

Table 4: Summary of Recommendations in Included Guidelines

Recommendations (strength of recommendations, levels of evidence)
EANM, EBJIS, ESR, and ESCMID, Glaudemans et al., 2019 ¹¹
<p>The strength of the following recommendations (e.g., strong or weak) was not provided.</p> <p><i>“Statements on the diagnosis of peripheral bone infection</i></p> <ul style="list-style-type: none"> – <i>Patients presenting with clinical and radiological signs of peripheral bone infection or a positive probe-to-bone test may require further diagnostic procedures. (Level of evidence^a: 5)</i> – <i>Fistula direct to the bone and purulent discharge are evidence of bone infection. (Level of evidence^a: 5)</i> – <i>C-reactive protein, erythrocyte sedimentation rate, and white blood cell counts should always be performed in patients suspected to have peripheral bone infection for diagnosis purposes. (Level of evidence^a: 4)</i> – <i>Blood cultures should be considered in patients with fever suspected to have peripheral bone infection for the diagnosis the involved bacteria. (Level of evidence^a: 4)</i> – <i>Conventional radiography is the first imaging modality to be performed in patients suspected of having peripheral bone infection for diagnosis and follow-up. (Level of evidence^a: 3)</i> – <i>In case of clinical and radiological signs of peripheral bone infection, bone biopsy is the reference standard for confirming infection and identifying the causative microorganism. (Level of evidence^a: 4)</i> – <i>In case of clinical and radiological signs of peripheral bone infection, sinus tract cultures and/or superficial swab cultures should be discouraged in the diagnostic work-up; bone biopsy is the gold standard. (Level of evidence^a: 4)</i> – <i>CT should be used as an adjunct to conventional radiographs in complex anatomic areas and is useful to detect bone sequestra. (Level of evidence^a: 4)</i> – <i>Non-contrast MRI had high diagnostic performance in detecting peripheral bone infection. (Level of evidence^a: 2)</i> – <i>Three-phase bone scintigraphy is a sensitive technique in patients suspected for peripheral bone infection although not highly specific. (Level of evidence^a: 2)</i> – <i>White blood cell (WBC) scintigraphy and antigranulocyte antibody (AGA) scintigraphy have similar diagnostic accuracy for diagnosis of peripheral bone infection. (Level of evidence^a: 2)</i> – <i>¹⁸F-FDG-PET has high diagnostic accuracy in peripheral bone infection without fracture and osteosynthesis. (Level of evidence^a: 2)</i> – <i>Hybrid SPECT-CT WBC imaging can be performed for exact localization of infection site. (Level of evidence^a: 2)</i> – <i>When having a suspicion for hematogenous spread of the infection, ¹⁸F-FDG-PET/CT is the first imaging modality of choice. (Level of evidence^a: 5)”</i>¹¹ p. 961 to 967
UMHS, Mills et al., 2019 ¹²
<p>Diabetic foot infections</p> <ul style="list-style-type: none"> – <i>“If osteomyelitis is suspected, obtain bone culture to guide antibiotic therapy rather than soft tissue culture if clinically feasible; do not obtain superficial swab. (Strength of recommendation^b: I; Level of evidence^c: C)</i> – <i>Obtain foot radiographs for initial evaluation of suspected non-superficial soft tissue infection or osteomyelitis. (Strength of recommendation^b: I; Level of evidence^c: C)</i> – <i>Perform MRI as the next imaging test if soft tissue abscess is suspected. (Strength of recommendation^b: II; Level of evidence^c: E)</i> – <i>If osteomyelitis is suspected despite negative or equivocal radiograph, or if additional imaging is needed to evaluate the extend of osteomyelitis, perform an MRI as the next imaging test. (Strength of recommendation^b: I; Level of evidence^c: C)</i> – <i>Obtain a triple-phase bone scan in combination with tagged WBC scan if MRI cannot be obtained but further evaluation of osteomyelitis is needed. (Strength of recommendation^b: I; Level of evidence^c: C)”</i>¹² p.1
IDSA, Berbari et al., 2015 ¹³
<p><i>“What is the appropriate diagnostic evaluation of patients with suspected NVO?</i></p>

Recommendations (strength of recommendations, levels of evidence)

- We recommend performing a pertinent medical and motor/sensory neurologic examination in patients with suspected NVO. (Strong recommendation; Low-quality evidence)^d
- We recommend obtaining bacterial (aerobic and anaerobic) blood cultures (2 sets) and baseline erythrocyte sedimentation rate and C-reactive protein in all patients with suspected NVO. (Strong recommendation; Low-quality evidence)^d
- We recommend a spine MRI in patients with suspected NVO. (Strong recommendation; Low-quality evidence)^d
- We suggest a combination of spine gallium/Tc99 bone scan, or computed tomography scan or a positron emission tomography scan in patients with suspected NVO when MRI cannot be obtained (e.g., implantable cardiac devices, cochlear implants, claustrophobia, or unavailability). (Weak recommendation; Low-quality evidence)^d
- We recommend obtaining blood cultures and serologic tests for *Brucella* species in patients with subacute NVO residing in endemic areas for brucellosis. (Strong recommendation; Low-quality evidence)^d
- We suggest obtaining fungal blood cultures in patients with suspected NVO and at risk for fungal infection (epidemiology risk or host risk factors). (Weak recommendation; Low-quality evidence)^d
- We suggest performing a purified protein derivative (PPD) test or obtaining an interferon- γ release assay in patients with subacute NVO and at risk for *Mycobacterium tuberculosis* NVO (i.e., originating or residing in endemic regions or having risk factors). (Weak recommendation; Low-quality evidence)^d
- In patients with suspected NVO, evaluation by an infectious disease specialist and a spine surgeon may be considered. (Weak recommendation; Low-quality evidence)^{d,m13} p. e27

CT = computed tomography; EANM = European Association of Nuclear Medicine; EBJS = European Bone and Joint Infection Society; ESCMID = European Society of Microbiology and Infectious Disease; ESR = European Society of Radiology; IDSA = Infectious Diseases Society of America; MRI = magnetic resonance imaging; NVO = native vertebral osteomyelitis; PET = positron emission tomography; SPECT = single-photon emission computed tomography; UMHS = University of Michigan Health System; WBC = white blood cell.

^a Level of evidence

Level 1: Systematic review of randomized trials

Level 2: Randomized trial

Level 3: Non-randomized controlled cohort/follow-up study

Level 4: Case-series, case-control, or historical controlled studies

Level 5: Mechanism-based reasoning

^b Strength of recommendation:

I = Generally should be performed

II = May be reasonable to perform

III = Generally should not be performed

^c Level of evidence:

A = systematic review of randomized controlled trials with or without meta-analysis

B = randomized controlled trials

C = systematic review of non-randomized controlled trials or observational studies, non-randomized controlled trials, group observational studies (cohort, cross-sectional, case-control)

D = individual observational studies (case study/case series)

E = expert opinion regarding benefits and harm

^d Details of the strength of recommendations, quality of evidence, clarity of balance between desirable and undesirable effects, and implications are presented in the published guideline.¹³ The recommendations were graded from strong to weak, while the quality of evidence was assessed as high quality to very low quality. The strength of recommendation and the quality of the evidence were presented together based on the clarity of balance between desirable and undesirable effects, the methodological quality of supporting evidence and implications of recommendations.