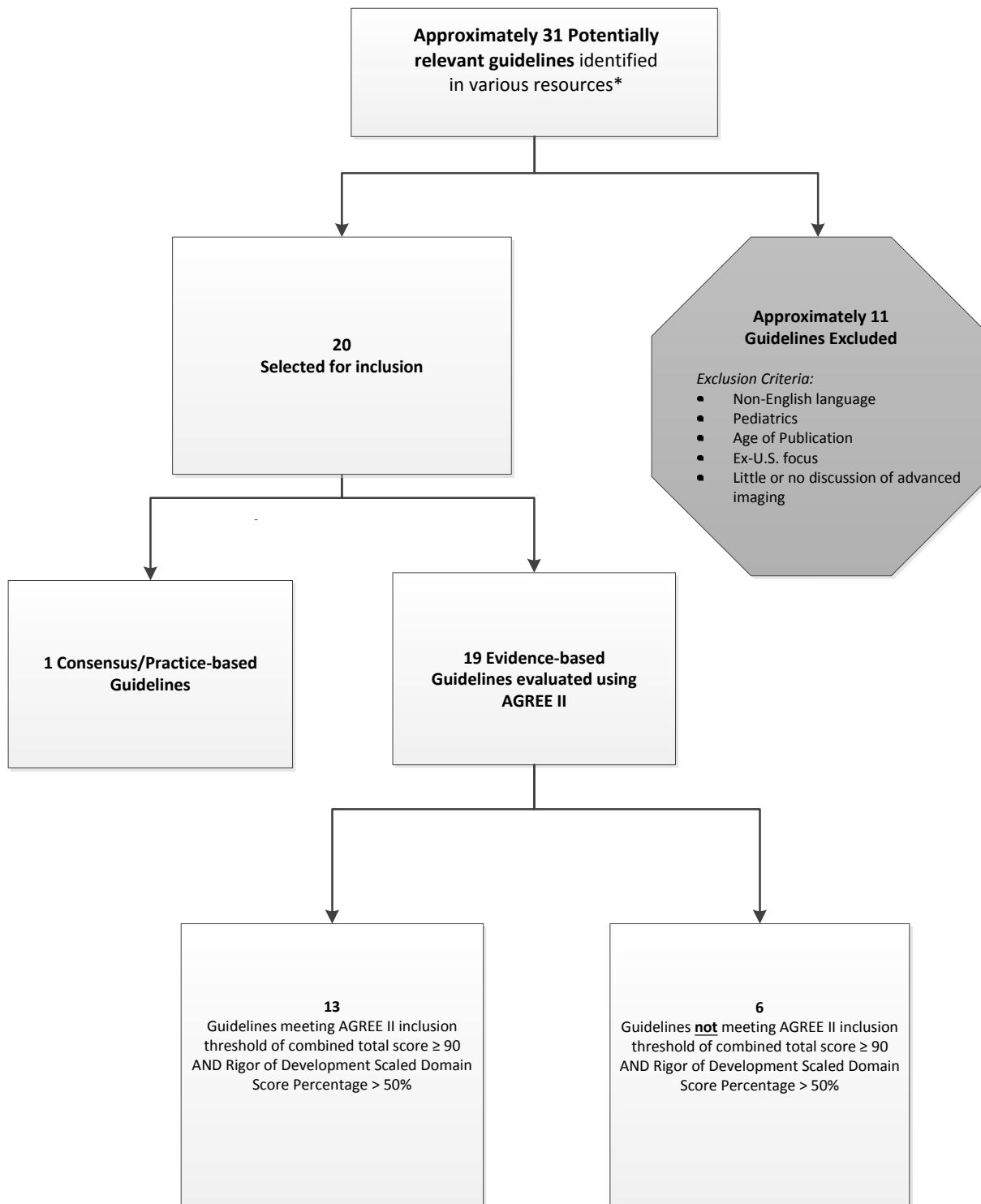


Evidence Process for Ankle Guideline Research

Guideline Review using AGREE II instrument – 07/25/2019



\*Information Resources:

