Mimics

- **Septic Arthritis**
  - Septic arthritis rarely bilateral
  - Bilateral involvement may result from hematogenous infection
  - Bilateral involvement may occur with repeated high-risk behavior such as IV drug abuse
- **Rheumatoid Arthritis**
  - Relatively frequently affects SIJs
    - » Erosions, generally bilaterally symmetric
    - » Osteoporosis
    - » No sclerosis or evidence of reparative bone
    - » No ligament ossification
  - Though present, erosions generally not readily evident
  - Peripheral joint disease far outweighs SIJ disease

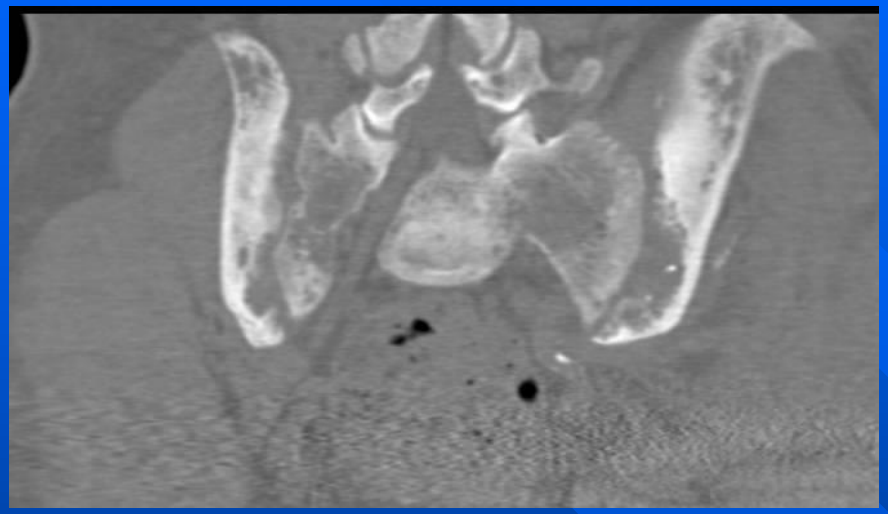
Diffuse Idiopathic Skeletal Hyperostosis (Mimic)

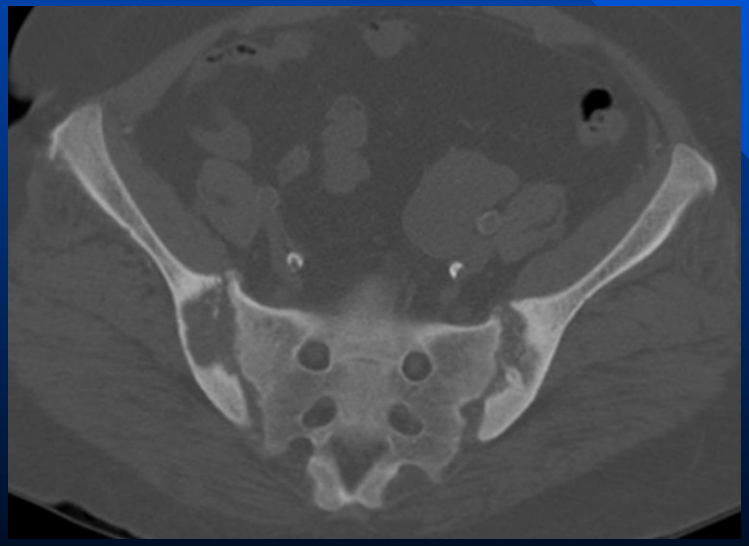
- Purely productive, not articular process
  - Anterior sacroiliac ligaments ossify anterior to proximal SIJs
  - Iliolumbar ligaments located superior to SIJs may ossify & bridge
  - Nonarticular superior portion of SIJ may ossify & appear fused
  - Synovial (inferior) portion of SIJ not affected by DISH
- Ossified superior portions of SIJs appear symmetric & may mimic end-stage sacroiliitis
  - Should be easily differentiated since true SIJ is not involved
- Other axial features
  - Ossification sacrotuberous or sacrospinal ligaments
  - Bulky bridging anterior ossification along spine, particularly thoracic

