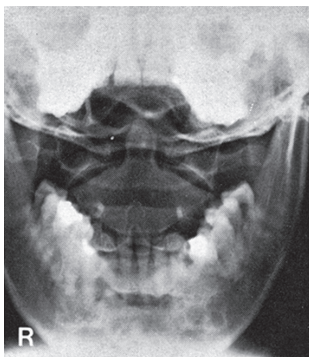
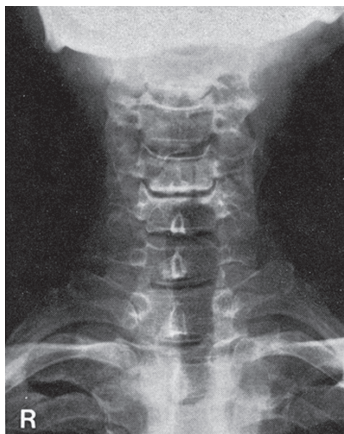


Medicine is fortunately in a constant state of flux. New technological developments in particular—for example, in the field of multislice computed tomography—are constantly leading to changes in procedures. In this new edition, we have taken account of this and have completely revised the section on CT. We have also omitted several positioning techniques, such as the intravenous gallbladder examination, as they are no longer up to date, and have included new ones on the basis of the many suggestions that we were delighted to receive from readers of the previous edition.

As always, we have benefited from considerable help in revising the book. Special thanks are due here to the technical assistants in our department, Sabrina Eisenbarth, Anna-M. Kettenis, Lilia Otto, and Andrea Wahl for their resourceful assistance. Our team of authors and experts has also been expanded, and this will certainly have led to a further improvement in quality. We have also made an effort to take account of the relevant guidelines issued by the specialist societies.

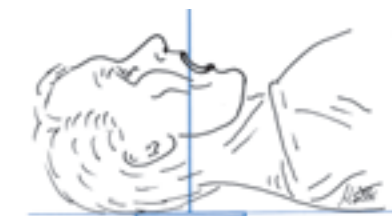
We are continuing our efforts to improve this volume even more for later editions and would be most grateful to receive any criticisms and suggestions from readers.

Dillingen, fall 2008
*Torsten B. Moeller and
Emil Reif*



► **Criteria for a Good Radiographic View**

- Odontoid process, axis and atlas are clearly visible through the open mouth, occiput does not obscure the odontoid, atlantoaxial and atlanto-occipital articulations are clearly defined
- Cervical vertebrae 3-7 clearly visualized, superior and inferior vertebral plates linear



◆ Imaging Technique

Image receiver (e.g., film): size 13×18 cm (5×7") (**odontoid**) and 18×24 cm (8×10") (**cervical spine**), **portrait**

Image receiver dosage (sensitivity class): ≤5 μGy (SC 400)

SID: 115 cm (40") or 150 cm (60")

Bucky: yes (r 12 [8])

Focal spot size: small (focal spot nominal value: ≤1.3)

Exposure: 65–75 kV, automatic, center cell

■ Patient Preparation

- Remove dentures, glasses
- Remove jewelry (necklace, earrings, hairpins)
- Open clothes (buttons, zipper)

▲ Positioning

- Supine position

Atlas and odontoid process, AP

- Head flexed until upper teeth (occlusal plane) and occipital bone are superimposed (head elevated 15° with sponge wedge)
- Mouth wide open

Cervical spine, AP

- Head reclined so that the line of the mental symphysis—lower border of the occipital bone (imaginary line: corner of the mouth—auditory meatus) is perpendicular to the horizontal plane of the film
- Mouth closed
- Gonads shielded (lead apron)

● Alignment

Atlas and odontoid process of the axis, AP

- Projection: ventrodorsal, perpendicular to the film
- Central ray in midline at the level of the corners of the mouth

Cervical spine, AP

- Projection: 10–15° craniocaudad
- Central ray directed to the sternal notch and middle of the cassette
- Centering and collimation, side identification



▶ Criteria for a Good Radiographic View

- Complete and symmetrical view of the pelvis that includes hip joints, trochanters, and iliac wings (1)
- Lateral cortex of the major trochanters on both sides well delineated (2)



◆ Imaging Technique

Image receiver (e.g., film): size 35×43 cm (14×17"), landscape

Image receiver dosage (sensitivity class): ≤5 μGy (SC 400)

SID: 115 cm (40")

Bucky: yes (under the table, r 12 [8])

Focal spot size: large (focal spot nominal value: ≤1.3)

