To use the roentgen sign method of recognizing abnormal radiographic findings effectively, an understanding of normal radiographic anatomy for the specific area of interest is necessary. The purpose of this chapter is to provide a limited reference for the radiographic anatomy of the appendicular skeleton. Refer to comprehensive textbooks on radiographic anatomy for more detailed information.1,2

The radiographic nomenclature used in this chapter was approved by the American College of Veterinary Radiology in 1983.3 Some equine images in this chapter (Figs. 14-30 through 14-49 and 14-54 through 14-57) have been taken from previous publications and are reproduced here with permission of the journals and author.4-6

REFERENCES


James E. Smallwood
Kathy A. Spaulding

Fig. 14-1 Mediolateral Radiograph of Canine Shoulder Joint.
1. Spine of scapula
2. Acromion of scapula
3. Infraglenoid tubercle of scapula
4. Head of humerus
5. Glenoid cavity of scapula
6. Proximal physe of humerus
7. Greater tubercle of humerus
8. Supraglenoid tubercle of scapula

Fig. 14-2 Caudocranial Radiograph of Canine Shoulder Joint.
1. Spine of scapula
2. Acromion of scapula
3. Greater tubercle of humerus
4. Humeral (scapulohumeral) joint
5. Lesser tubercle of humerus
6. Clavicle
Fig. 14-3  Mediolateral Radiograph of Canine Humerus.
1. Infraglenoid tubercle of scapula
2. Head of humerus
3. Anconeal process of ulna
4. Lateral epicondyle of humerus
5. Tuber olecrani
6. Medial epicondyle of humerus
7. Lateral coronoid process of ulna
8. Proximal radioulnar joint
9. Medial coronoid process of ulna
10. Head of radius
11. Condyle of humerus
12. Proximal physis of humerus
13. Greater tubercle of humerus
14. Supraglenoid tubercle of scapula

Fig. 14-4  Caudocranial Radiograph of Canine Humerus.
1. Acromion of scapula
2. Greater tubercle of humerus
3. Deltoid tuberosity
4. Supratrochlear foramen of humerus
5. Lateral epicondyle of humerus
6. Capitulum of humeral condyle
7. Medial coronoid process of ulna
8. Trochlea of humeral condyle
9. Medial epicondyle of humerus
10. Clavicle
11. Lesser tubercle of humerus
Fig. 14-5  Mediolateral Radiograph of Canine Elbow Joint.
1. Anconeal process of ulna
2. Tuber olecrani of ulna
3. Caudal border of lateral epicondyle of humerus
4. Caudal border of medial epicondyle of humerus
5. Lateral coronoid process of ulna
6. Proximal radioulnar joint
7. Medial coronoid process of ulna
8. Head of radius
9. Condyle of humerus
10. Cranial border of medial epicondyle of humerus
11. Cranial border of lateral epicondyle of humerus

Fig. 14-6  Mediolateral Radiograph of Flexed Canine Elbow Joint.
1. Medial epicondyle of humerus
2. Anconeal process of ulna
3. Medial part of humeral condyle
4. Lateral part of humeral condyle
5. Caudal border of lateral epicondyle of humerus

Fig. 14-7  Craniocaudal Radiograph of Canine Elbow Joint.
1. Tuber olecrani of ulna
2. Medial epicondyle of humerus
3. Trochlea of humeral condyle
4. Medial coronoid process of ulna
5. Head of radius
6. Capitolum of humeral condyle
7. Lateral epicondyle of humerus
8. Anconeal process of ulna
9. Supratrochlear foramen of humerus
Fig. 14-8  Craniolateral-Caudomedial Oblique (A) and Craniomedial-Caudolateral Oblique (B) Radiographs of Canine Elbow Joint.

1. Supratrochlear foramen of humerus
2. Anconeal process of ulna
3. Medial epicondyline of humerus
4. Trochlear notch of ulna
5. Medial coronoid process of ulna
6. Tuber olecrani of ulna
7. Tuber olecrani of ulna
8. Medial epicondyline of humerus
9. Head of radius
10. Sesamoid bone of supinator muscle (inconstant)
11. Lateral epicondyline of humerus
12. Anconeal process of ulna
13. Supratrochlear foramen of humerus
Fig. 14-9 Mediolateral Radiograph of Canine Antebrachium.
1. Tuber olecrani of ulna
2. Lateral epicondyle of humerus
3. Medial epicondyle of humerus
4. Proximal radioulnar joint
5. Body of ulna
6. Distal metaphysis of ulna
7. Distal epiphysis of ulna
8. Accessory carpal bone
9. Carpal pad
10. Antebrachioarpal joint
11. Distal epiphysis of radius
12. Distal physis of radius
13. Distal metaphysis of radius
14. Body of radius
15. Neck of radius
16. Head of radius
17. Elbow (cubital) joint
18. Condyle of humerus