Renal Osteodystrophy (Mimic)

- SIJs may appear widened & irregular
- Most frequently bilateral and symmetric
- Not true sacroiliitis but rather resorptive process
  - Subchondral resorption on iliac side
  - With weight-bearing, resorbed bone collapses, resulting in apparent widening and erosions
- Differentiating features: Other signs of renal osteodystrophy or hyperparathyroidism
  - Abnormal bone density
  - Other evidence of hyperparathyroidism: Subperiosteal, subligamentous resorption around pelvis and in appendicular skeleton
  - Brown tumors
  - Evidence of prior renal transplant
  - Vascular calcifications widespread

Renal Osteodystrophy (Mimic)



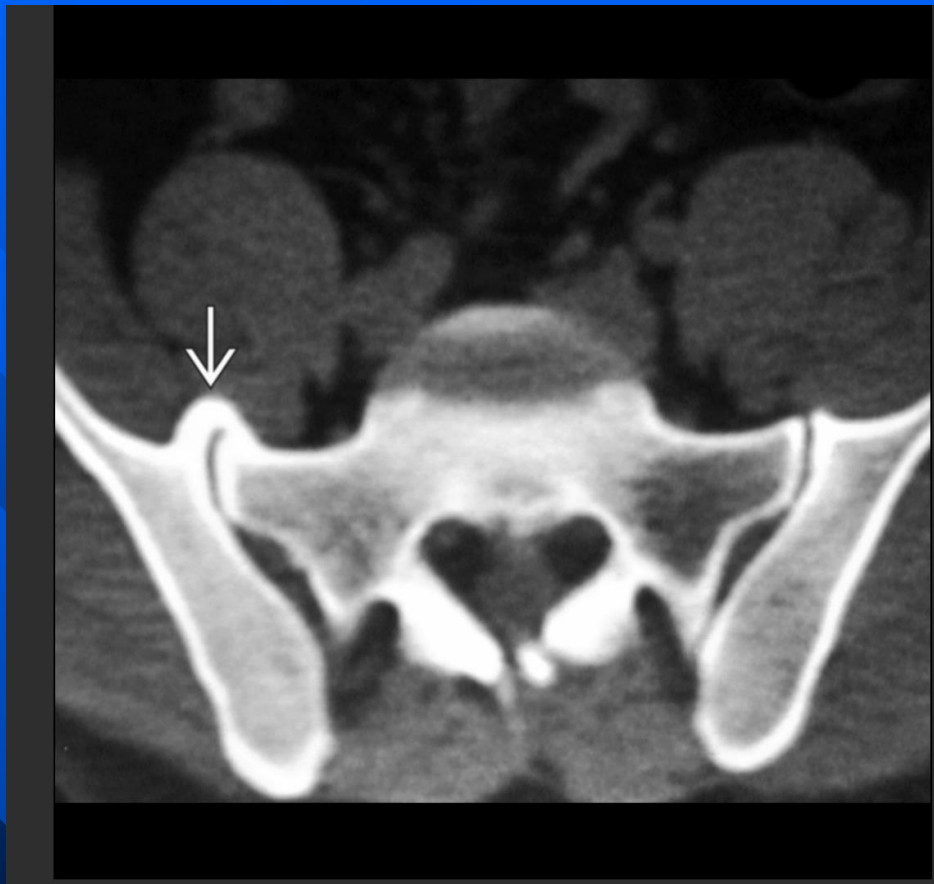


Osteoarthritis (Mimics)

- Purely productive; osteophytes tend to bridge anteriorly at superior & inferior ends of synovial portion of SIJ
- May mimic sclerosis of sacroiliitis
- May appear as rounded region of sclerosis overlying mid SIJ
- May mimic sclerotic metastatic site