Exposure: 75–90 kV, automatic, both outer or all three photocells

■ Patient Preparation

- Remove all clothes except undergarments, remove shoes

▲ Positioning

Standing

- Patient stands with the back to the cassette stand, arms are hanging down
- Legs straight, feet slightly turned in (great toes touch, heels about 4 cm apart)

- Adjust any difference in leg length and note on the film
- Compression band across the abdomen (caution: abdominal aortic aneurysm)

Recumbent

- Supine position, legs rotated inward, both knees at the same level (if patient has difficulty straightening one knee, support the opposite side with a sponge pad)
- Upper cassette border 4 cm above pelvic crest
- Gonads shielded for males

● Alignment

- Projection: AP, perpendicular to the film
- Central ray directed to the middle of the cassette
- Centering, collimation, side identification
- Breath held after expiration

Variations

Lower pelvic view

- Upper border of the cassette at the level of anterior superior iliac spine, otherwise as above

Pelvis, Pennal I technique

- Projection: craniocaudad 40°
- Central ray at the level of the anterior superior iliac spine, directed to the middle of the cassette

Pelvis, Pennal II technique

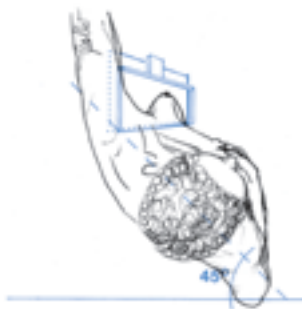
- Projection: caudocephalad 40°
- Central ray 4 cm below the upper border of the symphysis, directed to the middle of the cassette

Pelvis, Martius technique

- Position: patient leans in a semisitting/semirecumbent position on the examination table and supports herself with both hands at the sides, with back hollowed; cushion support can be provided
- Radiographic measuring rod should be held transversely over both thighs
- Projection: ventrodorsal, perpendicular to the film
- Central ray: on the mid-symphysis and middle of the cassette

Pelvis, Guttman technique

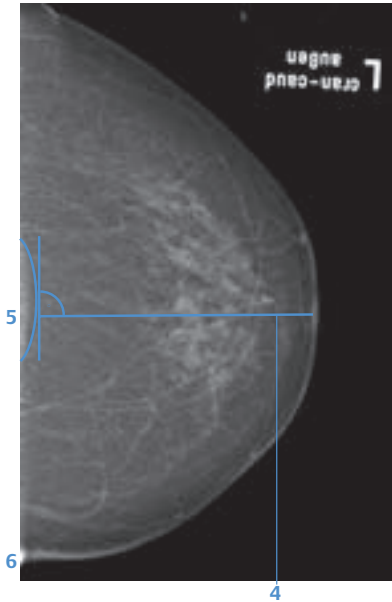
- Position: strict right lateral decubitus, hip and knee joints bent
- Radiography scale at the median level between the gluteal fold
- Projection: lateral, perpendicular to the film
- Central ray: 2 FB under the pelvic crest, 3 FB anterior to the line of the spinous process
- Exposure: 115 kV



► Criteria for a Good Radiographic View

Mediolateral oblique:

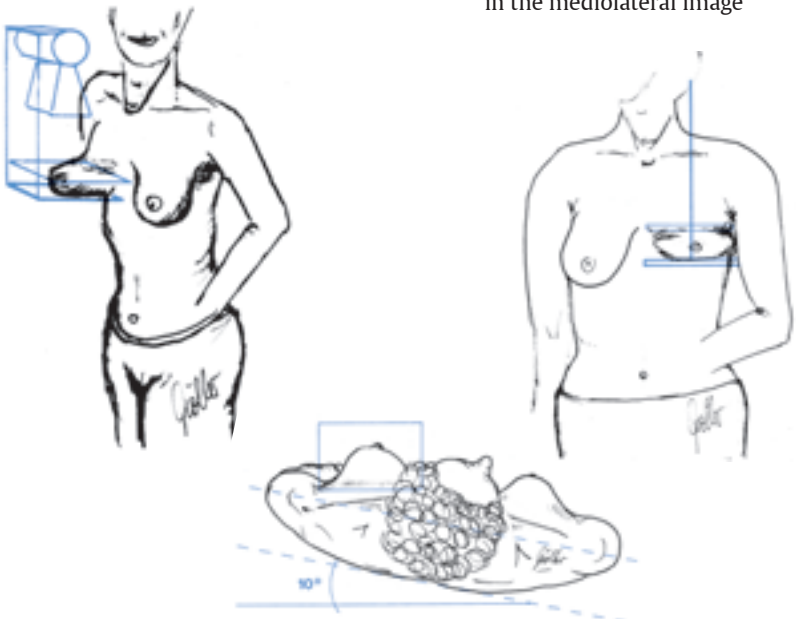
- The pectoral muscle should appear as a triangle (with an angle of about 20°) (1)
- The pectoral muscle extends to the level of the nipple (the posterior nipple line can be used for guidance—an imaginary line connecting the nipple and the anterior edge of the pectoral muscle) (2)
- Nipple tangential outside the breast tissue
- Inframammary fold shown spread out (3)
- The distance from the nipple to the pectoral muscle on the pectoral–nipple line (PNL; a vertical line connecting the edge of the pectoral muscle and the nipple [4]) should vary not more than ± 1.5 cm from the distance on the PNL in the craniocaudal image