Fig. 14-10 Craniocaudal Radiograph of Canine Antebrachium.
1. Medial epicondyle of humerus
2. Medial coronoid process of ulna
3. Body of radius
4. Distal metaphysis of radius
5. Distal epiphysis of radius
6. Intermedioradial carpal bone
7. Sesamoid bone of abductor pollicis longus
8. Ulnar carpal bone
9. Distal epiphysis (styloid process) of ulna
10. Distal metaphysis of ulna
11. Body of ulna
12. Head of radius
13. Elbow (cubital) joint
14. Lateral epicondyle of humerus
Fig. 14-11  Dorsopalmar Radiograph of Canine Carpus.
1. Distal physis of radius
2. Distal metaphysis of radius
3. Antebrachiocarpal joint
4. Distal epiphysis of radius
5. Styloid process (medial) of radius
6. Middle carpal joint
7. Intermedioradial carpal bone
8. Sesamoid bone of abductor pollicis longus
9. First carpal bone (C1)
10. Second carpal bone (C2)
11. First metacarpal bone (Mc1)
12. Carpometacarpal joint
13. Third carpal bone (C3)
14. Fifth metacarpal bone (Mc5)
15. Fourth carpal bone (C4)
16. Accessory carpal bone
17. Ulnar carpal bone
18. Distal epiphysis (styloid process) of ulna
19. Distal radioulnar joint
20. Distal metaphysis of ulna

Fig. 14-12  Mediolateral Radiograph of Canine Carpus.
1. Distal epiphysis (styloid process) of ulna
2. Accessory carpal bone
3. Ulnar carpal bone
4. Carpal pad
5. Proximal sesamoid bone of first digit
6. Proximal phalanx (Pp) of first digit
7. Carpometacarpal joint
8. Middle carpal joint
9. Antebrachiocarpal joint
10. Distal epiphysis of radius
Fig. 14-13 Dorsolateral-Palmaromedial Oblique Radiograph of Canine Manus.
1. Distal radioulnar joint
2. Accessory carpal bone
3. Ulnar carpal bone
4. Base of Mc5
5. C1
6. C2
7. Middle carpal joint
8. Intermedioradial carpal bone
9. Antebrachio-carpal joint

Fig. 14-14 Dorsopalmar Radiograph of Canine Manus.
1. Distal epiphysis of radius
2. Intermedioradial carpal bone
3. Sesamoid bone of abductor pollicis longus
4. C1
5. Mc1
6. Pp of digit 1
7. Distal phalanx (Pd) of digit 1
8. Mc2
9. Abaxial proximal sesamoid bone of digit 2
10. Pp of digit 2
11. Middle phalanx (Pm) of digit 2
12. Unguicular crest of Pd of digit 2
13. Unguicular process of Pd of digit 2
14. Digital pad of digit 3
15. Metacarpal pad
16. Distal interphalangeal joint (DIJ) of digit 5
17. Proximal interphalangeal joint (PIJ) of digit 5
18. Metacarpophalangeal joint of digit 5
19. Mc4
20. Mc3
21. Carpal pad
22. Ulnar carpal bone
23. Accessory carpal bone
24. Distal epiphysis (styloid process) of ulna
Fig. 14-15 Mediolateral Radiograph of Canine Manus.
1. Distal epiphysis (styloid process) of ulna
2. Accessory carpal bone
3. Ulnar carpal bone
4. Carpal pad
5. Proximal sesamoid bone of digit 1
6. Pd of digit 1
7. Dorsal sesamoid bone
8. Antebrachiocarpal joint
9. Distal epiphysis of radius

Fig. 14-16 Palmaromedial-Dorsolateral Oblique Radiograph of Canine Manus.
1. Distal epiphysis (styloid process) of ulna
2. Accessory carpal bone
3. Ulnar carpal bone
4. Body of Mc5
5. Abaxial proximal sesamoid bone of digit 5
6. Pm of digit 5
7. Metacarpal pad
8. Digital pad of digit 4
9. Flexor tubercle of Pd of digit 4
10. Unguicular crest of Pd of digit 4
11. Unguicular process of Pd of digit 3
12. Pp of digit 2
13. Dorsal sesamoid bone of digit 2
14. Middle carpal joint
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Fig. 14-17 Ventrodorsal Radiograph of Canine Pelvis.
1. Crest of left ilium
2. Wing of left ilium
3. Body of left ilium
4. Body of left pubis
5. Head of left femur
6. Greater trochanter of left femur
7. Body of left ischium
8. Caudal vertebra 4
9. Table of left ischium
10. Ischial arch
11. Body of right femur
12. Right tuber ischiadicum (ischiatric tuberosity)
13. Right obturator foramen
14. Caudodorsal aspect of lunate surface of acetabulum
15. Acetabular fossa
16. Fovea capitis of right femur
17. Cranioventral aspect of lunate surface of acetabulum
18. Sacral vertebra 3
19. Right sacroiliac joint
20. Right tuber coxae (cranioventral iliac spine)