Osteoarthritis

- SI joint (SIJ) osteoarthritis (OA): generally 2 appearances
  - Sclerosis along cortex of synovial portion of SIJ
    - » No erosion or ankylosis
  - Marginal osteophytes
    - » Either at bottom of SIJ or at junction of synovial and nonsynovial portion (1/2 to 1/3 of distance from top of SIJ)
    - » AP view: appears as round or stellate density
      - Occasionally mistaken for bone island or metastatic disease



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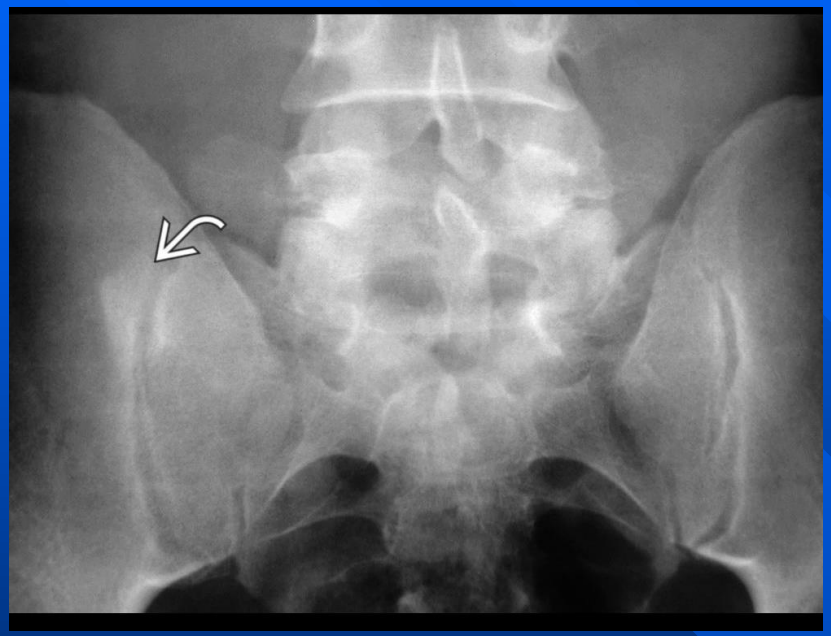
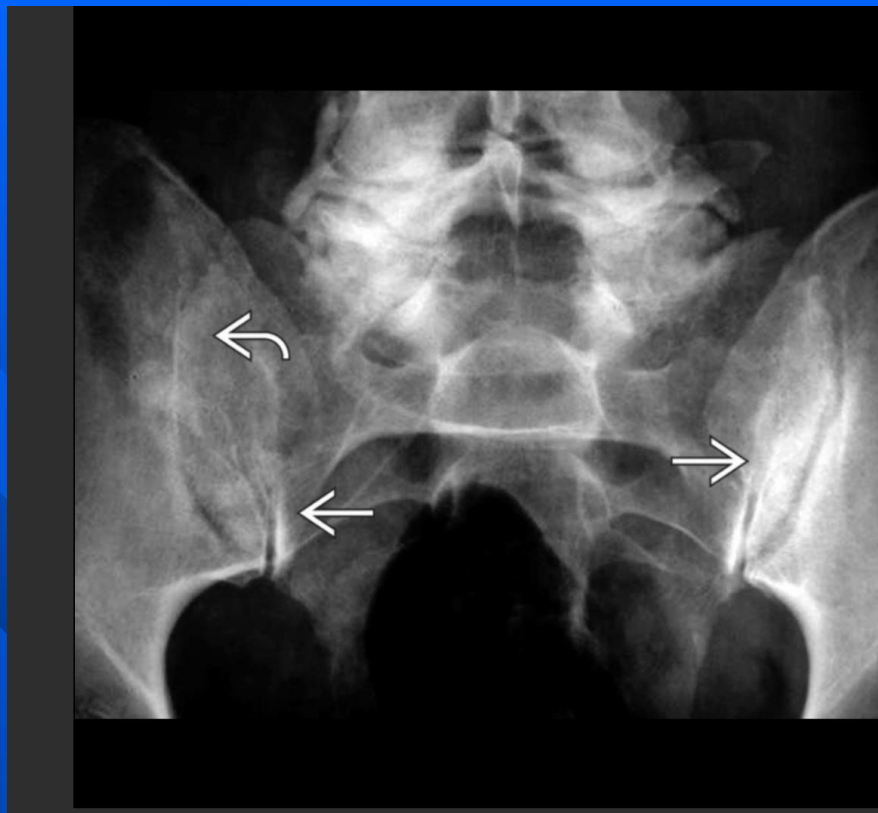
Axial bone CT in the same patient proves the sclerotic focus represents a typical marginal osteophyte bridging the SIJ →.