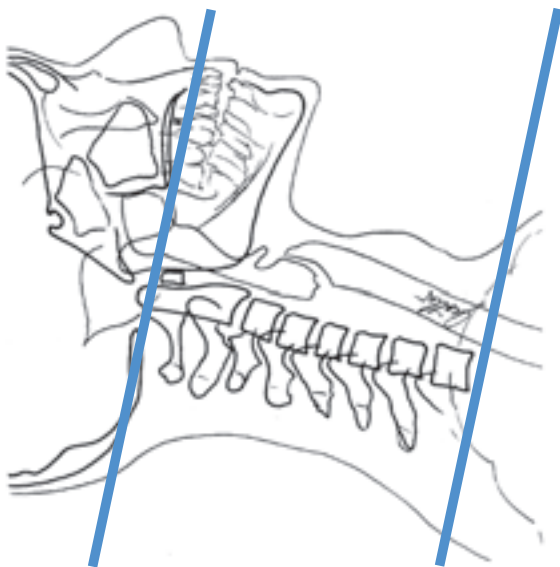


► Criteria for a Good Radiographic View

Craniocaudal

- Pectoral muscle should be crescent-shaped at the edge of the image (5)
- Retroglandular fatty tissue should be well displayed
- Medial fold displayed (6)
- Nipple tangential outside the breast tissue
- Entire breast (including medial) displayed
- The distance from the nipple to the pectoral muscle on the pectoral–nipple line (PNL; a vertical line connecting the edge of the pectoral muscle and the nipple [4]) should vary not more than ± 1.5 cm from the distance on the PNL in the mediolateral image





— Slice boundaries for CT of the neck

■ Patient Preparation

- Fasting for 3 h (due to contrast administration)
- Remove dentures
- Laboratory values (creatinine, baseline thyroid-stimulating hormone), allergy history, inquiry regarding renal and thyroid function, medication history

Materials

Contrast administration is needed if soft tissues in the neck are being investigated.

- 1 indwelling or butterfly catheter (16- or 18-gauge)
- Injector with 100 mL contrast (approximately 300 mg iodine/mL)
- Pressure dressing, swabs, skin disinfectant, adhesive bandages

▲ Positioning

- Supine, neck slightly stretched out

- Arms along the sides of the body, shoulders should be pulled down if appropriate (e.g., with aids: holding a rope that passes round the feet will pull the wrists downward)
- Head immobilized

Parameters

Spiral CT

- Scan range start: adjust the base of the skull (e.g., hard palate–back of the head) to the issue being investigated (e.g., floor of the mouth or thyroid gland)
- Scan range end: e.g., aortic arch (adjust to issue being investigated)
- Breathing: breath held, no swallowing
- Digital scout view: lateral (256 mm) or AP (256 mm or 512 mm)
- Scanning unit tilt: 0–20°
- Magnification: floor of the mouth or neck should fill the image as much as possible
- Scan direction: caudocranial
- Documentation, soft-tissue window:
WL: 40–60 HU
WW: 200–400 HU
- Reconstruction: Soft-tissue filter (core), bone filter if appropriate (e.g., when investigating fractures or tumor)

MRI of the Pelvis**■ Patient Preparation**

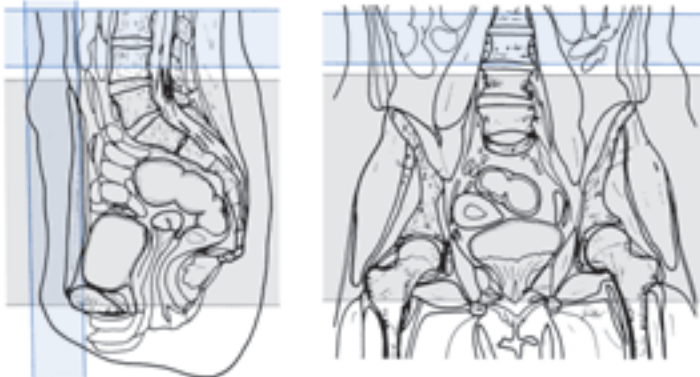
- Patient should visit the rest room before the examination
- Patient should be given information about the procedure and should be offered ear protection (e.g. ear plugs)
- All clothes except underwear should be removed
- Any metal items should be removed (hearing aids, hairpins, piercing, etc.)
- Depending on the issue being investigated, the patient should drink one bag of oral contrast (e.g., Abdoscan) 1 h before the examination
- An indwelling catheter may be placed