Fig. 14-18 Right-Left Lateral Radiograph of Canine Pelvis.
1. Crest of right ilium (more magnified)
2. Craniodorsal iliac spine
3. Caudodorsal iliac spine
4. Left tuber sacrale (less magnified)
5. Sacral vertebra 3
6. Caudal vertebra 2
7. Left coxal joint (less magnified)
8. Superimposed right and left tubera ischidiaca
9. Superimposed right and left obturator foramina
10. Body of right femur (more magnified)
11. Body of left femur (less magnified)
12. Head of right femur (more magnified)
13. Body of left ilium (less magnified)
14. Body of right ilium (more magnified)
15. Promontory of sacrum
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**Fig. 14-19** Craniocaudal Radiograph of Canine Femur.
1. Cranioventral aspect of lunate surface of acetabulum
2. Fovea capitis of femur
3. Acetabular fossa
4. Caudodorsal aspect of lunate surface of acetabulum
5. Lesser trochanter of femur
6. Patella
7. Medial sesamoid of gastrocnemius muscle
8. Medial epicondyle of femur
9. Medial condyle of femur
10. Medial condyle of tibia
11. Extensor fossa of femur
12. Lateral epicondyle of femur
13. Lateral sesamoid of gastrocnemius muscle
14. Body of femur
15. Tuber ischiadicum
16. Trochanteric fossa of femur
17. Greater trochanter of femur
18. Neck of femur
19. Head of femur

**Fig. 14-20** Mediolateral Radiograph of Canine Femur.
1. Trochanteric fossa of femur
2. Lesser trochanter of femur
3. Nutrient canal of femur
4. Lateral sesamoid of gastrocnemius muscle
5. Medial sesamoid of gastrocnemius muscle
6. Medial and lateral condyles of femur
7. Sesamoid bone of popliteus muscle
8. Fibula
9. Tibial tuberosity
10. Patella
11. Body of femur
12. Neck of femur
13. Head of femur
14. Craniodorsal aspect of lunate surface of acetabulum
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Fig. 14-21  Craniocaudal Radiograph of Canine Stifle Joint.
1. Base of patella
2. Apex of patella
3. Medial sesamoid of gastrocnemius muscle
4. Medial epicondyle of femur
5. Medial condyle of femur
6. Intercondylar fossa of femur
7. Medial condyle of tibia
8. Medial tubercle of intercondylar eminence
9. Lateral tubercle of intercondylar eminence
10. Cranial border of tibia
11. Body of fibula
12. Sesamoid bone of popliteus muscle
13. Head of fibula
14. Lateral condyle of tibia
15. Extensor fossa of femur
16. Lateral sesamoid of gastrocnemius

Fig. 14-22  Mediolateral Radiograph of Canine Stifle Joint.
1. Lateral sesamoid of gastrocnemius muscle
2. Medial sesamoid of gastrocnemius muscle
3. Medial and lateral condyles of femur
4. Extensor fossa of femur
5. Sesamoid bone of popliteus muscle
6. Head of fibula
7. Body of fibula
8. Cranial border of tibia
9. Cartilage between tibial tuberosity and body of tibia
10. Tibial tuberosity
11. Cranial intercondylar area of tibia
12. Infrapatellar fat body
13. Patellar ligament
14. Superimposed ridges of femoral trochlea
15. Patella
Fig. 14-23  Craniocaudal Radiograph of Canine Crus.
1. Medial condyle of femur
2. Medial meniscus
3. Medial condyle of tibia
4. Medial border of tibia
5. Body of tibia
6. Medial surface of fibula (faces tibia)
7. Tuber calcanei
8. Medial groove of tibial cochlea
9. Medial malleolus of tibia
10. Medial aspect of tarsocrural joint
11. Lateral malleolus of fibula
12. Lateral surface of fibula
13. Lateral border of tibia (faces fibula)
14. Interosseous membrane
15. Body of fibula
16. Cranial border of tibia
17. Medial tubercle of intercondylar eminence
18. Lateral tubercle of intercondylar eminence
19. Head of fibula
20. Lateral condyle of tibia
21. Lateral meniscus
22. Central intercondylar area of tibia

Fig. 14-24  Mediolateral Radiograph of Canine Crus.
1. Lateral sesamoid of gastrocnemius muscle
2. Medial sesamoid of gastrocnemius muscle
3. Medial condyle of femur
4. Lateral condyle of femur
5. Sesamoid bone of popliteus muscle
6. Head of fibula
7. Body of fibula
8. Tarsocrural joint
9. Tuber calcanei
10. Proximal intertarsal joint
11. Trochlea of talus
12. Body of fibula superimposed on tibia
13. Cranial border of tibia
14. Cartilage between tibial tuberosity and body of tibia
15. Tibial tuberosity
16. Extensor fossa of femur
Fig. 14-25  Mediolateral Radiograph of Canine Tarsus.
1. Tuber calcanei
2. Body of calcaneus
3. Fourth tarsal bone (T4)
4. Metatarsal bone 1 (Mt1)
5. Superimposed Mt2 through Mt5
6. Tarsometatarsal joints
7. Third tarsal bone (T3)
8. Distal intertarsal joint
9. Central tarsal bone (Tc)
10. Proximal intertarsal joint
11. Trochlea tali
12. Tarsocrural joint

