ARA - ROUTINE PROTOCOLS

Revised 10/5/10 - Added pedi sacrum/coccyx
Revised 8/9/10: TMJ protocols for tomo sites only
New alpha codes added 8/30/10 - Pedi Protocols for Rickets & Blounts
Revised 11/14/12 - Lateral Mandible
Revised 10/13/15 - SID on Soft Tissue Neck per ACC.
Revised 6/5/17 - Per Dr. Farhataziz, change Eye Foreign body 'Lateral x3' to a 1 view Lateral only. Leave the Modified Waters x2 as is.

ADULTS HEAD & NECK

ALPHA CODE	EXAM	PROJECTIONS	COMMENTS
RTORB1V	Orbital screening - pre MRI procedure	Modified Waters - 1 view (CTP code -70030)	Pt's head is positioned like a regular waters with less extension of the chin. Petrous pyramids are below the orbits but may be superimposed in the max. sinus. Pt is to close eyes and concentrate on holding them still for the exposure.
RTEYE	Eye F/foreign body	Modified Waters x2, Lateral	The Modified Waters projection is taken with pt looking up and another looking down. Only one lateral view is needed.
RTMANC	Mandible	PA, both obliques, OM Towne, lateral	For the Lateral position, place the side of interest closest to the bucky
RTMAS	Mastoids	PA, Bil Laws view, Towne	CT recommend choice of imaging
RTFAC	Facial bones	PA, Waters, Unexaggerated Waters, Lateral, SMV	All done upright (Unexaggerated waters - lower chin)
RTNAS	Nasal bones	Lateral - R & L, Waters	
RTOPT	Optic Foramina	PA Caldwell, Bil Rhese View	
RTORB	Eye-Orbits	PA Caldwell, Waters (Upright), Unexag Waters, Bil Lateral Views, Bil Rhese Views	
RTSI1V	Sinus, 1-2 views	Open mouth waters - upright (if 2 V ordered do PA Caldwell & Open Mouth Waters	All done upright, petrous ridges must be below floor of max sinus
RTSI1V	Sinus, 1-2 views for surg planning	PA Caldwell and PA Caldwell with tube angle	Done upright, penny placed on pt's forward, following physician's instructions. (Penny is used for digital measurement accuracy) See memo of 1/4/10)
RTSI3 V	Sinus, 3 view	PA Caldwell, open mouth waters, lateral - all upright	All done upright (SMV -only done if specifically ordered)
RTSEL	Sella Turcica	Lateral, PA caldwel	Must be centered perfectly over sella turcica (CR _I_ 3/4 inch anterior to & 3/4 inch superior to the e.a.m.)
RTSK	Skull - PA & Lat	PA Caldwell and lateral	
RTSK4V	Skull Complete	PA Caldwell, towne, both laterals	May do AP Caldwell - if necessary
RTTMJ	TMJs	**Note:** At sites with tomo units, tomograms are study of choice and should be done over routine radiography, if the the tomo room is available. If the tomo room is not available, make note and perform non-tomo protocol. Protocol - Lateral Tomograms, Bilaterally with Open & Closed Mouth	If patient arrives at a non-tomo site, the following protocol should be followed: **Non-Tomo Protocol:** **Towne** - Open & Closed Mouth **Laws Lateral** (axiolateral oblique projection) - Open & Closed Mouth
RTNECK	Neck, Soft Tissue	AP C-sp, Lateral Soft tissue technique (must include soft palate to thoracic inlet)	Take on inspiration to obtain air in nasopharnx. AP View - 40 SID Lateral View - 72 SID
** Dr Aronin Special view:			
	Oblique of Skull	Oblique Skull /Shunt Valve in Center of Films	Clearly visualize the valve of the shunt, so that the radiologist can read the positioning indicator on the valve and relate this value to Dr Dr. Aronin in the patient's imaging report.

ARA - ROUTINE PROTOCOLS

Revised 6/19/12 - Lat Sternum to 72 inches per Merrills Revised 06/07/12 - Chest Projections Revised 01/12/12 - Rib Projections
Revised 3/19/09

ADULT CHEST & RIBS

Alpha code	Procedure code	Exam	Projections	
RTCH1V	71045	Chest - 1 View	PA (or decub if ordered)	72" Full Inspiration
RTCH2V	71046	Chest - 2 View	PA & Left Lateral	72" Full Inspiration
RTCH3V	71047	Chest - 3 Views	PA, Lateral & AP Apical Lordotic View (or decub if ordered)	Clavicle must be above apices. Decubitus can replace Apical if ordered by referring.
RTCH4V	71048	Chest - 4+ Views	PA, Lat & Obliques (or any other ordered views)	Obl may be AP or PA | AP - Affected side closest to film |PA - Affected side is turned away from film | L PA Obl - pt is rotated 55 degrees, R PA Obl - pt is rotated 45 degrees. Debubitus can replace Obliques if ordered by referring.
RIB STUDIES: Please make sure the correct Alpha and CPT code is used. Note: 3 View Unilateral (RTRIU3) and 4 View Bilateral (RTRIB4) - are used ONLY when your projections for this study INCLUDES a PA Chest in the same Acc#.				
RTRIB3**	71110	Ribs - Bilateral 3 view	AP/PA Upper Right Ribs, AP/PA Upper Left Ribs, Oblique Upper Right Ribs, Oblique Upper Left Ribs, AP Right Lower Ribs (using 10x12 collimated on full expiration), AP Left Lower Ribs (using 10x12 collimated on full expiration). May do oblique of lower ribs if necessary.	BB to remain on all images |Upper Ribs - Full Inspiration, to be done separately |Lower Ribs - Full Expiration and use 10X12, collimate NOTE: If PT is able to communicate and states the pain is in the lower rib area, a lower oblique should be performed.
** RTRIB3 done only when separate chest x-ray was ordered & performed also.				
RTRIB4	71111	Ribs - Bilateral 4 View	PA Chest, AP/PA Upper Right Ribs, AP/PA Upper Left Ribs, Oblique Upper Right Ribs, Oblique Upper Left Ribs, AP Right Lower Ribs (using 10x12 collimated on full expiration), AP Left Lower Ribs (using 10x12 collimated on full expiration). May do oblique of lower ribs if necessary.	BB to remain on all images | PA Chest - 72", High KVp / Projections for Rib Detail 40" / Low KVP (65kvp range) | Upper Ribs to be done separately. | NOTE: If PT is able to communicate and states the pain is in the lower rib area, a lower oblique should be performed.
RTRIU2**	71100	Ribs - Unilat 2 View	AP/PA Upper Ribs of Affected Side, Oblique Upper Ribs of Affected side, AP lower ribs (using 10 X 12)	BB to remain on all images. Upper Ribs - Full Inspiration Lower Ribs - Full Expiration and use 10X12, collimate NOTE: If PT is able to communicate and states the pain is in the lower rib area, a lower oblique should be performed.
** RTRIU2 done only when separate Chest X-Ray Ordered & Performed also.				
RTRIU3	71101	Ribs - Unilat. 3 View	PA Chest, AP/PA Upper Ribs of Affected Side, Olique Upper Ribs of Affected Side, AP Lower Ribs (using 10X12)	BB to remain on all images. PA Chest - 72" High KVp / Ribs Projections done at 40" Upper Ribs - Inspiration / Lower Ribs - Expiration | NOTE: If PT is able to communicate and states the pain is in the lower rib area, a lower oblique should be performed.
RTST2V	71120	Sternum	RAO (Pt rotated 10 -25 degrees) & Lat (72"SID)	On Oblique - use breathing technique
RTST3V	71130	Sternoclavicular joints	PA, both obliques	PA - to include bil sc joints, Rt obl & Lt olb.- slight rotation