Ovid Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
Additional Internet and bibliographic searches were performed for all phases of research

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Evidence Process for Ankle Research 07/25/2019

**Systematic Literature Research – Ovid Medline Database**

**Combined Evidence Tables References**

22 Observational Studies  
3 Systematic Reviews and Meta-Analyses  
0 Physician reviews

\*Note: due to overlapping search results, a number of abstracts screened were duplicated across PICOs but only appear once in the Evidence Table to avoid repetition. See specific research process flowcharts for detailed search logic and results

**\*Information Resources:**

Ovid EmBase and Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
Additional Internet and bibliographic searches were performed for all phases of research

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**Systematic Literature Research – Ovid Medline Database (01/01/2014 – 07/25/2019)**

**PICO: Ankle and/or hind foot pain and/or instability with suspected structural derangement\* after an acute injury**

1. ("ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal").mp.
2. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsi" or "sinus tarsus" or "hind foot" or "rear foot").mp.
3. ("injury" or "injuries" or "trauma" or "traumas").mp.
4. (1 or 2) and 3
5. ("ankle injuries" or "ankle injury" or "ankle sprain" or "ankle sprains" or "injuries, ankle" or "injuries, syndesmotic" or "injury, ankle" or "injury, syndesmotic" or "sprain, ankle" or "sprains, ankle" or "syndesmotic injuries" or "syndesmotic injury").mp.
6. 4 or 5
7. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
8. 6 and 7
9. (case adj2 (report or reports or study or studies)).mp.
10. 8 not 9
11. limit 10 to (english language and humans and yr="2014 -Current" and "all adult (19 plus years)")

**813 results, 426 results after duplicates from previous searches removed**

**12 Abstracts Screened**

2 Systematic Reviews  
8 Retrospective Studies  
2 Cohort Studies

**4\* Evidence Table References**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICOs but only appear once in the Evidence Table to avoid repetition

**\*Information Resources:**

Ovid EmBase and Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
Additional Internet and bibliographic searches were performed for all phases of research

**Systematic Literature Research – Ovid Medline Database (01/01/2014 – 07/25/2019)**

**PICO: Nontraumatic (chronic) ankle and/or hind foot pain persisting after an appropriate trial of conservative care and no major abnormalities on radiographs**

1. (("nontraumatic" or "non-traumatic" or "chronic") and ("pain" or "pains")).mp.
2. ("ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal").mp.
3. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsi" or "sinus tarsus" or "hind foot" or "rear foot").mp.
4. 1 and (2 or 3)
5. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
6. 4 and 5
7. (case adj2 (report or reports or study or studies)).mp.
8. 6 not 7
9. limit 8 to (english language and humans and yr="2014 -Current" and "all adult (19 plus years)")

87 results; 76 results after duplicates from previous searches removed

**7 Abstracts Screened**

1 Systematic Review  
1 Prospective Study  
3 Retrospective Studies  
2 Cohort Studies



**5\* Evidence Table References**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICO's but only appear once in the Evidence Table to avoid repetition

**\*Information Resources:**

Ovid EmBase and Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
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**Systematic Literature Research – Ovid Medline Database (No Start Date – 07/25/2019)****PICO: Ankle and/or hind foot pain with fracture(s) on radiographs and a need for surgical planning**