Fig. 14-26  Dorsoplantar Radiograph of Canine Tarsus.
1. Body of fibula
2. Tuber calcanei
3. Lateral malleolus of fibula
4. Body of calcaneus
5. Proximal intertarsal (calcaneoquartal) joint
6. T4
7. Tarsometatarsal joints
8. Base of Mt5
9. Mt4
10. Mt3
11. Mt2
12. Mt1
13. T3
14. Superimposed T1 and T2
15. Tc
16. Proximal intertarsal (talocalcaneocentral) joint
17. Talus
18. Sustentaculum tali of calcaneus
19. Medial malleolus of tibia
20. Tarsocrural joint
21. Common calcanean tendon superimposed on tibia
22. Body of tibia
Fig. 14-27  Dorsolateral-Plantaromedial Oblique Radiograph of Canine Tarsus.
1. Tuber calcanei
2. Proximal intertarsal (calcaneoquartal) joint
3. T4
4. Tarsometatarsal joints
5. Base of Mt5
6. Mt4
7. Mt3
8. Mt2
9. Distal intertarsal joint
10. Tc
11. Proximal intertarsal (talocalcaneocentral) joint
12. Sustentaculum tali of calcaneus
13. Medial malleolus of tibia
14. Tarsocrural joint

Fig. 14-28  Dorsoplantar Radiograph of Canine Pes.
1. Tarsocrural joint
2. Talus
3. Proximal intertarsal (talocalcaneocentral) joint
4. Tc
5. Superimposed T1 and T2
6. Mt2
7. Mt3
8. Proximal sesamoid bones of digit 3
9. Metatarsophalangeal joint of digit 2
10. Pp of digit 2
11. Metatarsal pad
12. Digital pad of digit 3
13. Pd of digit 3
14. Unguicular process of Pd of digit 4
15. Pm of digit 4
16. Mt4
17. Mt5
18. Tarsometatarsal joints
19. T4
20. Proximal intertarsal (calcaneoquartal) joint
21. Calcaneus
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**Fig. 14-29** Mediolateral Radiograph of Canine Pes with Digits Spread.
1. Superficial digital flexor (SDF) tendon
2. Tuber calcanei
3. Calcaneus
4. Proximal intertarsal (calcaneoquartal) joint
5. T4
6. Base of Mt5
7. Body of Mt5
8. Proximal sesamoid bones of digit 5
9. Pp of digit 5
10. Tape used in positioning
11. Metatarsal pad
12. DJJ of digit 4
13. Flexor tubercle of Pd of digit 4
14. Pn of digit 4
15. Unguicular process of Pd of digit 3
16. Unguicular crest of Pd of digit 3
17. PIJ of digit 4
18. Metatarsophalangeal joint of digit 4
19. Tarsometatarsal joints
20. Distal intertarsal joint
21. Proximal intertarsal (talocalcaneocentral) joint
22. Trochlea of talus
23. Tarsocrural joint

**Fig. 14-30** Mediolateral Radiograph of Equine Shoulder Joint.
1. Air in trachea
2. Supraglenoid tubercle of scapula
3. Coracoid process of scapula
4. Neck of scapula
5. Spine of scapula
6. Medial edge of glenoid fossa
7. Head of humerus
8. Neck of humerus
9. Deltoid tuberosity of humerus
10. Cranial surface of humerus
11. Pointed distal end of intermediate tubercle
12. Floor of lateral part of intertubercular groove
13. Floor of medial part of intertubercular groove
14. Cranial part of lesser tubercle
15. Intermediate tubercle of humerus
16. Cranial part of greater tubercle
17. Glenoid notch in medial edge of glenoid fossa
Fig. 14-31 Mediolateral Radiograph of Equine Elbow Joint.
1. Body of radius
2. Radial tuberosity
3. Head of radius
4. Trochlea of humeral condyle (medial)
5. Capitulum of humeral condyle (lateral)
6. Radial fossa of humerus
7. Nutrient canal of humerus (medial)
8. Olecranon fossa of humerus
9. Lateral epicondyle of humerus
10. Medial epicondyle of humerus
11. Tuber olecrani
12. Trochlear notch of ulna
13. Anconeal process of ulna
14. Proximal radioulnar joint
15. Proximal interosseous space