▲ Positioning

- Supine, body array coil or body coil, cushions placed under the legs

Sequences

- Scout: sagittal and transverse (three levels if possible)
1. *Transverse sequence:*
 - T2, possibly fat-saturated (example: tse TR 2500–4500, TE 100–130)
 - Slice thickness: 8 mm
 - Interslice interval: 1–1.3
 - Phase-encoding direction: AP
 - Saturation: (a) transverse (parallel) over the slices for vascular saturation; (b) ventral, coronal (perpendicular to the slices) over the abdominal fatty tissue



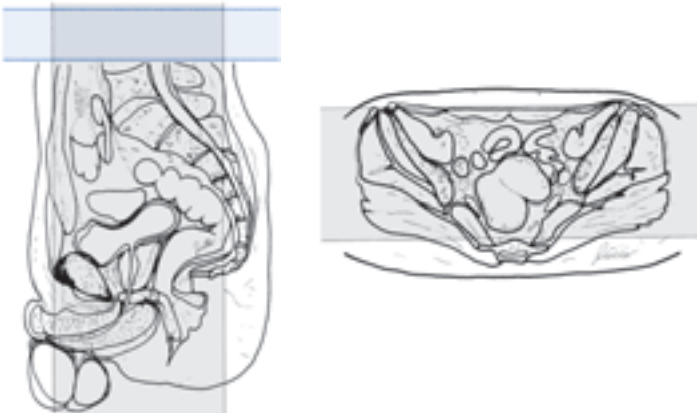
Transverse pelvis, sequence 1

2. *Transverse sequence:*

- T1 (example: se TR: 450–600, TE 12–25)
- Slice thickness: 8 mm
- Interslice interval: 1.3
- Phase-encoding direction: AP
- Saturation: (a) ventral, coronal (perpendicular to the slices) over the abdominal fatty tissue; (b) transverse over the slices for vascular saturation

3. *Coronal sequence:*

- T2 (example: tse TR 2500–4500, TE 100–130)
- Slice thickness: 5–6 mm
- Interslice interval: 1.3
- Phase-encoding direction: HF
- Saturation: transverse over the slices for vascular saturation



Coronal pelvis, sequence 3

Possible 4th transverse sequence: T1 as in sequence 2, but after contrast administration (Gd-DTPA)

! Tips & Tricks

- Intravenous Buscopan can be administered to reduce bowel motility
- An “abdominal bandage” can be applied to limit respiratory excursions

Page numbers in *italics* refer to illustrations

A

- abdomen 220–225
 - CT 276–291, 284
 - combined abdominal and pelvic CT 288–291, 288
 - combined abdominal CT 280–283, 280
 - upper abdomen 276–279, 276
 - lateral decubitus position 224–225, 224
 - MRI 344–347
 - coronal sequence 345, 345
 - transverse sequence 344–345, 344
 - supine position 222–223, 222
 - upright position 220–221, 220
- abdominal vessels, CT angiography 317–319, 317
- abscess
 - cervical spine 332
 - lumbar spine 338
- Achilles tendon 203
- acromioclavicular joints 86–87, 86, 88, 88, 106, 106
 - AP projection 92–93, 92
- Altschul position, petrous bones 28, 28, 29
- angiography *see* CT angiography; digital subtraction angiography (DSA); peripheral angiography
- ankle joint 184, 186, 188, 190–197, 200
 - AP projection 190–191, 190
 - lateral projection 192–193, 192
 - oblique projection 194, 195
 - external rotation 194, 195
 - internal rotation 194, 195
 - stress views 196–197, 196
 - see also* lower extremity
- antrum 236, 237
- aorta
 - abdominal 317
 - thoracic 314

- aortic arch 218, 250
- arm *see* upper extremity
- arthrography, shoulder 309, 356
- atlantoaxial joint 40
- atlantooccipital joint 40
- atlas 40, 41
- axis 40