1. ("ankle fracture" or "ankle fracture, bimalleolar" or "ankle fracture, trimalleolar" or "ankle fractures" or "ankle fractures, bimalleolar" or "ankle fractures, trimalleolar" or "bimalleolar ankle fracture" or "bimalleolar ankle fractures" or "bimalleolar equivalent ankle fractures" or "bimalleolar equivalent fracture" or "bimalleolar equivalent fractures" or "bimalleolar fracture" or "bimalleolar fractures" or "equivalent fracture, bimalleolar" or "equivalent fractures, bimalleolar" or "fracture, ankle" or "fracture, bimalleolar" or "fracture, bimalleolar ankle" or "fracture, bimalleolar equivalent" or "fracture, lateral malleolus" or "fracture, medial malleolus" or "fracture, posterior malleolus" or "fracture, trimalleolar" or "fracture, trimalleolar ankle" or "fractures, ankle" or "fractures, bimalleolar" or "fractures, bimalleolar ankle" or "fractures, bimalleolar equivalent" or "fractures, lateral malleolus" or "fractures, medial malleolus" or "fractures, posterior malleolus" or "fractures, trimalleolar" or "fractures, trimalleolar ankle" or "lateral malleolus fracture" or "lateral malleolus fractures" or "malleolus fracture, lateral" or "malleolus fracture, medial" or "malleolus fracture, posterior" or "malleolus fractures, lateral" or "malleolus fractures, medial" or "malleolus fractures, posterior" or "medial malleolus fracture" or "medial malleolus fractures" or "posterior malleolus fracture" or "posterior malleolus fractures" or "trimalleolar ankle fracture" or "trimalleolar ankle fractures" or "trimalleolar fracture" or "trimalleolar fractures").mp.
2. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsi" or "sinus tarsus" or "hind foot" or "rear foot" or "ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal" or "cuboid" or "cuneiform" or "navicular" or "naviculare" or "naviculares" or "astralgus" or "trigonum" or "malleolus" or "malleolar").mp.
3. ("fracture" or "fractures").mp.
4. 1 or (2 and 3)
5. ("preoperative " or "pre-operative" or "pre-op" or "surgery" or "surgical" or "surgeries").mp.
6. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
7. 4 and 5 and 6
8. limit 7 to (english language and humans and "all adult (19 plus years)")
9. (case adj2 (report or study or reports or studies)).mp.
10. 8 not 9

1312 results, 1200 results after duplicates from previous searches removed

**10 Abstracts Screened**  
**2 Prospective Studies**  
**8 Retrospective Studies**

**5\* Evidence Table References**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICO's but only appear once in the Evidence Table to avoid repetition

**\*Information Resources:**

Ovid EmBase and Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
 Additional Internet and bibliographic searches were performed for all phases of research

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**Systematic Literature Research – Ovid Medline Database (01/01/2014 – 07/25/2019)**

**PICO: Ankle and/or hind foot pain with suspected stress or insufficiency reaction/fracture and negative or indeterminate radiographs**

1. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsi" or "sinus tarsus" or "hind foot" or "rear foot").mp.
2. ("ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal" or "cuboid" or "cuneiform" or "navicular" or "astralgus" or "trigonum").mp.
3. ("stress reaction" or "stress reactions" or "fatigue fracture" or "fatigue fractures" or "fracture, fatigue" or "fracture, insufficiency" or "fracture, march" or "fracture, micro" or "fracture, stress" or "fractures, fatigue" or "fractures, march" or "fractures, micro" or "fractures, stress" or "insufficiency fracture" or "insufficiency fractures" or "march fracture" or "march fractures" or "micro fracture" or "micro fractures" or "microfracture" or "microfractures" or "stress fracture" or "stress fractures" or "stress reaction, bone").mp.
4. (1 or 2) and 3
5. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
6. 4 and 5
7. (case adj2 (report or reports or study or studies)).mp.
8. 6 not 7
9. limit 8 to (english language and humans and yr="2014 -Current" and "all adult (19 plus years)")

47 results; 24 results after duplicates from previous searches removed

**4 Abstracts Screened  
3 Prospective Studies  
1 Retrospective Study**

**0\* Evidence Table References**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICOs but only appear once in the Evidence Table to avoid repetition

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**Systematic Literature Research – Ovid Medline Database (01/01/2014 – 07/25/2019)**

**PICO: Nontraumatic (chronic) ankle and/or hind foot pain with moderate to severe osteoarthritis (OA) on initial radiographs**