Fig. 14-32 Craniocaudal Radiograph of Equine Elbow Joint.
1. Medial epicondyle of humerus
2. Medial coronoid process of ulna
3. Head of radius
4. Radial tuberosity
5. Proximal interosseous space
6. Trochlea of humeral condyle
7. Capitulum of humeral condyle
8. Eminence for lateral collateral ligament
9. Lateral coronoid process of ulna
10. Lateral epicondyle of humerus
11. Tuber olecrani
12. Olecranon fossa of humerus
Fig. 14-33  Dorsopalmar Radiograph of Left Equine Carpus.
1. Medial styloid process of radius
2. Lateral styloid process of ulna
3. Projection at proximomedial aspect of medial styloid process of radius
4. Vascular channels
5. Caudolateral border of medial styloid process of radius
6. Junction of carpal articular surface with cranial surface of radius
7. Radial carpal bone
8. Intermediate carpal bone
9. Ulnar carpal bone
10. Accessory carpal bone
11. C2
12. C3
13. C4
14. Medial border of palmar process of C3
15. Mc2
16. Mc4
17. Mc3
18. Vascular channel
19. Antebrachiocarpal joint
20. Carpometacarpal joints
21. Middle carpal joint
22. Shadow cast by dorsal aspects of carpometacarpal joints
23. Shadow cast by palmar aspects of carpometacarpal joints

Fig. 14-34  Lateromedial Radiograph of Left Equine Carpus.
1. Ridges on cranial surface of radius
2. Ridge adjacent to lateral border of common digital extensor tendon
3. Caudal border of radial trochea
4. Transverse crest of radius
5. Medial part of carpal articular surface
6. Intermediate part of carpal articular surface
7. Lateral part of carpal articular surface
8. Accessory carpal bone
9. Dorsodistal border of radial carpal bone
10. Dorsodistal border of intermediate carpal bone
11. Proximal process of Ci
12. Dorsal surface of ulnar carpal bone
13. Articulation of Ca with Cu
14. Palmar border of Cu
15. Palmar border of Ci
16. Palmar border of Cr
17. Dorsal border of C2
18. Dorsal border of C3
19. Dorsal border of C4
20. Palmar border of C2
21. Palmar border of C3
22. Palmar border of C4
23. Proximal border of C2
24. Proximal border of C3
25. Proximal border of C4
26. Mc4
27. Mc2
28. Metacarpal tuberosity
29. Antebrachiocarpal joint
30. Middle carpal joint
31. Carpometacarpal joints
Fig. 14-35 Lateromedial Radiograph of Flexed Left Equine Carpus.
1. Antebrachiocarpal joint
2. Middle carpal joint
3. Carpometacarpal joints
4. Medial border of medial part of carpal articular surface
5. Lateral border of medial part of carpal articular surface
6. Medial styloid process
7. Shadows from caudal aspect of intermediate part of radial trochlea
8. Lateral styloid process
9. Transverse crest of radius
10. Accessory carpal bone
11. Dorsoproximal border of Cr
12. Dorsoproximal border of Ci
13. Dorsoproximal border of Cu
14. Dorsodistal border of Cr (isolated)
15. Dorsodistal border of Ci
16. Dorsodistal border of Cu
17. Palmar border of Cr
18. Palmar border of Ci
19. Palmar border of Cu
20. Dorsal border of C3
21. Dorsal border of C4
22. Dorsal border of C2
23. Mc3
24. Third carpometacarpal joint
25. Second carpometacarpal joint
26. Mc2
27. Mc4
28. Fourth carpometacarpal joint

Fig. 14-36 Dorsolateral-Palmaromedial Oblique Radiograph of Left Equine Carpus.
1. Radiolucent area at line of fusion between lateral styloid process and radius
2. Lateral styloid process
3. Medial part of radial trochlea
4. Lateral styloid process
5. Radial carpal bone
6. Intermediate carpal bone
7. Ulnar carpal bone
8. Articulations of accessory carpal bone with lateral styloid process and ulnar carpal bone
9. C3
10. C2
11. C4
12. Palmar projection of C4
13. Mc4
14. Mc2
15. Mc3
16. Location of metacarpal interosseus ligaments
17. Distal aspect of dorsomedial border of Cr (isolated)
Fig. 14-37 Dorsomedial-Palmarolateral Oblique Radiograph of Left Equine Carpus.
1. Projection of radius for attachment of medial collateral ligament
2. Ridge that forms lateral border of groove for common digital extensor tendon
3. Proximal border of accessory carpal bone
4. Accessory carpal bone
5. Medial styloid process of radius
6. Lateral styloid process
7. Ridge on caudal aspect of radius
8. Ridge at junction of cranial surface of radius with carpal articular surface
9. Dorsolateral border of Cr
10. Dorsolateral borders of Cu and Ci
11. Proximal surface of Cr
12. Proximal surface of Ci
13. Proximal surface of Cu
14. Palmaromedial border of Cr
15. Palmaromedial border of Ci
16. Palmaromedial border of Cu
17. C2
18. C3
19. C4
20. Dorsolateral borders of C3 and C4
21. Articulation between C2 and Mc2
22. Mc2
23. Articulation between C3 and Mc3
24. Mc3
25. Inconstant articulation between C3 and Mc2
26. Mc4