ARA - ROUTINE PROTOCOLS

Revised 3/2/09 - Adult Scoli , Revised 3/30/12 - NeuroTexas Protocol Added, Revised 4/18/12 - Adult Scoli, Revised 4/18/12 - Adult Lateral T-Spine to include Swimmers if needed, Revised 7/12/13 - Updated RTLSFE, it should only be for 2-3 bending views (not entire l-spine views)., Revised 3/18/14 4V L-Spine
1/5/16 - Updated Scoli CPT codes and also hip uni and hip bilat codes due to 2016 changes 1/8/16 - Updated Bilat Hip Exam code from RTHI5V to RTHIBIL.
3/14/16 - Updated Oblique C-Spines to AP only no more PA Obliques.
3/22/16 - Updated CPT code for RTHIBIL from 73521 to 73522, having tech's do seperate lat hips.
1/16/16 -Adult Scoliosis to be done PA per OPC.

ADULTS SPINE, PELVIS AND HIPS

Alpha code	Procedure code	Exam	Projections	Comments
RTSPSU	72010	AP/LAT Entire Sp	C-Spine - AP, OM, Lat (at 72'), AP, LAT, Swimmers T-SP AP, LAT, L5S1 Spot	
RTSP1V	72020	Lateral (unless otherwies specificed)	Lateral C-Sp or Lateral Lumbar Spine	Lateral C-Sp - 72" SID, Lateral Lumbar 40" SID/full expiration
RTCS2V	72040	C-Spine, 2 Views	AP and Lat	If no recent c-spine was done, include an open mouth view and keep the charge as a 2 view.
RTCS3V	72040	C-Spine, 3 Views	AP, OM and Lat	■ Lat 72" SID. On the lateral: C6-C7 and the C7-T1 joint space must be well visualized. If the lateral fails to visualize this, a swimmers view must be done in addition to the lateral (at no extra charge, keep exam as a 3 view like it was ordered).
RTCS4V	72050	C-Spine, 4 Views	AP, Lateral, Flexion and Extension	
RTCS5V	72050	C-Spine Complete, 5 Views	AP, OM, Both **AP Obliques** and Lateral	Lateral - 72" SID | On the Lateral: C6-C7 and the C7-T1 joint space must be well visualized. If the lateral fails to visualize this, a swimmers view should be done in addition to the lateral (at no extra charge).
RTCS5V	72050	C-Spine for C1-2 Instability	AP, OM, Lateral, Flexion & Extension	Often done on Downe Syndrome PT's./ PT's head should not be forced into position for Flex/Ext. The patient's head may be guided down but may not be held during exposure.
RTCSTO	72052	C-Spine Complete w/ Flex & Ext	AP, OM, Both **AP Obliques,** Lateral, Flexion & Extension	Oblique's, Lateral and Lateral Flex & Ext - 72" SID
RTHI1V	73501	Hip Joint, 1 View	AP Pelvis	
RTHI2V	73502	Hip Joint, 2 Views	AP Pelvis & Frog Lateral of affected hip (or Surg Lateral)	
RTHIBIL	73522	Bilat Hips, 2 Views	AP Pelvis, **Individual** Frog Lateral of each Hip	**No Frog Pelvis view for Adults**
RTLS2V or 3V	72100	L-Spine, 2-3 Views	AP and Lateral OR AP, Lateral and L_5S_1 Spot	No spot view, unless a 3 view is ordered.
RTLS4V	72110	L-Spine, 4 Views	AP, Both Oblique's, Lateral **OR** AP, Lateral, Flexion, Extension	
RTLS5V	72110	L-Spine Complete, 5 views	AP, Both Obliques, Lateral and L_5S_1 Spot	
RTLSTO	72114	L-Spine Complete w/ Bending Views	AP, Both Obliques, Spot, Standing Lateral (neutral), Flexion and Extension. (If ordered: may be supine RT and LT Bending)	On lateral flexion, the patient should be bent forward from the waist (to touch toes if possible) | Minimum of 6 views
RTLSFE	72120	L-Spine Bending Views Only (2-3 views only)	Lateral Flexion and Lateral Extension. May also be used for RT side and LT side bending in place of flex/ext, if ordered as such.	On lateral flexion, the patient should be bent forward from the waist (to touch toes if possible) | This charge is to be used when ONLY bending views are ordered (no other addl views).
RTPE1V	72170	Pelvis, 1 View	AP Pelvis	AP - rotate both ankles and legs medially.
RTPE2V	72170	Pelvis, 2 Views	AP Pelvis and Frog Pelvis	AP - rotate both ankles and legs medially.
RTPE3V	72190	Pelvis, 3 Views	AP Pelvis, Frog Pelvis & Supp. View as needed	■ AP - Rotate both ankles and legs medially, additional view(s) depends upon PT history. ■ May be obl for iliac crest, tang for acetabulum.
RTHIPE	73540	see pedi protocols		
RTTS2V	72070	T-SP, AP/Lat	AP, Lateral	■ To include the entire T-Spine. If upper T-Spine is not demonstrated on Lateral, a Swimmers View should be performed to include it (the charge will stay as 2V). ■ On Lateral, use breathing technique if possible
RTTL2V	72080	Thoracolumbar Spine, 2 Views	AP, Lateral	Center as indicated by pt's history/ referral
RTTS3V	72072	T-Spine, 3 Views	AP, Lateral and Swimmers	
RTTS4V	72074	T-Spine, 4 Views	AP, Both Obliques, Lateral and Swimmers	Minimum of 4 views.

ARA - ROUTINE PROTOCOLS

Revised 3/2/09 - Adult Scoli , Revised 3/30/12 - NeuroTexas Protocol Added, Revised 4/18/12 - Adult Scoli, Revised 4/18/12 - Adult Lateral T-Spine to include Swimmers if needed, Revised 7/12/13 - Updated RTLSFE, it should only be for 2-3 bending views (not entire l-spine views)., Revised 3/18/14 4V L-Spine
1/5/16 - Updated Scoli CPT codes and also hip uni and hip bilat codes due to 2016 changes 1/8/16 - Updated Bilat Hip Exam code from RTHI5V to RTHIBIL.
3/14/16 - Updated Oblique C-Spines to AP only no more PA Obliques.
3/22/16 - Updated CPT code for RTHIBIL from 73521 to 73522, having tech's do seperate lat hips.
1/16/16 -Adult Scoliosis to be done PA per OPC.