1. ("osteoarthritis" or "osteoarthroses" or "osteoarthrosis" or "arthritides, degenerative" or "arthritis, degenerative" or "degenerative arthritides" or "degenerative arthritis" or "osteoarthritides" or "osteoarthrosis deformans").mp.
2. ("ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal").mp.
3. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsi" or "sinus tarsus" or "hind foot" or "rear foot").mp.
4. 1 and (2 or 3)
5. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
6. 4 and 5
7. limit 6 to (english language and humans and yr="2014 -Current" and "all adult (19 plus years)")
8. (case adj2 (report or reports or study or studies)).mp.
9. 7 not 8

311 results, 277 results after duplicates from previous searches removed

**4 Abstracts Screened**  
2 Retrospective Studies  
2 Cohort Studies

**1\* Evidence Table References**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICOs but only appear once in the Evidence Table to avoid repetition

**\*Information Resources:**

Ovid EmBase and Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
Additional Internet and bibliographic searches were performed for all phases of research

**Systematic Literature Research – Ovid Medline Database (01/01/2014 – 07/25/2019)**

**PICO: Ankle and/or hind foot pain with suspicion of osteochondral defect (OCD) or avascular necrosis (osteonecrosis)**

1. ("osteochondral defect" or "osteochondral defects").mp.
2. ("AVN" or "aseptic necrosis" or "avascular necrosis" or "aseptic necrosis" or "bone necroses" or "bone necrosis" or "kienbock disease" or "kienbock's disease" or "kienboeck disease" or "kienboeck's disease" or "kienboecks disease" or "necroses, bone" or "necrosis, aseptic" or "necrosis, avascular" or "necrosis, bone" or "osteonecroses" or "osteonecrosis").mp.
3. ("ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal" or "cuboid" or "cuneiform" or "navicular" or "astralgus" or "trigonum").mp.
4. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsi" or "sinus tarsus" or "hind foot" or "rear foot").mp.
5. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
6. (1 or 2) and (3 or 4) and 5
7. (case adj2 (report or reports or study or studies)).mp.
8. 6 not 7
9. limit 8 to (english language and humans and yr="2014 -Current" and "all adult (19 plus years)")

62 results; 40 results after duplicates removed

**7 Abstracts Screened**

- 1 Prospective Study
- 5 Retrospective Studies
- 1 Cohort Study

**4\* Evidence Table References**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICO's but only appear once in the Evidence Table to avoid repetition

**\*Information Resources:**

Ovid EmBase and Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
Additional Internet and bibliographic searches were performed for all phases of research



## Evidence Process for Ankle Research 07/25/2019

## Systematic Literature Research – Ovid Medline Database (01/01/2014 – 07/25/2019)

**PICO: Ankle and/or hind foot pain with suspicion of septic arthritis, osteomyelitis, or neuropathic arthropathy**

1. ("arthritis, bacterial" or "arthritis, bacterial" or "arthritis, infectious" or "arthritis, septic" or "arthritis, suppurative" or "arthritis, viral" or "bacterial arthritides" or "bacterial arthritis" or "infectious arthritis" or "septic arthritis" or "suppurative arthritis" or "viral arthritis").mp.
2. ("osteomyelitides" or "osteomyelitis").mp.
3. ("arthropathies, neurogenic" or "arthropathy, neurogenic" or "charcot joint" or "charcot's joint" or "charcots joint" or "joint, charcot's" or "neurogenic arthropathies" or "neurogenic arthropathy" or "neuropathic arthropathy" or "neuropathic arthropathies" or "charcot " or "charcots" or "charcot's").mp.
4. ("ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal").mp.
5. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsi" or "sinus tarsus" or "hind foot" or "rear foot").mp.
6. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
7. (1 or 2 or 3) and (4 or 5) and 6
8. limit 7 to (english language and humans and yr="2014 -Current" and "all adult (19 plus years)")
9. (case adj2 (report or reports or study or studies)).mp.
10. 8 not 9