B

- Bernageau position, glenohumeral joint 105
- biliary tract, MRI 347, 347
- bladder 247, 350–351, 350, 351
- bony hemithorax
 - AP projection 78–81, 78, 80
 - oblique projection 78–81, 78, 80
 - PA projection 78–81, 78, 80
- breast *see* mammography

C

- calcaneus 188, 192, 198, 200, 202–205
 - lateral projection 202–203, 202
 - see also* foot
- carpal bones 138
- carpal tunnel 142–143, 142
- carpometacarpal joint 156
- cecum 240, 243
- cervical spine 40–49
 - AP projection 40–43, 40, 42
 - CT 296–299, 296
 - extension 48–49, 48
 - flexion 48–49, 48
 - fracture 333–334
 - lateral projection 44–45, 44
 - MRI 330–334
 - coronal sequence 332, 332, 334
 - sagittal sequence 330–331, 330, 332, 333
 - transverse sequence 331, 331, 334
 - oblique projection 46–47, 46
- cervical vessels, digital subtraction angiography 250–257

- intra-arterial approach 255–257, 255
 - venous injection 250–251, 250
 - central 252–254, 252
 - cervicothoracic junction 52
 - cervicothoracic region 50–51, 50
 - lateral 50, 51
 - oblique 50, 51
 - chest 214–219
 - CT 272–275, 272
 - lateral projection 216, 217
 - MRI 341–343
 - coronal sequence 341, 341
 - transverse sequence 342, 342
 - with Gd-DTPA 343
 - oblique positions 218–219, 218
 - PA projection 214, 215
 - recumbent position 215
 - chin 20–21, 20
 - cholecystography 226–227, 226
 - Chopart joint 208
 - clavicle 88–91
 - AP projection (upright position) 88–89, 88
 - oblique (tangential) projection 90–91, 90
 - Clemenschtsch projection, mandible 16–17, 16
 - Cleopatra view, breast 233
 - coccyx
 - AP projection 75
 - lateral projection 76–77, 76
 - colon
 - contrast enema examination 241–244, 242
 - variation 244–245
 - left colonic (splenic) flexure 243, 244
 - right colonic (hepatic) flexure 243, 244
 - transverse colon 243
 - computed tomography (CT) 265–319
 - abdomen 276–291, 284
 - combined abdominal and pelvic CT 288–291, 288
 - combined abdominal CT 280–283, 280
 - upper abdomen 276–279, 276
 - cervical spine 296–299, 296
 - chest 272–275, 272
 - extremities 307–313, 307, 310
 - contrast CT 309
 - CT arthrography 309
 - high resolution 310, 311–313
 - spiral CT 307–308, 311
 - head 266–267, 266
 - lumbar spine 300–303, 300
 - contrast CT 302–303, 306
 - myelo-CT 302, 306
 - spiral CT 300–301, 304–306, 304
 - neck 268–271, 268
 - spiral CT 269
 - pelvis 292–295, 292
 - combined abdominal and pelvic CT 288–291, 288
 - planes 265, 265
 - thoracic spine 300–303, 300
 - myelo-CT 302, 306
 - spiral CT 300–301, 304–306, 304
 - see also* CT angiography
 - costal junctions 52, 52
 - costophrenic angle 214, 216, 218
 - costophrenic space 224
 - crista occipitalis interna 34, 34
 - CT *see* computed tomography (CT)
 - CT angiography 314–319
 - abdominal vessels 317–319, 317
 - thoracic vessels 314–316, 314
- D**
- Défilé view, patella 182–183, 182
 - diaphragm 220, 222, 224
 - digital subtraction angiography (DSA),
 - cervical vessels 250–257
 - intra-arterial approach 255–257, 255
 - venous injection 250–251, 250
 - central 252–254, 252
 - disseminated encephalomyelitis 333
 - duodenal bulb 236, 237

E

- elbow joint 120–125, 128, 130
 - AP projection 120–121, 120
 - axial projection (ulnar sulcus) 124–125, 124
 - lateral projection 122–123, 122
 - see also upper extremity
- epicondyles 124
- epilepsy 324–325, 325
- esophagus 218, 235
 - hiatal hernia 236, 237

F

- femoral artery puncture 256, 260
- femoral condyles 176, 178, 180, 184
- femoral head, contour view (Schneider projection) 166, 166–167
- femoral vein puncture 253
- femur 170–173
 - AP projection 170–171, 170
 - lateral projection 172–173, 172
 - with both hip and knee joints 171, 173
 - see also femoral condyles; femoral head
- fibula 190, 192, 194
- fingers 152–155
 - dorsovolar (PA) projection 152–153, 152, 153
 - lateral projection 154–155, 154
 - see also hand
- foot 198–201, 198
 - CT 310
 - forefoot, dorsoplantar projection 206–207, 206
 - lateral projection 200–201, 200
 - oblique projection 208–209, 208
 - posterior, standing, alignment view 188–189, 188
 - see also calcaneus; lower extremity; toes
- foramen ovale 30
- forearm 128–131