ADULTS SPINE, PELVIS AND HIPS

RTS3V	72202	S-I Joints, 3 Views	Ferguson Method AP, Both Obliques	Ferguson AP - PT is supine. Ensure PT is not rotated. Tube is angled 30 degrees cephalad. Central ray enters pt about 1 1/2 in. superior to the pubic symphysis. Obliques - Rotate PT appr 25 degrees, SI joint elevated is imaged
RTSACO	72220	Sacrum & Coccyx	AP Sacrum, AP Coccyx and Lateral Sacrum/Coccyx	AP sacrum - 15 degrees cephalad AP Coccyx - 10 degree caudad On lateral use lead strip to eliminate scatter posteriorlly.
RTSC1V	72081	* Scoliosis Survey	PA Spine for Scoliosis Screening - Standing	■ Pt done PA to include entire C-Spine to entire Hip Joint (shoes off). ■ If a patient is too tall to include the entire C-Spine and Hip Joint, it is acceptable to include C-4 to entire hip joint (shoes off). ■ Starting 2/16/10 - 1" calibration markers are placed on pt's back, 2' from spine at level of umbilicu on AP/PA projections, note in provider comments.
RTSC2V	72082	* Scoliosis Erect T-L	PA & Lateral Scoliosis Screening - Standing (for patient with history of Kyphosis or Lordosis)	■Pt is to be done PA include entire C-Spine to entire Hip Joint (no shoes). ■ If patient too tall to include the entire C-Sine, it is acceptable to include C-4 to entire Hip Joint (no shoes). ■ For Lateral projection, PT to stand in lateral position, shoulders should be parallel, humeri bent 90 degrees from the body. No leaning or slouching.
RTSC4V	72082	* Scoliosis Erect T-L	PA Standing, AP Supine, Lateral Standing	■ The supine projection is performed very seldom. The only routine supine scoliosis is performed for babies younger than 1 year. ■ Prior to performing a supine projection on any pt other than a baby, the tech should verify the order on the referral or in IDX scheduling notes. The tech may verify with the radiologist or referring physician if necessary. ■ The supine should be done with the pt supine on the table, use 14 X 17 (two plates - if necessary to include the entire spine from C-2 to hips) Use the maximum tube distance possible. Shielding can be used for the supine projection.
RTSCE4V	72083	* Scoliosis Survey	PA, Lateral, Right Side Bending, Left Side Bending	This is also known as the 'NeuroTexas Protocol' for Drs. Burnett, Fox and Webb. It may also be used for any other referring physician that orders the same views.

* For all Scoliosis Exams, please see memo titled "Scoli and Leg Length - Block Placement When Necessary", for instructions on block placement.

ARA - ROUTINE PROTOCOLS

9/28/12 - Calcaneus Projection updated to Axial and 40 degrees.

1/5/16 - Updated CPT code for Femur 2V due to 2016 CPT changes.

ADULT LOWER EXTREMITIES

Alpha code	Procedure code	Exam	Projections	Comments
RTAN2V	73600	Ankle 2V	AP & Lateral	
RTAN3V	73610	Ankle AP/LAT/Obl	AP, Obl & Lat	For the oblique, dorsiflex the foot, rotate the foot and entire leg 45-degrees medially
RTCALC	73650	Calcaneus	Axial (40 degree) & Lat	
RTFEMU	73552	Femur AP/LAT	AP & Lateral	
RTFO2V	73620	Foot - 2V	AP & Lateral	To be done standing, unless patient is unable to stand or the clinic has equipment limitations. Be sure to mark images as weight-bearing. Do not perform standing if the order states not to do weight-bearing.
RTFO3V	73630	Foot Complete	AP, Med Oblique & Lat	AP and Lateral projection should be done standing, unless patient is unable to stand or the clinic has equipment limitations. The oblique projection will be done on the table with the patient supine. No additional, non-wt bearing projections are necessary unless they are specifically ordered by the referring physician. Be sure to mark images as weight-bearing. Do not perform standing if the order states not to do weight-bearing.
Beg. 8/24/09		On knee studies that are ordered by a rheumatologists or othopedists, the AP projection is to be done standing. (affected knee only)		
RTKN2V	73560	Knee AP/Lat	AP & Lateral (see note above)	9 cm + - use bucky, AP & Lat 5 degree ceph angle / If Bilateral Standing Knees ordered, the AP should be done simultaneously on the same cassette.
RTKN3V	73562	Knee - 3 View	AP, Internal Obl & Lateral (see note above)	Obl - 45 degree medially / If Bilateral Standing Knees ordered, the AP should be done simultaneously on the same cassette.
RTKN4V	73564	Knee - Min 4 View	AP, Internal Obl, Lat & Sunrise (see note above)	Standard routine performed unless otherwise indicated / If Bilateral Standing Knees ordered, the AP should be done simultaneously on the same cassette.
RTKNST	73565	Knee Bil Standing	AP Bilateral Standing Only	Bilateral standing AP knees should be done simultaneously on the same cassette. If more than one view (AP) is ordered, this code should not be used.
RTTIB	73590	Leg AP/Lat (Tib-Fib)	AP & Lat (Include knee & ankle joints)	
RTTOE	73660	Toes	AP, Obl & Lat	

For studies not done routinely, such as sesmoid bones, views of the acetabulum, etc, the technologists should reference Merrill's Positioning Atlas for recommended projections that will best visualize the requested anatomy. These images should be checked by a radiologists before the patient leaves the ARA office.

ARA - ROUTINE PROTOCOLS			rev - 2/05/09 6/24/19 - added post OP abdomen protocol per hospital committee
ADULT ABDOMEN			
Alpha code	Exam	Projections	Comments
RTAB1V	Abdomen 1 V (KUB)	AP	**Expiration, include the diaphragm & symphysis.**
RTAB1V	Abdomen 1V (post OP surgery count)	AP	- AP Abdomen (to include pubic symphysis) - Additional AP crosswise over the diaphragm (if not included on the first image. * Must include entire abdomen area (even below diaphram to confirm there is no foreign body).
RTAB2V	Abdomen 2V	AP Supine & AP upright/ or	**Full expiration, upright must include diaphragms**
		AP & Lateral / or	**Full expiration - to visualize aneurysm**
		AP & Olb	**Full expiration - for localization**
RTAB3V	Abdomen 3V	Acute ABD Series, PA Chest, AP Abd, Upright ABD	
IVTLTD	IVP Limited w or w/o tomo	KUB scout film, Have film checked by radiologist. to performing technologist.	Dr Jeff Miller's protocol - see memo - SharePoint
IVTMO	**IVP with tomograms**	**** (the definite protocol for ea pt should be confirmed**	Scout films are checked by the radiologist and definite protocol given to the technologist. All images are to be checked by the radiologist prior to the patient emptying the bladder and prior ot the patient leaving the imaging site.
		by the radiologist for each patient prior to any imaging	
		Scout KUB, Scout 10 X 12 over kidneys.	
		Post contrast:	
		Level of tomographic cut to be determined by radioloigst.	
		tomo: 10 X 12 centered at kidneys:	
		1 minute tomo	
		2 minute tomo	
		3 minute tomo	
		5 minute - KUB 14 X 17	
		8 minute - KUB 14 X 17	
		10 minute full abd oblique, R & L, 14 X 17	
		15 minute centered over bladder, 10 X 12	
		Films checked by radiologist	
		Upright KUB - post void - 14 X 17	