45 results, 37 results after duplicates from previous searches removed

**2 Abstracts Screened**  
**1 Prospective study**  
**1 Cohort study**

**2\* Evidence Table References**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICOs but only appear once in the Evidence Table to avoid repetition

## \*Information Resources:

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 Additional Internet and bibliographic searches were performed for all phases of research

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**Systematic Literature Research – Ovid Medline Database (01/01/2014 – 07/25/2019)**

**PICO: Ankle and/or hind foot pain with suspicion of foreign body and negative or indeterminate radiographs**

1. ("bodies, foreign" or "body, foreign" or "foreign bodies" or "foreign body" or "foreign object" or "foreign objects" or "gossypiboma" or "gossypibomas" or "object, foreign" or "objects, foreign" or "retained surgical instrument" or "retained surgical instruments" or "retained surgical item" or "retained surgical items" or "retained surgical needle" or "retained surgical needles" or "retained surgical sponge" or "retained surgical sponges" or "retained surgical tool" or "retained surgical tools" or "surgical instrument, retained" or "surgical instruments, retained" or "surgical item, retained" or "surgical items, retained" or "surgical needle, retained" or "surgical needles, retained" or "surgical sponge, retained" or "surgical sponges, retained" or "surgical tool, retained" or "surgical tools, retained" or "textiloma" or "textilomas").mp.
2. ("ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal").mp.
3. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsi" or "sinus tarsus" or "hind foot" or "rear foot").mp.
4. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
5. 1 and (2 or 3) and 4
6. limit 5 to (english language and humans and yr="2014 -Current" and "all adult (19 plus years)")
7. (case adj2 (report or reports or study or studies)).mp.
8. 6 not 7

1 result, 0 results after duplicates from previous searches removed

**0 Abstracts Screened**

**0\* Evidence Table References**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICOs but only appear once in the Evidence Table to avoid repetition

**\*Information Resources:**

Ovid EmBase and Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
Additional Internet and bibliographic searches were performed for all phases of research

**Systematic Literature Research – Ovid Medline Database (01/01/2014 – 07/25/2019)**

**PICO: Ankle and/or hind foot pain with suspicion of a hind foot (tarsal) coalition and negative or indeterminate radiographs**

1. ("ankle" or "ankles" or "regio tarsalis" or "tarsus" or "tarsal" or "cuboid" or "cuneiform" or "navicular" or "naviculare" or "naviculares" or "astralgus" or "trigonum" or "malleolus" or "malleolar").mp.
2. ("hindfoot" or "rearfoot" or "heel" or "heels" or "calcaneus" or "sinus tarsus" or "sinus tarsus" or "hind foot" or "rear foot").mp.
3. ("synostoses" or "synostosis" or "coalition" or "coalitions").mp.
4. (1 or 2) and 3
5. (CT or compute\* tomography or CTA or MRI or MRA or magnetic resonance or imaging or bone scan or scintigraphy or HDP or MDP or 99mTc or PET or SPECT or nuclear medicine or Ga-67 or Tc-99m WBC or In-111 WBC).mp.
6. 4 and 5
7. limit 6 to (english language and humans and yr="2014 -Current" and "all adult (19 plus years)")
8. (case adj2 (report or reports or study or studies)).mp.
9. 7 not 8

16 results, 15 results after duplicates from previous searches removed

**3 Abstracts Screened**  
**3 Retrospective studies**

**1\* Evidence Table Reference**

\*note: due to overlapping search results, a number of abstracts screened were duplicated across PICO's but only appear once in the Evidence Table to avoid repetition

**\*Information Resources:**

Ovid EmBase and Medline, NCBI PubMed, National Guideline Clearinghouse, Guidelines International Network, TRIP Database, Choosing Wisely, Cochrane Database, Agency for Healthcare Research and Quality, and numerous specialty society websites  
Additional Internet and bibliographic searches were performed for all phases of research

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