- AP projection 128–129, 128
- distal 138
- lateral projection 130–131, 130
- see also elbow joint; hand; upper extremity; wrist joint
- frontal sinus 10, 10

G

- galactography 248, 249
- gallbladder 227
- gastric cardia 236
- gastric fundus 236
- gastrointestinal tract
 - colon, contrast enema examination 241–244, 242
 - variation 244–245
 - small bowel series, double-contrast studies 238, 239–240
 - upper 234–237, 234
 - variations 236–237
- glenohumeral joint, profile view (Bernageau position) 105
- Grashey position (lateral process of the scapula) 105
- great toe
 - dorsoplantar projection 210–211, 210
 - lateral projection 212, 213
- Guttman technique, pelvis 65

H

- hamate, hamular process 142
- hand 132–137
 - dorsovolar (PA) projection 132–133, 132
 - lateral projection 136–137, 136
 - oblique projection 134–135, 134
 - Norgaard position 135
 - see also fingers; thumb; upper extremity
- head, CT 266–267, 266
- Hermodsson position, shoulder 109
- hiatal hernia 236, 237

- hip 160–165, 170, 171, 172, 173
 AP projection 160–161, 160
 axial projection 162–165, 162, 164, 168–169, 168
 antetorsion view (Rippstein position) 169
 faux-profile view 165
 Lauenstein projection 162, 163–165, 164
 sitting, semiaxial projection 169
 MRI 357–359
 coronal sequence 357, 357
 sagittal sequence 358, 358
 transverse sequence 357–358, 358
- humeral condyles 122
 humeral head 104, 118
 humeroulnar joint 122
 humerus 112–115, 118
 AP projection 112–113, 112
 lateral projection 114–117, 114, 116
- I**
- ileum 240
 iliac crest 226
 iliac wings (Letournel projection) 66–67, 66
 faux-profile view 67
 low iliac-wing view 67
 inferior petrous ridge 34, 34
 inner ear 323–324, 323, 324
 interphalangeal joints 152, 154
 intervertebral foramina 46
- J**
- jejunum 239–240
 Johner position, shoulder 109
- K**
- kidneys 277
 knee joint 170, 171, 172, 173, 174–183, 184, 186
 AP projection 174–175, 174
 CT 307
 Défilé view 182–183, 182
 lateral projection 176–177, 176
 MRI 360–362
 coronal sequence 360, 360, 362
 sagittal sequence 361, 361, 362
 transverse sequence 361, 361
 with gadolinium 362
 stress studies 180–181
 AP 180–181, 180
 lateral 180–181, 180
 tunnel view 178–179, 178
see also lower extremity
- L**
- labrum diagnosis 356
 larynx 271
 Lauenstein projections, hip 162, 163, 164
 Leer–Narché oblique shoulder view 97, 98
 leg *see* lower extremity
 lines of projection 2–3, 2, 3
 Lisfranc joint 208
 liver 277, 281
 MRI 344–347
 after superparamagnetic contrast (Endorem) 346
 biliary tract 347, 347
 coronal sequence 345, 345
 transverse sequence 344–345, 344
- lower extremity
 CT 307–313
 contrast CT 309
 high resolution 310, 311–313
 spiral CT 307–308, 311
 lower leg 184–189
 AP projection 184–185, 184
 lateral projection 186–187, 186
 standing, alignment view 188–189, 188
see also ankle joint; foot; knee joint
 peripheral angiography 258, 259–260

venogram 262–264, 262
see also ankle joint; foot; knee joint
 lumbar junction, lateral projection 59
 lumbar spine 56–63
 AP projection 56–57, 56
 supine 57
 CT 300–303, 300
 contrast CT 302–303, 306
 myelo-CT 302, 306
 spiral CT 300–301, 304–306, 304
 functional studies 62–63, 62
 lateral projection 58–59, 58
 supine 59
 MRI 335–340
 coronal sequence 337
 postoperative 338
 sacroiliac joint 339–340, 339, 340
 sagittal sequence 335–336, 336, 338
 transverse sequence 336, 337, 338
 oblique projection 60–61, 60
 lumbosacral junction 58, 58, 62, 62
 AP projection 57
 lungs 214, 216, 218