ARA - ROUTINE PROTOCOLS

01/23/12 - Shoulder Collimation

3/15/13 Bilateral Clavicle Added

ADULT UPPER EXTREMITIES

Alpha code	Exam	Projections	Comments
RTCLAV	Clavicle	PA and PA Axial (25-30 degee caudad)	If pt AP - AP Axial with 25-30 degree cephalic angle
RTCLAVB	Clavicle Bilateral	PA and PA Axial (25-30 degee caudad)	Only to be charged if "Bilateral" is stated in the order. CPT codes 73000/LT and 73000/RT should be added.
RTSCAP	Scapula	AP & Lat	AP - abduct arm , Lat - scapula wing perp to IP
RTSH1V	Shoulder 1 View	AP External Rotation	
RTSH2V	Shoulder 2 Views	AP, External & Internal Rotation	To include the SC and AC joints
RTSH3V	**Shoulder Complete, 3 view**	**AP External Rotation, Y-View and Axial View**	**FOR HOSPITAL ONLY**
RTAC	AC Joints	AP With & Without Weights	Bilaterals done, upright, 72", density to visualize jts
RTHUM	Humerus 2 Views	AP & Lat	
RTEL2V	Elbow 2 Views	AP & Lat	Shoulder in same plane as elbow
RTEL3V	Elbow 3 Views		Med obl- for coronoid process/ lat obl - for head of radius
RTFOR	Forearm 2 Views	AP & Lat	
RTWR2V	Wrist 2 Views	PA & Lat	
RTWR3V	Wrist 3 Views	PA, Obl & Lat	If a scaphoid view is ordered, perform ulnar deviation view.
RTHA2V	Hand 2 Views	PA & Lat	
RTHA3V	Hand 3 Views	PA, Obl & Lat	On lateral, fingers must be fanned, keeping fingers parallel to plate to visualize interphalangeal joints. If one hand has been ordered and the pt has symptoms or a hx of arthritis, a ball catchers oblique should be done instead of the regular PA oblique.
RTHA3VBIRA	Hand AP/Obl/Lat - **For Arthritis**	PA, Norgaad (Ball Catchers) Oblique, Lat (cpt 73130, Hand, Rt & 73130 Hand, Lt)	Norgaad (Ball Catchers) - Hand is supinated to an angle of 35 degrees. Lateral - fingers fanned keeping fingers parallel to plate to visualize interphalangeal joints. * if only one hand ordered, see above RTHA3V protocol.
RTFING	Finger 3 Views	PA, Obl & Lat	In Tech Notes: Indicate digit by number (ex. 1st digit, 2nd digit etc.)

ARA - ROUTINE PROTOCOLS

ADULT MISCELLANEOUS

Alpha code	Procedure Code	Exam	Projections	Comments
RTOSSU	77075	**Adult Metastatic Survey**	AP & Lat Skull, AP Chest (for Ribs), AP & Lat C-Sp, AP & Lat T-Sp, AP & Lat L-Sp, AP Pelvis, AP bil. Humerus, AP bil forearm, AP bil femur, AP bil tibia	As of 8/2004, only this protocol will be used for all adult bone surveys.
RTBOAG	76020	**See pediatric protocol**		
CTLL	73700/52	**Bone length**	This study is done by CT	
		Shunt Series		
RTSHUN	71020	**Chest, 2 V**	PA & Lateral Chest	** If Dr Aronin's patient or if patient has shunt valve in skull, an oblique skull should be included (see oblique skull below)
	70250	**Skull, Less than 4 Views**	AP & Lateral Skull	
	74010	**Abdomen**	AP & Lateral Abd	
RTSK		**Oblique of skull** (use code 70250)	**Study is done to visualize intracranial shunt on patient with hx of hydrocephalus.**	(Exam commonly ordered by Dr Aronin. For Dr Aronin's pt - Oblique skull to be done following ALL MRI Brain studies done on pt's with programmable shunt valves. Take oblique of the skull Shunt valve in center of film Clearly visualize the valve of the shunt so that the Radiologist can read the positioning indicator on the valve and relate this value to Dr. Aronin or ordering physician in the patient's imaging report
		Ferguson View		
		Ferguson View of Lumbar Spine	Lat, AP and AP with appropriate angle	This angle needed for AP projection will vary with each patient. Please refer to Feguson View memo of 3/07 at CR Tech Central
		Ferguson View for SI joints	AP with 30 - 35 degree cephalic angle	The patient is AP, the tube is angled 30-35 degrees cephalic & is centered to the midportion of the pelvis.
		View of sacro-iliac joints		

For studies not done routinely, such as sesmoid bones, views of the acetabulum, etc, the technologists should reference Merrill's Positioning Atlas for recommended projections that will best visualize the requested anatomy. These images should be checked by a radiologists before the patient leaves the ARA office.

ARA - ROUTINE PROTOCOLS

Revised 3/4/10

ADULT LEG LENGTH

Alpha code	Procedure code	Exam	Projections	Comments
CTLL		Bone length	This study is done by CT	See note below for protocol for performing this procedure using general radiography.

Leg – Length Procedure (RTBOLE) revised 5/28/09

A. ***The first choice for leg-length studies is a CT***. *This is faster, very accurate & the cost is comparable to plain films.*

All efforts should be made to perform this study with CT. The referring physician should be contacted to explain our normal protocol. The radiologist should be notified that the referring physician does not want the study done with CT.

If the study is to be performed upright, routine radiography, CR, should be performed.

If the decision is made to perform the study utilizing CR, the following protocol should be followed: (CPT: 77073)

B. Routine Radiography - CR

1. This should be done AP upright, utilizing the scoliosis cassette, grid and long ruler.
2. Distance will be 72" to accommodate cassette. Technique will need to be adjusted appropriately.
3. The patient should be gowned with clothing, shoes and socks removed.
4. Position the patient AP, with the **feet rotated internally 10 - 15 degrees**. Weight evenly on both feet.
5. **The long ruler will be held by the patient.** The ruler should be placed in front of the patient between the pt's feet. It's important that the ruler be straight and as close to the patient as possible.
6. Pelvis should be straight AP, with no rotation.
7. Central Ray is perpendicular to plate
8. **The hip joints, knees, ankle joints down to calcaneus must be visualized and centered properly to the plate.**
9. Mark image as 'standing' & AP
10. Use R/L markers at top and bottom of cassette. This will mark each IP within the soliosis cassette.

**** The top IP (imaging plate) in the long cassette is run first for leg length.

** **If the patient is too tall and the entire leg length will not fit on the cassette, see protocol below.**

Protocol to follow for Routine Radiography - Standing Leg Length Studies—

For - PATIENTS THAT ARE TOO TALL TO FIT ON LONG CASSETTE:

SEND PATIENT TO KYLE, MPT OR WP.

THOSE THREE SITES HAVE A LONGER IMAGE RECEPTOR TO ACCOMODATE TALLER PATIENTS.

