertebral fractures using dual-energy X-ray absorptiometry (DXA or DEXA), **without bone density study**, is covered, but not separately reimbursed.

Commercial Products

Screening for vertebral fractures using dual-energy X-ray absorptiometry (DXA or DEXA), **without bone density study**, is considered not medically necessary as the evidence is insufficient to determine the effects of the technology on health outcomes.

COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate Benefit Booklet, Evidence of Coverage or Subscriber Agreement for not medically necessary benefits/coverage.

BACKGROUND

Vertebral Fractures

Vertebral fractures are highly prevalent in the elderly population, and epidemiologic studies have found that these fractures are associated with an increased risk of future spine or hip fractures independent of bone mineral density.

Diagnosis

Only 20% to 30% of vertebral fractures are recognized clinically; the rest are discovered incidentally on lateral spine radiographs. Lateral spine radiographs have not been recommended as a component of risk assessment for osteoporosis because of the cost, radiation exposure, and the fact that the radiograph would require a separate procedure in addition to the bone mineral density study using dual-energy x-ray absorptiometry. However, several densitometers with specialized software can perform VFA in conjunction with dual-energy x-ray absorptiometry. The lateral spine scan is performed by using a rotating arm; depending on the densitometer used, the patient can either stay in the supine position after the bone density study or is required to move onto the left decubitus position.

VFA differs from radiologic detection of fractures because VFA uses a lower radiation exposure and can detect only fractures, while traditional radiograph images can detect other bone and soft tissue abnormalities in addition to spinal fractures. Manufacturers have also referred to this procedure as instant vertebral assessment, radiographic vertebral assessment, dual-energy vertebral assessment, or lateral vertebral assessment.

For both lateral spine radiographs and images with densitometry, vertebral fractures are assessed visually. While a number of grading systems have been proposed, the Genant semiquantitative method is commonly used. This system grades the deformities from I to III, with grade I (mild) representing a 20% to 24% reduction in vertebral height, grade II (moderate) representing a 25% to 39% reduction in height, and grade III (severe) representing a 40% or greater reduction in height. The location of the deformity within the vertebrae may also be noted. For example, if only the mid height of the vertebrae is affected, the deformity is defined as an endplate deformity; if both the anterior and mid heights are deformed, it is a wedge deformity; and if the entire vertebrae is deformed, it is classed as a crush deformity. A vertebral deformity of at least 20% loss in height is typically considered a fracture. Accurate interpretation of both lateral spine radiographs and VFA imaging is dependent on radiologic training. Thus, device location and availability of appropriately trained personnel may influence diagnostic accuracy.

For individuals who are at risk of having vertebral fractures but are not known to have them who receive VFA with densitometry by dual-energy x-ray absorptiometry, the evidence includes diagnostic accuracy studies and subgroup reanalyses of treatment studies. Relevant outcomes are test accuracy, test validity, and morbid events. There is a lack of direct evidence from screening trials that use densitometry with and without VFA improves health outcomes. Because direct evidence was not available, a chain of evidence was sought. Evidence was examined on the diagnostic accuracy of VFA in nonosteoporotic patients (ie, those not already eligible for treatment), the ability of VFA to identify patients for treatment who would not otherwise be identified, and the effectiveness of treatment in this population. Diagnostic accuracy studies have reported variable findings; recent studies have suggested higher diagnostic accuracy of VFA overall compared with standard radiographs than older studies. Studies have found that VFA can identify patients without osteoporosis who may be appropriate candidates for treatment according to recommendations from the National Osteoporosis Foundation. However, there is limited evidence on the effectiveness of treatment in this population. No treatment data have been published on patients whose vertebral fracture had been identified using VFA software with densitometry. The evidence is insufficient to determine the effects of the technology on health outcomes.