Ostearthritis





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AP radiograph shows typical OA of the SIJs. The right SIJ shows fusion in the nonsynovial portion ↗. There is sclerosis along the cortexes of the synovial portions of the joints →, but neither erosion nor ankylosis is evident.

- AP radiograph shows a sclerotic "lesion" at the level of the upper right SI joint (SIJ) (white curved arrow).
- It is important to remember that OA of the SIJs may either present as diffuse sclerosis of the cortex or as osteophytes projecting as rounded sclerosis, either at the superior or inferior edge of the synovial portion of the joint.

Osteitis condensans ilii

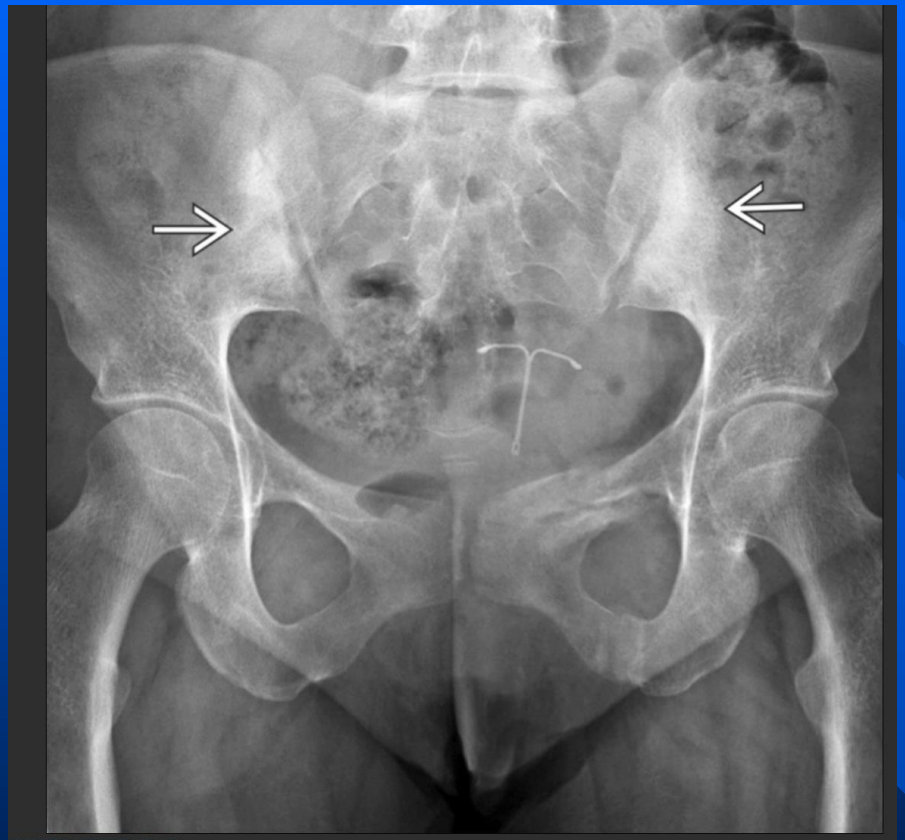
- Sclerotic reactive osseous change on iliac side of joint
  - Usually, but not invariably, symmetric
  - Sclerosis may mimic sclerosis seen in sacroiliitis
- Sclerosis is generally specific in appearance
  - Involves iliac side of joint, inferiorly
  - Often triangular or dome-shaped; apex points cephalad
- Not articular process; joint is normal
- Multiparous female > > > male