ARA - ROUTINE PROTOCOLS			Rev. Re-organized order of pedi protocols and Tabs 5/20/10. Rev - added info - RTS11V - 5/13/10 Rev - Updated Soft Tissue Neck #2, to not include the sinus x-ray with the Soft Tissue Neck. 2/13/13 Rev - Updated the anatomy to be seen for both soft tissue necks per Dr. Hussaini. Also SID on Soft Tissue Neck per ACC. 10/15
ARA PEDIATRIC PROTOCOLS			
Alpha code	**Exam**	**Projections**	**Comments**
		Head & Neck	
RTSK4V	**Skull Complete**	**AP, Towne, Both Lateral**	**If the child has or is getting evaluated for Metopic Suture, an additional image is required:** **- Place the patient on the table in a supine position.** **- Angle the x-ray tube 30 degrees cephalad (may need more or less angulation depending on the patient anatomy) entering the acanthion.** **- Extend the patients head so that the mentomeatal line (MML) is perpendicular to the table (or OML 37 degrees to table).** **- We are looking for a tangential image of the forehead. Most patients will have a triangular shaped forehead, it will appear as such on the x-ray. (Tip: This position is similar to doing a sunrise knee position, except this is for the forehead).**
RTSK	**Oblique of skull** (use code 70250)	**Study is done to visualize intracranial shunt on patient with hx of hydrocephalus.**	(Exam commonly ordered by Dr Aronin. For Dr Aronin's pt - Oblique skull to be done following ALL MRI Brain studies done on pt's with programmable shunt valves. **OBLIQUE SKULL** **Shunt valve in center of film** Clearly visualize the valve of the shunt so that the Radiologist can read the positioning indicator on the valve and relate this value to Dr. Aronin or ordering physician in the patient's imaging report
RTFAC	**Facial Bones**	**Upright Waters, Unexaggerated Waters, PA Caldwell, Lateral, SMV**	**Unexaggerated waters - pertrous ridges will appear in mid max sinus.** **SMV - exaggerated to side of symptoms to visualize zygoma**
RTSI1V	**Sinus, 1-2 view**	**Caldwell, Waters**** **If only one projection is ordered, do Waters projection**	**Age 0 - 14 years (Upright unless patient unable to cooperate)** **** Important - To obtain a properly positioned Water's image on Children under 5 years. The petrous pyramids should be aligned with the hard palate. To successfully obtain this, the degree of the posterior head tilt should not be more than 10-degrees. This will align the petrous ridges with the hard palate. (see routine memo & image on SharePoint - Pedi Sinus Waters)**
RTSI3V	**Sinus 3 view**	**Caldwell, OM Waters & Lateral**	**Age 15 years and over**
RTNAS	**Nasal Bones**	**Waters, Both Laterals**	
RTNECK (#1) - for Respiratory Symptoms	**Neck, Soft Tissue AP (40 SID) & LAT (72 SID)**	**Pedi Airway Protocol - AP & LAT - for Respiratory Symptoms (not adenoids)** **If the referral states the exam is for anything other than adenoid enlargement, both AP and Lateral should be done. This includes symptoms of croup, stridor, foreign body, hemangioma, etc.** **AP VIEW - include from the superimposed mandible & base of skull to the lung apices and superior mediastinum. 40 SID.** **LATERAL VIEW - ANATOMY TO INCLUDE: from the nasal pharynx/sphenoid sinus to lung apex. 72 SID.** **1. If the child is old enough to sit upright, the images need to be done upright, with the patient in true lateral position. | 2. Extend the neck up and expose when the child takes a breath in. | 3. If the child is not old enough to sit up, the exam can be done supine, ONLY if the neck is extended back with a neck roll, or off a stack of towels.** **Revised 10/08/15**
RTNECK (#2)- for Adenoids	**Neck, Soft Tissue LAT (72 SID)**	**Pedi Adenoids Protocol - LAT - for Adenoids ONLY (only lateral view needed)** **LATERAL VIEW- ANATOMY TO BE SEEN: from nasal pharynx/sphenoid sinus to upper neck area. Only upper neck area (center at C-1), exclude the lower neck and thyroid. 72 SID.** **1. If the child is old enough to sit upright, the images need to be done upright. | 2. It is very important that the head is in a true lateral position with the chin extended. | 3. The exposure should be made when the child takes a breath in.** **Revised 10/08/2015**	

ARA - ROUTINE PROTOCOLS

6/14/12 - Rib Protocol Added

PEDIATRIC CHEST, RIBS AND ABDOMEN

Alpha Code	dure code	Exam	Projections	Comments
RTCH2V	71046	**Chest - 2 View**	PA/AP & Lat Chest	Upright (see note below)
If the patient is unable to stand, sit or is uncooperative, an AP and Lateral supine chest may be taken.				**You may also use the Pigg-O-STAT.**
RTCH1V	71045	**Forced Expiration Chest X-Ray - for foreign body. This study is done only when ordered specifically by the referring physician or a radiologist.**	**PT Position: AP Supine**	Assistant uses lead-gloved hand balled into a fist to gently press just below the diaphragm in an upward motion (same location as for Heimlich maneuver) until patient breathes out, at this time, technologist makes the x-ray exposure.
RTRIB3**	71110	**Ribs - Bilateral 3 View**	AP/PA Upper Bilateral Ribs (full Inspiration), AP Bilateral Lower Ribs (full expiration), Oblique Upper Right Ribs (full inspiration), Oblique Upper Left Ribs (full inspiration), Oblique Right Lower Ribs (full expiration), Oblique Left Lower Ribs (full expiration).	**Upper Ribs - Full Inspiration** **Lower Ribs - Full Expiration**
			**** RTRIB3 done only when separate chest x-ray was ordered & performed also.**	
RTRIB4	71111	Ribs - Bilateral 4 View	**PA Chest**,AP/PA Upper Bilateral Ribs (full Inspiration), AP Bilateral Lower Ribs (full expiration), Oblique Upper Right Ribs (full inspiration), Oblique Upper Left Ribs (full inspiration), Oblique Right Lower Ribs (full expiration), Oblique Left Lower Ribs (full expiration).	**PA Chest - 72", High KVp** **Projections for Rib Detail 40" / Low KVP (65kvp range)**
RTRIU2**	71100	**Ribs - Unilat 2 View**	AP/PA Upper Ribs of Affected Side, Oblique Upper Ribs of Affected Side, AP lower ribs of Affected Side, Oblique Lower Ribs of Affected Side.	**Upper Ribs - Full Inspiration** **Lower Ribs - Full Expiration** **NOTE: If PT is able to communicate and states the pain is in the lower rib area, a lower oblique should be performed.**
			**** RTRIU2 done only when separate Chest X-Ray Ordered & Performed also.**	
RTRIU3	71101	**Ribs - Unilateral 3 View**	**PA Chest**, AP/PA Upper Ribs of Affected Side, Oblique Upper Ribs of Affected Side, AP Lower Ribs, Oblique Lower Ribs	**PA Chest - 72" High KVp / Ribs Projections done at 40"** **Upper Ribs - Inspiration / Lower Ribs - Expiration** **NOTE: If PT is able to communicate and states the pain is in the lower rib area, a lower oblique should be performed.**
RTAB2V	74010	**Abdomen 2 View**	**Supine:** To include the Symphysis Pubis. **Upright or Left Lateral Decubitus (Left side down):** To include the Diaphragm and at least the upper pelvic area (send image to PACS in the same position the KUB is sent).	**PT ages 0-7yrs: Supine and Left Lateral Decubitus (Left Side Down) is to be done instead of an upright. PT ages 8yrs and older: Supine and Upright abdomen do be done.**
RTFOB		**Study for Foreign Body**	AP supine from nose (& nasopharnx) to rectum.	If there is a foreign body in the neck or chest, a lateral
			IVP Patients 0 - 16 yrs	
IVTOMO	74400	**IVP (tomograms not routinely done on pedi pts)**	KUB scout film, Have film checked by radiologists. Radiologist will decide and give appropriate protocol to performing technologist. (With Pedi Patients -	