CODING

Medicare Advantage Plans and Commercial Products

The following CPT code(s) is covered, but not separately reimbursed for Medicare Advantage Plans and is not medically necessary for Commercial Products:

77086 Vertebral fracture assessment via dual-energy X-ray absorptiometry (DXA)

RELATED POLICIES

Bone Mineral Density Studies

Non-Reimbursable Health Service Codes

PUBLISHED

Provider Update, January 2024

Provider Update, January 2023

Provider Update, December 2021

Provider Update, February 2021

Provider Update, January 2020

REFERENCES

1. Malgo F, Hamdy NAT, Ticheler CHJM, et al. Value and potential limitations of vertebral fracture assessment (VFA) compared to conventional spine radiography: experience from a fracture liaison service
2. Lee JH, Lee YK, Oh SH, et al. A systematic review of diagnostic accuracy of vertebral fracture assessment (VFA) in postmenopausal women and elderly men. *Osteoporos Int.* May 2016;27(5):1691-1699. PMID 26782682
3. Domiciano DS, Figueiredo CP, Lopes JB, et al. Vertebral fracture assessment by dual X-ray absorptiometry: a valid tool to detect vertebral fractures in community-dwelling older adults in a population-based survey. *Arthritis Care Res (Hoboken).* May 2013;65(5):809-815. PMID 23212896
4. Ferrar L, Jiang G, Clowes JA, et al. Comparison of densitometric and radiographic vertebral fracture assessment using the algorithm-based qualitative (ABQ) method in postmenopausal women at low and high risk of fracture. *J Bone Miner Res.* Jan 2008;23(1):103-111. PMID 17892377
5. Binkley N, Krueger D, Gangnon R, et al. Lateral vertebral assessment: a valuable technique to detect clinically significant vertebral fractures. *Osteoporos Int.* Dec 2005;16(12):1513-1518. PMID 15834512
6. Cosman F, de Beur SJ, LeBoff MS, et al. Clinician's guide to prevention and treatment of osteoporosis. *Osteoporos Int.* Oct 2014;25(10):2359-2381. PMID 25182228
7. Centre for Metabolic Bone Diseases, University of Sheffield U. FRAX Fracture Risk Assessment Tool: Calculation Tool. n.d.; <https://www.sheffield.ac.uk/FRAX/tool.aspx?country=9>. Accessed August 31, 2017.
8. Kanterewicz E, Puigoriol E, Garcia-Barrionuevo J, et al. Prevalence of vertebral fractures and minor vertebral deformities evaluated by DXA-assisted vertebral fracture assessment (VFA) in a population-based study of postmenopausal women: the FRODOS study. *Osteoporos Int.* May 2014;25(5):1455-1464. PMID 24599272
9. Mrgan M, Mohammed A, Gram J. Combined vertebral assessment and bone densitometry increases the prevalence and severity of osteoporosis in patients referred to DXA scanning. *J Clin Densitom.* Oct-Dec 2013;16(4):549-553. PMID 23769657
10. Jager PL, Jonkman S, Koolhaas W, et al. Combined vertebral fracture assessment and bone mineral density measurement: a new standard in the diagnosis of osteoporosis in academic populations. *Osteoporos Int.* Apr 2011;22(4):1059-1068. PMID 20571773
11. Cummings SR, Black DM, Thompson DE, et al. Effect of alendronate on risk of fracture in women with low bone density but without vertebral fractures: results from the Fracture Intervention Trial. *Jama.* Dec 23-30 1998;280(24):2077-2082. PMID 9875874
12. Quandt SA, Thompson DE, Schneider DL, et al. Effect of alendronate on vertebral fracture risk in women with bone mineral density T scores of -1.6 to -2.5 at the femoral neck: the Fracture Intervention Trial. *Mayo Clin Proc.* Mar 2005;80(3):343-349. PMID 15757015
13. Kanis JA, Barton IP, Johnell O. Risedronate decreases fracture risk in patients selected solely on the basis of prior vertebral fracture. *Osteoporos Int.* May 2005;16(5):475-482. PMID 15875093
14. Cummings SR, Black DM, Thompson DE, et al. Effect of alendronate on risk of fracture in women with low bone density but without vertebral fractures: results from the Fracture Intervention Trial. *JAMA.* Dec 1998; 280(24): 2077-82. PMID 9875874
15. Quandt SA, Thompson DE, Schneider DL, et al. Effect of alendronate on vertebral fracture risk in women with bone mineral density T scores of -1.6 to -2.5 at the femoral neck: the Fracture Intervention Trial. *Mayo Clin Proc.* Mar 2005; 80(3): 343-9. PMID 15757015
16. Kanis JA, Barton IP, Johnell O. Risedronate decreases fracture risk in patients selected solely on the basis of prior vertebral fracture. *Osteoporos Int.* May 2005; 16(5): 475-82. PMID 15875093
17. Bhoopalam N, Campbell SC, Moritz T, et al. Intravenous zoledronic acid to prevent osteoporosis in a veteran population with multiple risk factors for bone loss on androgen deprivation therapy. *J Urol.* Nov 2009; 182(5): 2257-64. PMID 19758618
18. Greenspan SL, Nelson JB, Trump DL, et al. Effect of once-weekly oral alendronate on bone loss in men receiving androgen deprivation therapy for prostate cancer: a randomized trial. *Ann Intern Med.* Mar 202007; 146(6): 416-24. PMID 17371886