M

magnetic resonance imaging (MRI)
 320–362
 cervical spine 330–334, 330, 331, 332
 chest 341–343, 341, 342
 hip 357–359, 357, 358
 knee 360–362, 360, 361
 liver 344–347, 344, 345
 after superparamagnetic contrast
 (Endorem) 346
 biliary tract 347, 347
 lumbar spine 335–340, 336, 337
 postoperative 338
 sacroiliac joint 339–340, 339, 340
 neurocranium 320–329, 320–329
 epilepsy 324–325, 325
 excluding hemorrhage 322
 inner ear 323–324, 323, 324
 orbit 325–327, 326, 327

 postoperative 323
 sella 327–329, 328, 329
 pelvis 348–353, 348, 349
 uterus, vagina, bladder 350–351, 350, 351
 prostate 351–353, 352, 353
 shoulder 354–356, 354, 355
 indirect arthrography 356
 thoracic spine 335–340
 malleoli 190, 192, 194, 196
 mammography 228–233
 axillary projection 232–233
 Cleopatra view 233
 craniocaudal 229, 229, 231–232
 galactography 248, 249
 lateromedial 232
 mediolateral 230, 230, 232
 mediolateral oblique 228, 228, 231
 mandible 16–19, 30
 Clementsitsch (PA) projection
 16–17, 16
 lateral projection 18–19, 18
 mandibular condyles 19, 30, 32, 32
 Martius technique, pelvis 65
 mastoid cells 32, 32
 Mayer position, petrous bones 36–37, 36
 medial cubital vein puncture 251, 253
 mediotarsal joint 208
 metacarpal bones 138, 140, 150
 metacarpophalangeal joint 152, 154
 metacarpus 150–151, 150
 MRI *see* magnetic resonance imaging
 (MRI)

N

nasal bones 22–23, 22
 navicular bone 144–147, 144, 146–147
 neck
 CT 268–271, 268
 spiral CT 269
 see also cervical spine
 neurocranium, MRI 320–329, 320–329
 coronal sequence 321, 321
 epilepsy 324–325, 325

- excluding hemorrhage 322
 - inner ear 323–324, 323, 324
 - orbit 325–327, 326, 327
 - postoperative 323
 - sagittal sequence 322, 322
 - sella 327–329, 328, 329
 - transverse sequence 320–321, 320
 - nipple 228, 229, 230, 249
 - Norgaard position, hand 135
- O**
- obturator foramen 68, 68
 - occiput 28, 28, 29
 - odontoid process 40, 41
 - olecranon 124
 - optic foramen 14, 14
 - orbits 12–15
 - MRI 325–327, 326, 327
 - coronal 326, 326
 - parasagittal 327, 327
 - transverse 326, 326, 327
 - PA projection 12–13, 12
 - Rhese projection 14–15, 14
- P**
- pancreas 277, 281
 - paranasal sinuses 8–11
 - occipitofrontal (PA) projection 10–11, 10
 - occipitomenal projection 8–9, 8
 - Parma position, mandibular condyles 19
 - patella 170, 172, 174, 176, 184
 - axial projection (Settegast position) 183
 - Défilé view 182–183, 182
 - see also knee joint
 - pectoral muscle 228, 229, 230
 - pelvis 64–69
 - AP projection 64–65, 64
 - CT 292–295, 292
 - combined abdominal and pelvic CT 288–290, 288
 - Guttman technique 65
 - iliac wings (Letournel projection) 66–67, 66
 - faux-profile view 67
 - low iliac-wing view 67
 - lower pelvic view 65
 - Martius technique 65
 - MRI 348–353
 - coronal sequence 349, 349
 - prostate 351–353, 352, 353
 - transverse sequence 348–349, 348
 - uterus, vagina, bladder 350–351, 350, 351
 - obturator view 68–69, 68
 - high obturator view 69
 - Pennal techniques 65
 - peripheral angiography 258, 259–260
 - Pennal techniques, pelvis 65
 - peripheral angiography, pelvis and lower extremities 258, 259–260
 - petrous bones
 - comparison view (Altschul position) 28, 28, 29
 - Mayer position 36–37, 36
 - Schüller position 32–33, 32
 - Stenvers position 34–35, 34
 - phalanges 198, 200
 - pheochromocytoma 279
 - pisiform bone 142, 148–149, 148
 - pneumothorax 215
 - projection lines 2–3, 2, 3
 - prostate gland MRI 351–353, 352, 353
 - coronal sequence 352, 352
 - transverse sequence 351, 352, 353, 353
 - pyelogram, intravenous 245–247, 245
 - bladder films 247
 - compression films 247
 - pylorus 236, 237
- R**
- radial head 126–127, 126
 - radius 128, 128, 130, 130, 140
 - rectum 243, 244
 - retrocardiac space 218