ARA - ROUTINE PROTOCOLS

ARA PEDIATRIC PROTOCOLS

Shunt Series

RTSHUN		**PA (or AP) & Lat Chest AP (or PA) & Lat Skull AP & Lat Abd.**	*** Please review the lateral image, if the shunt has a programable valve, perform an oblique skull (see oblique skull below). * If the patient is sent by Dr Aronin's, an oblique skull should be included (see oblique skull below). Please indicate with a marker on the image if the skull/chest done AP or PA**	
RTSK is not a shunt series but a single projection of the skull. Please read directions below carefully. (this protocol is also listed on Pedi Head & Neck page)				
RTSK		**Oblique of skull (use code 70250)**	**Study is done to visualize intracranial shunt on patient with hx of hydrocephalus.**	(Exam commonly ordered by Dr Aronin. For Dr Aronin's pt - Oblique skull to be done following ALL MRI Brain studies done on pt's with programmable shunt valves. **Take oblique of the skull Shunt valve in center of film Clearly visualize the valve of the shunt so that the Radiologist can read the positioning indicator on the valve and relate this value to Dr. Aronin or ordering physician in the patient's imaging report**

ARA - ROUTINE PROTOCOLS

Rev 5/13/10 - added info RTS11V, Rev 6/15/12 - 3V C-Spine Added
1/5/16 - updated CPT codes for scoli exams per 2016 changes
5/27/2016 Changed L-Sp to standing if patient able to cooperate.
4/20/18 - Per Dr. Lonergan, do not use blocks on Pedi Scoli exams.

PEDIATRIC SPINE

Alpha code	Procedure code	Exam	Projections	Comments
RTCS2V	72040	C-Sp, AP & Lat	AP & Lateral (can be crosstable)	Age 0 - 4 years of age (OM not necessary)
**RTCS3V	72040	C-Spine - 3 Views for Down Syndrome PT OR C1-2 Instability	Lateral, Lateral Flexion, Lateral Extension	Down's Syndrome PT OR if referral states C1-2 Instability (atlanoaxial or atlanto-occipital instability) Always do lateral, flexion and extension C-Spine. The flexion and extension projections need to be done upright and without manual positioning (without forcing head into extension or flexion). The pt's head may be guided downward for the flexion view, but the head can not be held at the time of the exposure. If the patient is young, uncooperative and these projections could not be obtained, please note this fact in tech notes for radiologists. Rev: 1/23/08 ** SEE BELOW FOR MORE INSTRUCTIONS
** If the order also includes trauma, neck pain or any other indication (besides Down Syndrome and C1-2 Instability) then also perform the appropriate age-specific protocol for pedi's				
RTCS3V	72040	C-Spine - 3 View	AP, Odontoid, Lateral	Age 5 years and older - if referral states 3 view and the patient does not have Down Syndrome or C1-2 instability
RTCS5V	72050	C-Spine Complete	AP, Odontoid, Both AP Obliques, Lateral	Age 5 years and older
RTTS2V	72070	T-Sp - AP & Lat	AP & Lateral	
RTLS2V	72100	L-Sp - AP & LAT	AP & Lateral	Age under 10 years- Perform images standing if possible (Pt is capable of standing still while erect)
RTLS4V	72110	L-SP Complete **	AP, Both Obliques, Lateral	rev 5/07 **Age 10 yrs to 17 yrs. Low back pain and/or trauma - 4 view study. For other symptoms/reasons/history - AP & Lat Lumbar only Rev 5/27/16- All Views should be performed standing if possible.
RTSACO	72220	Sacrum & Coccyx	AP & Lateral Sacrum, AP & Lateral Coccyx	AP sacrum - 15 degrees cephala / AP Coccyx - 10 degree caudad / On Lateral - use lead strip to eliminate scatter posteriorly.
RTSC1V	72081	* Scoliosis Survey	PA Spine for Scoliosis Screening - Standing	Pt done PA - to include entire C-Spine and hip joint (shoes off). If a patient is too tall to include the entire C-Spine and Hip Joint, it is acceptable to include C-4 to entire hip joint (shoes off). (Beginning Feb 2010, a 1" calibration marker is to be taped to pt's back, 2" from spine at level of umbilicus on all AP/ PA projections)
RTSC2V	72082	* Scoliosis Erect T-L	PA & Lateral Scoliosis Screening - Standing (PA & Lat - for PTS with history of kyphosis or lordosis)	Pt is to be done PA - to include entire C-Spine to entire hip joint (shoes off). If a patient is too tall to include entire C-Spine, it is acceptable to include C-4 - entire hip joint (shoes off). (1" calibration marker to be used on PA - see above) PA and Lateral. For lateral projection - PT will be standing lateral, shoulders should be parallel, with humeri bent 90 degrees from body. No leaning or slouching.
RTSC4V	72082	* Scoliosis Erect T-L	PA standing, AP supine, Lat standing	The supine projection is performed very seldom. The only routine supine scoliosis is performed for babies younger than 1 year. Prior to performing a supine projection on any pt other than an baby, the tech should verify the order on the referral or in IDX scheduling notes. The tech may verify with the radiologist or referring physician if necessary. The supine should be done with the pt supine on the table, use 14 X 17 (two plates - if necessary to include the entire spine from C-2 to hips) Use the maximum tube distance possible. Shielding can be used for the supine projection.

ARA - ROUTINE PROTOCOLS

8/9/10 - Rickets alpha codes
3/15/13 Bilateral Clavicles Added
8/04/14 - Upper Extrem Infant - Pedi Section changed protocol to image each part individually.