Osteitis condensans ilii

- Bilateral, symmetric sclerosis of ilium along sacroiliac joint
- Sclerosis; triangular shape with apex cephalad; follows iliac articular surface, extends variable distance into adjacent marrow
- No changes along sacral articular surface
- Absence of other findings, such as subchondral cysts, erosions, joint space narrowing

- Bone scan: demonstrates intense uptake; may mimic arthritis
  - Helps exclude multifocal diseases, such as metastases
- FDG PET shows uptake; coregistered CT avoids misdiagnosis

Osteitis condensans ilii



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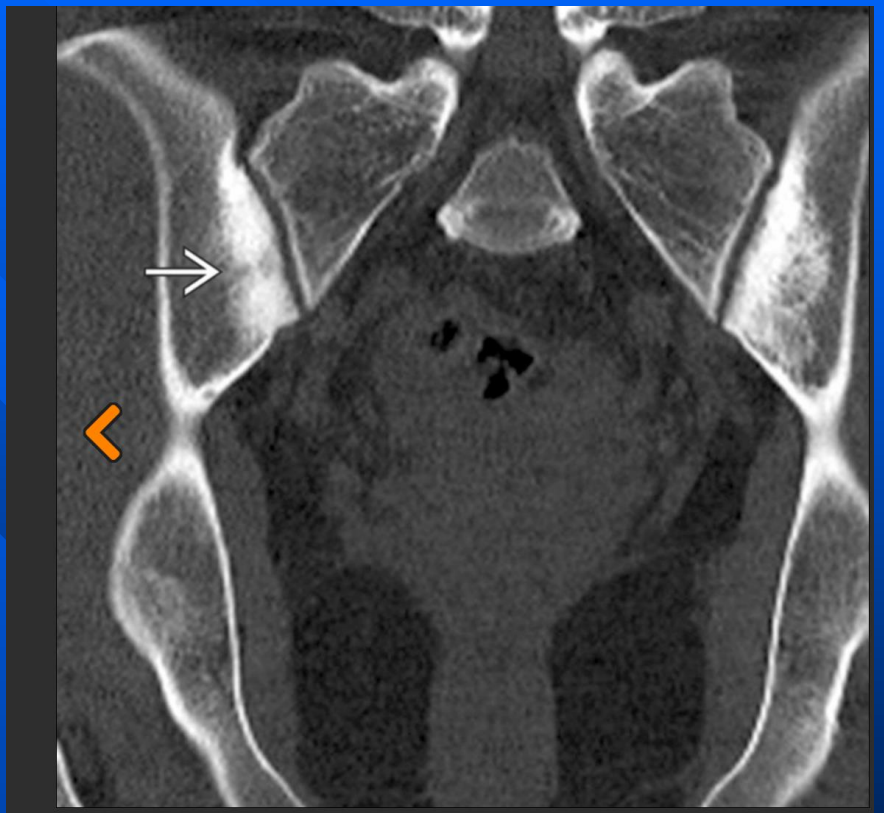
AP radiograph in a young woman being evaluated for trauma shows an incidental finding of osteitis condensans ilii. There is bilateral sclerosis limited to the iliac bones → adjacent to normal sacroiliac joints. The sclerosis is roughly triangle-shaped with the apex of the triangle pointed cephalad.



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Coronal CT shows the triangular shape of the iliac bone sclerosis → and lack of joint erosions. This young woman had several prior pregnancies and was asymptomatic.