Fig. 14-38 Dorsoproximal-Dorsodistal Oblique Radiograph of Proximal Row of Equine Carpal Bones.
1. Dorsal surface of radial carpal bone
2. Dorsal surface of intermediate carpal bone
3. Dorsal surface of ulnar carpal bone
4. Radius
5. Carpal articular surface of radial trochlea
6. Dorsal surfaces of distal carpal bones
7. Accessory carpal bone
8. Mc2
9. Mc3
10. Mc4

Fig. 14-39 Dorsoproximal-Dorsodistal Oblique Radiograph of Distal Row of Equine Carpal Bones.
1. Dorsal surface of C2
2. Dorsal surface of C3
3. Dorsal surface of C4
4. Dorsal surface of radial carpal bone
5. Dorsal surface of intermediate carpal bone
6. Dorsal surface of ulnar carpal bone
7. Radius
8. Accessory carpal bone
9. Interosseous space between Cr and Ci
Fig. 14-40 Lateromedial Radiograph of Left Equine Metacarpophalangeal Joint.
1. Distal end (head) of small metacarpal bone
2. Dorsal part of sagittal ridge of Mc3
3. Palmar part of sagittal ridge of Mc3
4. Metacarpophalangeal joint
5. Proximal sesamoid bones
6. Ergot
7. Straight sesamoid ligament
8. Proximal interphalangeal joint

Fig. 14-41 Lateromedial Radiograph of Left Equine Metacarpophalangeal Joint with Right Limb Lifted to Increase Weight on Left Limb.
1. SDF tendon
2. Interosseus
3. Deep digital flexor (DDF) tendon
4. Dorsoproximal aspect of Pp
5. Subtle transverse ridge on head of Mc3
6. Distinct transverse ridge at palmar edge of articular surface
7. Palmar annular ligament of metacarpophalangeal joint
8. SDF tendon
9. Ergot
10. Increased distance between proximal sesamoid bones and Pp (see Fig. 14-40)
11. DDF tendon
12. Distal digital annular ligament
Fig. 14-42 Lateromedial Radiograph of Flexed Left Equine Metacarpophalangeal Joint.
1. Sagittal ridge on head of Mc3
2. Dorsoproximal aspect of Pp
3. Distal end of small metacarpal bone
4. Proximal sesamoid bones
5. Ergot
6. DDF tendon

Fig. 14-43 Dorsoproximal-Palmarodistal Oblique Radiograph of Left Equine Metacarpophalangeal Joint.
1. Lateral proximal sesamoid bone
2. Depression in interosseus (abaxial) surface of medial proximal sesamoid bone for attachment of interosseus tendon
3. Palmaroproximal edge of Pp
4. Depression in Mc3 for attachment of lateral collateral ligament of metacarpophalangeal joint
5. Sagittal ridge on head of Mc3
6. Area of oblique ridge on palmar surface of Pp for attachment of oblique sesamoid ligament
7. Nutrient canal through dorsal cortex of Pp
8. Lateral distal collateral tubercle of Pp
**Fig. 14-44** Dorsolateral-Palmaromedial Oblique Radiograph of Left Equine Metacarpophalangeal Joint.
1. Distal end of Mc4
2. Dorsoproximal aspect of Pp
3. Depression in interosseus surface of medial proximal sesamoid bone for attachment of interosseus tendon
4. Palmaroabaxial border of lateral proximal sesamoid bone
5. Lateral proximal collateral tubercle of Pp
6. Ergot
7. Lateral distal collateral tubercle of Pp
8. Proximal interphalangeal joint

**Fig. 14-45** Lateromedial Radiograph of Left Equine Foredigit.
1. PIJ
2. Extensor process of Pd
3. DU
4. Part of DJJ that extends between Pd and the distal sesamoid (navicular) bone
5. Proximal extent of tubular horn forming stratum medium of hoof wall
6. Junction of stratum medium and laminar horn of stratum internum
7. Transverse part of sole canal of Pd; accommodates terminal arch of digital vessels
8. Sole border of Pd
9. Planum cuneatum (sole surface) of Pd
10. Vascular channels extending from sole canal to sole border of Pd
11. Flexor surface of Pd
12. Flexor surface of navicular bone
13. Superimposed medial and lateral palmar processes of Pd
14. Radiolucent areas created by fat within synovial folds of digital sheath
15. Borders of DDF tendon; defined by fat within synovial folds of digital sheath
Fig. 14-46 Dorsopalmar Radiograph of Left Equine Foredigit.
1. PIJ
2. Lateral distal collateral tubercle of Pp
3. Medial proximal collateral tubercle of Pm
4. Extensor process of Pd
5. Wall of depression in Pm for attachment of medial collateral ligament of DJJ
6. DJJ
7. Lateral extremity of navicular bone
8. Lateral palmar process of Pd
9. Foramen in lateral palmar process of Pd that accommodates dorsal branches of digital vessels
10. Medial sole foramen of Pd; receives digital vessels as they enter sole canal
11. Sole border of Pd; typically irregular because of notches for vascular channels
12. Medial collateral groove of frog
13. Central groove of frog
14. Notch in sole border associated with vascular channel from sole canal of Pd