PEDIATRIC UPPER EXTREMITY

Alpha code	Exam	Projections	Comments
		Upper Extremities	
RTSH	Shoulder Complete, 3 view	Internal rotation, external rotation Y-View for injury only	
RTCLAV	Clavicle 2 view	AP, AP Axial	For ages 0-12y/o, do both clavicles, simultaneously on one film. AP Axial - 15 degree cephalic angle
RTCLAVBP	Clavicle Bilateral 2 view	AP, AP Axial	Only to be charged if "Bilateral" is stated in the order. CPT codes 73000/LT and 73000/RT should be added.
RTHUM	Humerus 2 view	AP and Lateral	
RTEL3V	Elbow 3 view	AP, Lat and External Oblique	
RTFOR	Forearm 2 view	AP & Lat	
RTUPEX	Upper Extremity Infant **	AP Humerus, AP Forearm, Lateral Humerus, Lateral Forearm	** Infant = Less than 365 days | - X-Ray the humerus and forearm separately for each view. (do not x-ray entire arm on one image). - Do not charge for each exam individually, use RTUPEX for all infants.
RTWR3V	Wrist 3 view	AP, Obl and Lateral	
RTHA3V	Hand 3 view	PA, Obl and Lateral	
RTHA3VBIRA	Hand - 3 view bil for arthritis	PA, Norgaad or Ball Catchers Obliq, lat CPT code 73130, Hand RT & 73130, Hand LT	Norgaad or Ball Catchers hand is supinated to an angle of 35 degrees. (ref: memo in SharePoint) Lateral - fingers fanned keeping fingers parallel to plate to visulaize interphalangeal joints.
		Misc Studies - Pedi Upper - Extremities	
RTBOAG	**Bone Age 2 Years and Older:** PA Left Hand & Wrist **Bone Age Under 2 years:** 1. AP LEFT humerus that includes the distal 1/2 of the clavicle, shoulder and AP elbow 2. PA LEFT hand and wrist 3. AP LEFT knee 4. Lateral LEFT knee 5. AP LEFT foot 6. AP LEFT ankle		
Rickets Study			
RTWRKNRKT	PA Bil Wrist	PA Bil Wrist on one plate	as of 8/2010 - there is one alpha code - RTWRKNRKT
	AP Bil Knee	AP Bil Knees on one plate	Techs will add the CTP codes: 73100/RT/52, 73100/LT/52 , 73560/RT & 73560/LT

For studies of entire extremities on patients that are more than 365 days old, each long bone should be imaged individiually, such as AP & lat humerus, AP & lat forearm, AP &

lat Femur, etc. Hands and feet are included if history indicates or ordered. These images should be checked by a radiologist to see if additional imaging of the joints is needed.

ARA - ROUTINE PROTOCOLS

8/9/10 - Blounts alpha code 11/12/12 - Pelvis 1V added

8/4/14 - Lower Extrem Infant - Pedi Section changed protocol to image each part individually.

1/5/16 - Updated CPT codes for Femur, Hip and Bilat Hips due to 2016 CPT changes.

1/8/16 - Updated Bilat Hip Exam code from RTHI5V to RTHIBIL.

3/22/16 - Updated RTHIPE to RTHIBILP for all pedi patients, no longer infant code.

Also updated the RTHIBIL instructions. 5/27/2016 Added Knee 2V and changed Knee 3V to remove Obl and add Sunrise

1/13/17 - Added RTPECP1V

PEDIATRIC LOWER EXTREMITY

Alpha code	Procedure code	Exam	Projections	Comments
			Lower Extremities	
RTAN3V	73610	Ankle 3 view	AP, Obl and Lateral	For the oblique, dorsiflex the foot, rotate the foot and entire leg 45-degrees medially
RTFO3V	73630	Foot 3 view	AP, Obl and Lateral	AP and Lateral projection should be done standing, unless patient is unable to stand, follow directions or the clinic has equipment limitations. The oblique projection will be done on the table with the patient supine. No additional, non-wt bearing projections are necessary unless they are specifically ordered by the referring physician. Be sure to mark images as weight-bearing. Do not perform standing if the order states not to do weight-bearing.
RTFEMU	73552	Femur 2 view	AP and Lateral	
RTKN2V	73560	Knee 2 View	AP & Lateral	Age 6 and younger
RTKN3V	73562	Knee 3 view	AP, Lateral and Sunrise	Age 7 and older (For arthritis and rheumatologic conditions 2V okay if ordered)
RTTIB	73590	Tibia 2 view	AP and Lateral	
RTHIBILP	73521	Pedi Bilateral Hips	AP Pelvis and Frog Pelvis	Children 0-18 yrs. This exam code is for AP Pelvis and Frog Pelvis (Bilateral Hip Views). If the pedi patient does not fit on one image for the Frog Pelvis, change code to RTHIBIL and perform separately.
RTHI2V	73502	Hip Joint, 2 Views	AP Pelvis and Frog Pelvis - 0-16 yrs AP Pelvis and Unilateral Hip - 17+ yrs	Children up to 16 y/o. Use shielding on frog-leg views. On frog leg view, both hips on same film.
RTPE1V	72170	Pelvis, 1 View	AP Pelvis	If there is "hip" pain, always do an AP Pelvis and a Frogleg Pelvis. It is best to call the referrying physician to have them change the order to Hip 2V. If not possible than just charge for what is ordered (Pelvis 1V) but still perform the 2 view (per protocol). If there is no "hip" complaint, just perform as ordered.
RTPECP1V	72170	Pelvis, AP Only for CP Hip Surveillance	AP Pelvis ONLY	Only do AP Pelvis for patients sent in for CP Hip Surveillance. Drs. Wright, Ong, Kaufman and Ellington). See Memo for more information.
RTPE2V	72170	Pelvis, 2 View	AP Pelvis and Special View	Referrying pysician may give special instructions on the second view. May be AP Axial view.
RTLE2V	73592	Lower Extremity Infant**	AP Pelvis, AP Femur, AP Tib/Fib, Lateral Femur and Lateral Tib/Fib	** Infant - Less than 365 days | X-Ray the femur and tib/fib separately for each view (do not x-ray entire leg on one image) | Do not charge for each exam individually, use RTLE2V for all Infants.

For studies of entire extremities on patients that are 365 days or older, each long bone should be imaged and charged individually, such as AP & Lateral humerus, AP & Lateral forearm, AP & Lateral femur, etc. Hands and feet are included if the history indicates or ordered. These images should be checked by a radiologist to see if additional imaging of the joints is needed.

			Misc Studies - Pedi Lower - Extremities	
RTLEBIBLNT		Blounts Syndrome or DX of: Bowlegs , Genu Varum, Tibia Vara or Knock Knees, Genu Valgum	To be done on scoliosis cassette - 3/26/09	(usually toddlers but may be followed through adolescence)

AP lower extremities - standing - both legs on one plate. Long, scoliosis cassette with stitching should be used. (If Infant or toddler, a 14 X 17 may be used, if all anatomy can be included on this one plate)AP standing, w/feet together, bilateral on one plate, ankles, tibia, knees and entire femurs to include hip joints. (CPT: 77073)

ARA - ROUTINE PROTOCOLS

PEDIATRIC BONE SURVEYS

5/8/17 - Removed Metastatic Bone Survey per Dr. Hussaini, it does not have enough images.
6/8/18 - 6/8/18 - Added Long Bone Study to R/O Syphilis per Dr. Hussaini

