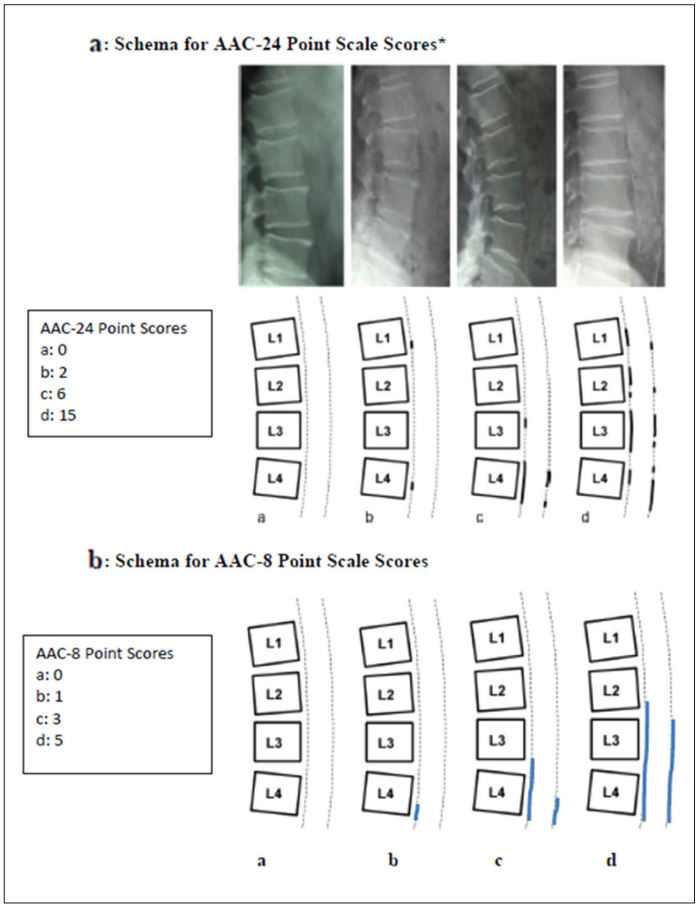
Key Literature on Abdominal Aortic Calcification

Abdominal Aortic Calcification Detected on Lateral Spine Images From a Bone Densitometer Predicts Incident Myocardial Infarction or Stroke in Older Women.

Schousboe JT, Taylor BC, Kiel KP et al. Abdominal Aortic Calcification Detected on Lateral Spine Images From a Bone Densitometer Predicts Incident Myocardial Infarction or Stroke in Older Women. Bone Miner Res. 2008; 23:3.

- "Cardiovascular disease (CVD) risk among older women is not adequately captured by traditional CVD risk factors. Lateral spine images obtained on bone densitometers for vertebral fracture assessment (VFA) can detect abdominal aortic calcification (AAC), an important marker of subclinical CVD".
- "Supine lateral and lateral decubitus imaging yield spine images of similar quality, and on both, the aorta can be visualised sufficiently on VFA for AAC to be scored in 90% of postmenopausal women".
- "Many women within the intermediate risk of coronary heart disease based on the FPS (10-yr coronary disease risk of 11–20%) may benefit the most from the detection of AAC on VFA images, in that if a VFA shows an AAC-8 score of 3 or higher or an AAC-24 score of 6 or higher, the 10-yr probability of incident coronary disease for them may exceed 20%".
- "Simultaneous assessment for AAC on VFA images in this population may increase the use of the procedure even further".
- "VFA imaging has the advantage over other imaging modalities of lower cost and greater convenience, and in comparison with CT imaging, much lower radiation exposure".



Semi-quantitative AAC scoring with Kauppila AAC24 scale and AAC8 scale.

Abdominal aortic calcification on dual-energy X-ray absorptiometry: Methods of assessment and clinical significance

Schousboe JT, Lewis JR, Kiel DP. Abdominal aortic calcification on dual-energy X-ray absorptiometry: Methods of assessment and clinical significance. J Bone. 2017;104:91-100.

- "Studies showing that AAC can be accurately scored on densitometric lateral spine images intended for vertebral fracture assessment, and initial studies showing that AAC scored on VFA images is associated with incident cardiovascular disease, has raised the possibility that densitometric lateral spine imaging may have a role in cardiovascular disease risk prediction".
- "A recent study using densitometric lateral spine images, standard lateral spine radiographs and lumbar spine QCT detected AAC in 55%, 58%, and 60% of the subjects, respectively, using these different modalities".
- "AAC is commonly found incidentally on densitometric lateral spine images and is generally not included in the DXA report. While the presence of AAC on densitometric lateral spine images is currently considered an incidental finding, the extent and morphology of the calcification may be considered as an additional risk factor for future ASCVD". [Atherosclerotic Cardiovascular Disease]
- "One recent study has estimated that 17% of those age 65 to 74 and 23% of those age 75 to 80 (98% of whom were female) undergoing densitometric lateral spine imaging have a high level of AAC, yet are not known to have cardiovascular disease".
- "In summary, while only a handful of prospective studies have investigated how well AAC on lateral spine images predicts incident ASCVD events, by and large they have consistently shown that the presence and severity of AAC is associated with the presence of ASCVD and long-term risk of related disease events".

Long-Term Atherosclerotic Vascular Disease Risk and Prognosis in Elderly Women With Abdominal Aortic Calcification on Lateral Spine Images Captured During Bone Density Testing: A Prospective Study

Lewis JR, Schousboe JT, Lim WH et al. Long-Term Atherosclerotic Vascular Disease Risk and Prognosis in Elderly Women With Abdominal Aortic Calcification on Lateral Spine Images Captured During Bone Density Testing: A Prospective Study. J Bone Miner Res. 2018;33(6):1001-1010.

- "All abdominal aortic calcification scores from 0 to 24 were derived from digitally enhanced lateral single-energy images of the thoracolumbar spine using a Hologic 4500A machine (Hologic, Marlborough, MA, USA)".
- "Additionally, using these images may form the basis of low-cost routine community-based initiatives to improve current CVD prevention strategies such as weight loss, improved diet, and increased physical activity, as well as drug therapy with statins".
- "More than 99.5% of the captured lateral spine images were of sufficient quality to assess AAC".
- "First, we showed that the majority of older women undertaking bone density testing had evidence of AAC, while advanced or severe AAC is seen in almost one in five of these women".
- "In conclusion, we found that AAC identified using low-cost, very low radiation scanning densitometry was associated with increased risk of atherosclerotic disease events and reduced long-term survival in elderly white women. These associations were particularly evident in women with severe AAC. These findings suggest that when severe AAC is observed on images in older women undergoing VFA this should be reported to the treating physician".

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