

**The added value of SPECT/CT in the painful foot and ankle: A Literature Review**, Eelsing, et al. *Foot and Ankle Surgery*, 27(7), 715–722 (2021).

DOI: <https://doi.org/10.1016/j.fas.2020.09.009>

**Level of Evidence:** 5

**Reviewer:** Allysa M. Vavra M.S., MS-IV  
*Temple University School of Podiatric Medicine*

The goal of this literature review to evaluate how often a SPECT (Single Photon Emission-Computed Tomography)-CT leads to a change in management in patients with unexplained foot and ankle pain. Until this review, there was little evidence to support the diagnostic value of SPECT-CT. Groves et. al was the first study to use the CT in combination with SPECT and studies thereafter have utilized this modality to visualize pathology in soft tissue and bones by showing increased bone turnover in combination with morphologic changes. This review compiled data from PubMed and EMBASE to include studies that focused on SPECT-CT and foot and ankle pain/injuries to evaluate the diagnostic value of a SPECT-CT study.

PubMed and EMBASE were utilized to search for eligible articles. Included articles were those where patients had a SPECT-CT study for foot and ankle pain, a diagnostic study design, information on the impact of SPECT-CT on change of management or improved diagnosis and a study published between 1/2004-12/2019. Articles that were excluded were those where patients had infection, neoplasm, neuropathic or cardiovascular disease/disorder, case control studies or reports and conference abstracts. There were a total of 8 studies with a total of 313 patients included in the data set. Change in management was defined in 5 studies and in 247 patients. It was found that SPECT-CT had changed management in 67% of patients when compared to clinical diagnosis and plain radiograph, 64% of patients when compared to plain radiograph alone and 48% when compared to MRI only. Improved diagnosis was defined in 4 studies.

It was found that SPECT-CT resulted in improved diagnosis by 60% as compared to clinical examination and plain radiograph alone, 79% compared to plain radiographs, 56% compared with clinical examination alone, 72% compared to 2 base bone scan, 40% compared to CT and 40% compared to SPECT alone. Symptomatic improvement was considered at in 4 studies and found that SPECT-CT decreased a VAS score by more than 50% in 92% of patients. The study was found to be high quality with low risk of bias.

This study found that SPECT-CT can be a useful modality when results from a clinical examination, plain radiograph, CT or MRI is inconclusive or when those treatment options do not result in symptomatic improvement. However, there is a need for further research on SPECT-CT to evaluate whether it would be helpful in diagnosing acute foot and ankle pathology.

---



**ACPM**  
American College of Podiatric Medicine  
Education | Research | Advocacy