- Rhese projection, orbits 14–15, 14
rib 226
- Rippstein position, hip 169
- Rundström IV and Hirtz technique
30–31, 30
- S**
- sacroiliac joints 70–73
AP projection 71–72, 71
lithotomy position 73
MRI 339–340
paracoronaral sequence 339–340,
340
paratransverse sequence 340, 340
sagittal sequence 339, 339
oblique projection 70–71, 70
- sacrum 74–77
AP projection 70–71, 70
lateral projection 76–77, 76
- scapula 94–99
AP projection 94–95, 94
lateral process of 105
profile view (lateral projection)
96–99, 96, 98, 99
- Schatzki position 236, 237
- Schneider projection, femoral head 166,
166–167
- Schüller position, petrous bones 32–33,
32
- Seldinger technique, femoral artery
puncture 256, 260
- sella
lateral projection 38–39, 38
MRI 327–329, 328, 329
coronal 328, 328
sagittal 328, 329
PA projection 39
- Settegast position, patella 183
- shoulder
AP projection 100–105, 100, 102–104
in two planes 105
axial projection 106–107, 106
CT 307
arthrography 309
lateral transthoracic projection
118–119, 118
Leer–Narché oblique view 97, 98
MRI 354–356
indirect arthrography 356
paracoronaral sequence 354–355,
355
parasagittal sequence 355, 355
transverse sequence 354, 354
tangential projection 108, 109–111,
110
Hermodsson position 109, 111
Johner position 109, 111
west point view 111
transscapular view (Y image) 97, 99
- skull 4–39
cranial base 30–31, 30
lateral projection 6–7, 6
mandible 16–19
nasal bones 22–23, 22
occiput view (Towne position) 28, 28,
29
orbits 12–15
PA projection 4–5, 4
paranasal sinuses 8–11
petrous bones 28, 28, 29, 32–37, 32,
34, 36
sella 38–39, 38
zygomatic arch 24–27, 24, 26
- small bowel series, double-contrast
studies 238, 239–240
- sphenoid sinus 8, 8
- spine *see* cervical spine; lumbar spine;
thoracic spine
- spinous 30
- spondylodiskitis 332–333, 338
- Stenvers position, petrous bones 34–35,
34
prone 34, 35
supine 34, 35
- sternoclavicular joint 88, 88
- sternum 82–85, 216
lateral projection 84–85, 84
PA (oblique projection) 82–83, 82
- stomach 234–237, 234
- subtalar joint 194

superior petrous ridge 4, 8, 10, 12, 34
 symphysis 222, 224
 syringomyelia 333

T

talocalcaneonavicular joint 192, 202
 talus 190, 192
 tarsometatarsal joint 208
 thoracic spine 52–55, 52, 54
 AP projection 52–53, 52
 CT 300–303, 300
 myelo-CT 302, 306
 spiral CT 300–301, 304–306, 304
 lateral projection 54–55, 54
 MRI 335–340
 coronal sequence 337
 sagittal sequence 335–336
 transverse sequence 336
 thoracic vessels, CT angiography
 314–316, 314
 thoracolumbar junction 52–55, 54, 58,
 58, 62, 62
 thorax *see* chest
 thumb 156–157
 lateral projection 158–159, 158
 volodorsal (AP) projection 156–157,
 156
 tibia 194
 toes 207
 dorsoplantar projection 210–211, 210
 great toe 210–211, 210, 212, 213
 lateral projection 212, 213
 see also foot
 Towne position, occiput 28, 28, 29
 trochlea 124

U

ulna 128, 128, 130, 130, 140
 coronoid process 126–127, 126
 ulnar sulcus 124–125, 124
 upper extremity
 CT 307–313

contrast CT 309
 CT arthrography 309
 high resolution 310, 311–313
 spiral CT 307–308, 311
 see also elbow joint; forearm; hand;
 wrist
 uterus 350–351, 350, 351

V

vagina 350–351, 350, 351
 venogram, lower leg 262–264, 262
 vertebrae
 cervical 44, 44, 48, 48, 50, 50
 thoracic 50, 50, 52, 52, 54, 54
 vestibular schwannoma 323

W

wrist joint 128, 130, 132, 134, 136,
 138–141
 CT 310
 dorsovolateral (AP) projection 138–139,
 138
 lateral projection 140–141, 140
 see also upper extremity

Z

zygomatic arch 24–27, 24, 26
 “jug handle” view 26–27, 26