Fig. 14-47 Dorsal 65-Degree Proximal-Palmarodistal Oblique Radiograph of Left Equine Foredigit.
1. PIJ
2. Medial palmar process of Pd
3. Proximal border of navicular bone
4. Vascular foramina and synovial fossae along distal border of navicular bone
5. Air within central groove of frog
6. Lateral extremity of navicular bone
7. Sole canal of Pd
8. DJJ
9. Articulation of Pd with navicular bone; part of DJJ
10. Sole border of Pd
11. Crena marginis solaris
12. Apex of frog
13. Vascular channel from sole canal to sole border of Pd
**Fig. 14-48** Dorsoproximolateral-Palmarodistomedial Oblique Radiograph of Left Equine Foredigit.
1. DIJ
2. Articulation of Pd with navicular bone; part of DIJ
3. Lateral extremity of navicular bone
4. Air within lateral collateral groove of frog
5. Lateral palmar process of Pd
6. Sole canal of Pd
7. End-on perspective of vascular channel from sole canal to parietal surface of Pd
8. Vascular channel from sole canal to sole border of Pd
9. Lateral parietal groove of Pd; accommodates dorsal branches of digital vessel

**Fig. 14-49** Palmaroproximal-Palmarodistal Oblique Radiograph of Left Equine Foredigit.
1. Proximal border of hoof wall
2. Lateral extremity of navicular bone
3. Sole border of Pd
4. Lateral palmar process of Pd
5. Foramen of lateral palmar process
6. Air within central groove of frog
7. Articulation of Pm with navicular bone; part of DIJ
8. Sagittal ridge of navicular bone
9. Flexor surface of navicular bone
10. DDF tendon
11. Air within medial collateral groove of frog

**Fig. 14-50** Ventromedial-Dorsolateral Oblique Radiograph of Equine Hip Joint (8 Months Old).
1. Body of ilium
2. Cranioventral border of acetabulum
3. Craniodorsal border of acetabulum
4. Proximal physis (epiphyseal cartilage) of femur
5. Shadow created by caudal edge of lesser trochanter
6. Radiolucent area created by trochanteric fossa of femur
7. Cartilaginous junction between greater trochanter and femoral body
8. Greater trochanter of femur, caudal part
9. Tuber ischiadicum
10. Cartilaginous pelvic symphysis
11. Body of ischium
12. Caudodorsal border of acetabulum
13. Obturator foramen
14. Radiolucent area created by acetabular fossa
15. Radiolucent area created by groove on ventral surface of pubis for accessory ligament of femoral head
16. Radiolucent area created by fovea capitis of femoral head
17. Cranial edge of acetabular notch
Fig. 14-51 Lateromedial Radiograph of Equine Stifle Joint.
1. Supracondylar fossa of femur for SDF
2. Medial tubercle of intercondylar eminence
3. Lateral condyle of femur
4. Medial condyle of femur
5. Lateral tubercle of intercondylar eminence
6. Lateral condyle of tibia
7. Medial condyle of tibia
8. Fibula
9. Extensor groove of tibia
10. Groove for intermediate patellar ligament
11. Lateral part of tibial tuberosity
12. Cranial intercondylar area of tibia
13. Medial ridge of femoral trochlea
14. Extensor fossa of femur
15. Lateral ridge of femoral trochlea
16. Apex of patella
17. Articular surface of patella, gliding part
18. Articular surface of patella, resting part
19. Base of patella

Fig. 14-52 Caudocranial Radiograph of Equine Stifle Joint.
1. Intercondylar fossa of femur
2. Medial tubercle of intercondylar eminence
3. Medial epicondyle of femur
4. Medial condyle of femur
5. Medial meniscus and femorotibial joint
6. Medial condyle of tibia
7. Cranial margin of tibia
8. Body of fibula
9. Head of fibula
10. Lateral part of tibial tuberosity
11. Lateral condyle of tibia
12. Lateral meniscus and femorotibial joint
13. Depression for origin of popliteus muscle
14. Lateral tubercle of intercondylar eminence
15. Lateral epicondyle of femur
16. Lateral ridge of femoral trochlea
17. Patella
Fig. 14-53  Caudolateral-Craniomedial Oblique Radiograph of Equine Stifle Joint.
1. Medial condyle of femur
2. Lateral condyle of femur
3. Medial tubercle of intercondylar eminence
4. Lateral tubercle of intercondylar eminence
5. Medial meniscus and femorotibial joint
6. Medial condyle of tibia
7. Head of fibula
8. Body of fibula
9. Extensor groove of tibia
10. Tibial tuberosity
11. Extensor fossa of femur
12. Lateral ridge of femoral trochlea
13. Groove of femoral trochlea
14. Femoropatellar joint
15. Patella