19. International Society for Clinical Densitometry. 2019 ISCD Official Positions Adult. 2019; <https://iscd.org/wp-content/uploads/2021/09/2019-Official-Positions-Adult-1.pdf>. Accessed July 20, 2022.
20. Shepherd JA, Schousboe JT, Broy SB, et al. Executive Summary of the 2015 ISCD Position Development Conference on Advanced Measures From DXA and QCT: Fracture Prediction Beyond BMD. *J Clin Densitom.* Jul-Sep 2015; 18(3): 274-86. PMID 26277847
21. Camacho PM, Petak SM, Binkley N, et al. AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS AND AMERICAN COLLEGE OF ENDOCRINOLOGY CLINICAL PRACTICE GUIDELINES FOR THE DIAGNOSIS AND TREATMENT OF POSTMENOPAUSAL OSTEOPOROSIS - 2016. *Endocr Pract.* Sep 02 2016; 22(Suppl 4): 1-42. PMID 27662240
22. Camacho PM, Petak SM, Binkley N, et al. AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS/AMERICAN COLLEGE OF ENDOCRINOLOGY CLINICAL PRACTICE GUIDELINES FOR THE DIAGNOSIS AND TREATMENT OF POSTMENOPAUSAL OSTEOPOROSIS-2020 UPDATE. *Endocr Pract.* May 2020; 26(Suppl 1): 1-46. PMID 32427503
23. Eastell R, Rosen CJ, Black DM, et al. Pharmacological management of osteoporosis in postmenopausal women: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab.* May 2019; 104(5):1595-1622.
24. Qaseem A, Forcica MA, McLean RM, et al. Treatment of Low Bone Density or Osteoporosis to Prevent Fractures in Men and Women: A Clinical Practice Guideline Update From the American College of Physicians. *Ann Intern Med.* Jun 06 2017; 166(11): 818-839. PMID 28492856
25. McClung MR, Pinkerton JV, Blake J, et al. Management of osteoporosis in postmenopausal women: the 2021 position statement of The North American Menopause Society. *Menopause.* Sep 01 2021; 28(9):973-997. PMID 34448749
26. Curry SJ, Krist AH, Owens DK, et al. Screening for Osteoporosis to Prevent Fractures: US Preventive Services Task Force Recommendation Statement. *JAMA.* Jun 26 2018; 319(24): 2521-2531. PMID 29946735
27. U.S. Preventive Services Task Force (USPSTF). Draft Research Plan. Osteoporosis to Prevent Fractures: Screening. August 12, 2021; <https://www.uspreventiveservicestaskforce.org/uspstf/document/draft-research-plan/osteoporosis-screening-prevent-fractures>. Accessed July 20, 2022.

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