Alpha code	Procedure code	Exam	Projections	Comments
Bone Surveys - Pediatric				
Metastatic Bone Survey				
RTOSIN	**77076**	**Skeletal Survey (Infant - less than 365 days) rev/ 2/13**	**1. AP & Lat Skull** **2. AP Chest supine include shoulders/ if trauma or abuse do obl. bil-ribs also** **3. AP Abdomen include Pelvis (remove diaper) If child is too large, do a separate Pelvis** **4. Lat Chest supine include C-Sp,** **5. Lateral L-Sp include sacrum and coccyx** **6. AP Humerus bil** **7. AP Forearm bil** **8. PA Hands bil** **9. AP Femurs bilat** **10. AP Tib/fib bilat./ if trauma or abuse do lateral tibia also** **11. PA Bilat feet**	**Patient must be less than 365 days old** **Perform additional views in red if exam is for trauma/abuse**
RTOSIN	**77076**	**Skeletal Long Bone Survey to Rule Out Syphilis (Infant - less than 365 days)**	**1. Bilateral Infant Arms - Shoulder to hand on one film** **2. Bilateral Infant Legs - Hip to Ankle on one film** **3. Bilateral PA Hands - single view** **4. Bilateral AP Feet - single view**	
RTOSSU	**77075**	**Skeletal Survey (pt 365 days or older) (same code as metastatic survey but different protocol based on pt hx)**	**1. AP & Lat Skull** **2. AP Chest supine include shoulders/if trauma or abuse do obl. bil ribs also** **3. AP Abdomen include Pelvis (remove diaper) If child is too large, do a separate Pelvis** **4. Lat Chest supine include C-Sp,** **5. Lateral L-Sp include sacrum and coccyx** **6. AP Humerus bil** **7. AP Forearm bil** **8. PA Hands bil** **9. AP Femurs bilat** **10. AP Tib/fib bilat. / if trauma or abuse do lateral tibia also** **11. PA Bilat feet**	**Patient 365 or older** **Perform additional views in red if exam is for trauma/abuse**
RTOSSU	**77075**	**Skeletal Long Bone Survey to Rule Out Syphilis (PT 365 days or older)**	**1. Bilateral AP Humerus** **2. Bilateral AP Forearm** **3. Bilateral AP Femurs** **4. Bilateral AP Tib/Fib** **5. Bilateral PA Hands** **6. Bilateral AP Feet**	**Single views only. Image Right and Left side separately, not on the same image.**

ARA - ROUTINE PROTOCOLS

Revised 3/4/2010, Revised 3/18/14

PEDIATRIC BONE LENGTH

Alpha code	Exam	Projections	Comments
CTLL	CT Bone Length	This study is done by CT	See note below for protocol for performing this procedure using general radiography. **CT is not to be done on PT's ages 2 yrs or younger.**

PT Ages 2 Years or Younger: (Leg Length X-Ray only, Not CT)	**- All patients ages 2 yrs or younger are to be done in x-ray, not CT.** **- If a leg length CT is ordered for a patient 2 yrs or younger, the referring physician should be called and asked if we can change the order to an x-ray instead of a CT (per our protocol).** **- If the patient cannot stand (due to age or disability), the x-ray is to be done supine with the legs straight on the image to include the lead ruler.**
PT Ages 3 Years or Older : (CT Preferred)	**- Please follow the protocol below.**

- **The first choice for leg-length studies on patients ages 3 years or older is a CT. This is faster, accurate and the cost is comparable to plain film. All efforts should be made to perform this study with CT.**
- **The referring physician should be contacted to explain our normal protocol. The radiologist should be notified and informed if the referring physician does not want the study done with CT (make sure to include it in your tech notes).**
- **If the referring physician ordered the exam upright, the study should be performed in routine radiography.**

RTBOLE	X-Ray Leg Length	AP (include hip joints to ankle joints)	See procedures steps below.

PROCEDURE STEPS (Average patient, fits on one image (cassette):

1. This should be done AP upright, utilizing the scoliosis cassetee, grid and long ruler.
2. Distance will be 72" to accommodate cassettee. Technique will need to be adjusted appropriately.
3. The patient should be gowned. The clothing, shoes and socks need to be removed.
4. Position the patient AP, with the **feet rotated internally 10-15 degrees**. Weight should be evenly on both feet.
5. **The long ruler will be held by the patient. The ruler should be placed in front of the patient between the patients feet. It is important the ruler be straight and as close to the patient as possible.**
6. The pelvis should be straight AP, with no rotation.
7. The central ray should be perpendicular to plate.
8. **The hip , knee and ankle joints down to the calcaneus must be visualized and centered properly to the plate.**
9. Mark image as 'Standing' and 'AP'.
10. Use R/L markers on top and bottom cassette. This will mark each IP with the long cassette.

****Run the top IP (Imaging Plate) in the long cassette first for the leg length.
****If the patient is too tall for the entire leg length to fit on the scoli cassette, see protocol below.

*** If the patient can not stand due to disability, the image should be done supine with legs straight on the image.**

Protocol to follow for Routine Radiography - Standing Leg Length Studies—

For - PATIENTS THAT ARE TOO TALL TO FIT ON LONG CASSETTE:

SEND PATIENT TO KYLE, MPT OR WP.

THOSE THREE SITES HAVE A LONGER IMAGE RECEPTOR TO ACCOMODATE TALLER PATIENTS.

ARA - ROUTINE PROTOCOLS

Revised 8/9/10 - Rickets & Blounts alpha codes
4/18/14 - RTFOB, turn PT head to side.

PEDIATRIC MISCELLANEOUS

RTBOAG	76020	**Bone Age 2 Years and Older** PA Left Hand & wrist **Bone Age Under 2 years** 1. AP LEFT humerus that includes the distal 1/2 of the clavicle, shoulder and AP elbow 2. PA LEFT hand and wrist 3. AP LEFT knee 4. Lateral LEFT knee 5. AP LEFT foot 6. AP LEFT ankle		
RTFOB	76010	Nose to Rectum X-Ray	**Study for Foreign Body:** - Place the patient in the supine position. - Turn the patients head to the R or L (as far as they can turn their head without moving the shoulders from the supine (AP) position). - The Chest, Abdomen and Pelvis should be in a true AP position. ***** If there is a foreign body in the neck or chest, a lateral of the neck and a lateral of the chest should be done also. ***** The images should be checked by a radiologist before the patient is dismissed.	
Rickets Study				
RTWRKNRKT	73100	PA Bil Wrist	PA Bil Wrist on one plate	Techs will need to manually add the following CPT codes for this exam:
	73560	AP Bil Knee	AP Bil Knees on one plate	73100/RT/52 73100/LT/52 73560/RT 73560/LT
Blounts Syndrome Study				
RTLEBIBLNT				To be done on scoliosis cassette - 3/26/09 (usually toddlers but may be followed through adolescence)
		AP lower extremities - standing - both legs on one plate. Long, scoliosis cassette with stitching should be used. (If Infant or toddler, a 14 X 17 may be used, if all anatomy can be included on this one plate) AP standing, w/feet together, bilateral on one plate, ankles, tibia, knees and entire femurs to include hip joints. (CPT: 77073)		
Shunt Series				
RTSHUN		PA (or AP) & Lat Chest		
		AP (or PA) & Lat Skull	* If Dr Aronin's patient or if patient has shunt valve in skull, an oblique skull should be included (see oblique skull below)	
		AP & Lat Abd.	Please indicate with marker on image if skull / chest done AP or PA	
RTSK		Study is done to visualize intracranial shunt on patient with hx of hydrocephalus.		(Exam commonly ordered by Dr Aronin. For Dr Aronin's pt - Oblique skull to be done following ALL MRI Brain studies done on pt's with programmable shunt valves. **Take oblique of the skull** **Shunt valve in center of film** **Clearly visualize the valve of the shunt so that the Radiologist can read the positioning indicator on the valve and relate this value to Dr. Aronin or ordering physician in the patient's imaging report**