Fig. 14-54  Dorsoplantar Radiograph of Left Equine Tarsus.
1. Medial groove of tibial cochlea
2. Lateral groove of tibial cochlea
3. Oblique ridge separating medial and lateral grooves of tibial cochlea
4. Pointed caudal end of oblique ridge
5. Rounded cranial end of oblique ridge
6. Medial malleolus
7. Caudal part of lateral malleolus
8. Cranial part of lateral malleolus
9. Radiopaque shadow
10. Talus
11. Calcaneus
12. Lateral ridge of trochlea tali
13. Proximal tubercle of talus
14. Distal tubercle of talus
15. Medial ridge of trochlea tali
16. Groove between lateral and medial ridges of trochlea tali
17. Medial edge of sustentaculum tali
18. Proximal intertarsal (talocalcaneocentral) joint
19. Tuber calcanei
20. Proximal intertarsal (calcaneoquartal) joint
21. Proximoplantar aspect of Tc
22. Medial aspect of Tc
23. Lateral aspect of Tc
24. Distal intertarsal (centrodistal) joint
25. Fused first and second tarsal bones (T1+2)
26. Articulation between T1+2 and Mt2
27. Medial aspect of T3
28. Lateral aspect of T3
29. Radiopaque lines produced by walls of nonarticular depressions on T3
30. T4
31. Tarsometatarsal joints (also articulation between T1+2 and Mt2)
32. Base of Mt2
33. Base of Mt4

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Fig. 14-55 Lateromedial Radiograph of Left Equine Tarsus.
1. Lateral malleolus
2. Medial malleolus
3. Radiopaque line produced by ridge on caudal surface of tibia
4. Medial part of caudal surface of tibia
5. Sustentaculum tali
6. Tuber calcanei
7. Lateral ridge of trochlea tali
8. Medial ridge of trochlea tali
9. Larger notch associated with lateral ridge of trochlea tali
10. Intermediate part of tibial cochlea
11. Groove of trochlea tali
12. PIJ
13. Articular facets between talus and calcaneus
14. Plantar aspect of PIJ
15. Articulation between Tc and T1+2
16. Distal intertarsal joint
17. Base of Mt2
18. Base of Mt3
19. Base of Mt4
20. Tarsometatarsal joint
21. Groove on Mt3 for dorsal metatarsal artery 3
22. Chestnut (torus tarseus)

Fig. 14-56 Dorsolateral-Plantaromedial Oblique Radiograph of Left Equine Tarsus.
1. Cranial aspect of medial malleolus
2. Shadows produced by borders of groove in lateral malleolus
3. Distal projection of medial malleolus
4. Distal projection of lateral malleolus
5. Caudal aspect of intermediate ridge of tibial cochlea
6. Cranial aspect of intermediate ridge of tibial cochlea
7. Medial ridge of trochlea tali
8. Lateral ridge of trochlea tali
9. Radiopaque area produced by distal tubercle of talus
10. Sinus tarsi
11. Dorsomedial aspect of PIJ
12. Dorsomedial aspect of DJ
13. Dorsomedial aspect of third tarsometatarsal joint
14. Ridge on dorsomedial aspect of T3
15. Nonarticular area between Tc and T3
16. Dorsal opening of tarsal canal
17. Plantar opening of tarsal canal
18. Plantar tuberosity on T4
19. Base of Mt4
20. Articulation between T4 and Mt4
21. Interosseous space between Mt3 and Mt4
22. Mt2
23. Chestnut
24. Tendons crossing flexor surface of tarsus
Fig. 14-57  Dorsomedial-Plantarolateral Oblique Radiograph of Left Equine Tarsus.
1. Sustentaculum tali
2. Distal extremity of medial malleolus
3. Distal extremity of lateral malleolus
4. Intermediate ridge of tibial cochlea
5. Lateral ridge of trochlea tali
6. Notch distal to lateral ridge of trochlea tali
7. Medial ridge of trochlea tali
8. Dorsolateral aspect of proximal intertarsal joint
9. Dorsolateral aspect of distal intertarsal joint
10. Dorsolateral aspect of third tarsometatarsal joint
11. Dorsal aspect of T4
12. Plantaromedial aspect of Tc
13. Plantaromedial aspect of T1+2
14. Plantaromedial aspect of Mt 2
15. Nonarticular depression between Tc and T3
16. Chestnut
17. Articulation between T1+2 and Tc
18. Articulation between T1+2 and T3
19. Articulation between T1+2 and Mt 2
20. Mt4
21. Mt3
22. Radiopaque line produced by border of groove for dorsal metatarsal artery 3