

Estimated Effective Doses from Radiographs and CT Scans

RADIOGRAPHS

Radiograph Description	mrem	mSv	Ref.
Abdomen (AP)	70	0.7	1
Barium Enema (10 images, 127 secs - fluoro)	700	7	1
Barium Follow-Up (4 images, 78 secs - fluoro)	300	3	1
Barium Meal (11 images, 121 secs - fluoro)	300	3	1
Barium Swallow (24 images, 106 secs - fluoro)	150	1.5	1
Chest (LAT)	4	0.04	1
Chest (PA)	2	0.02	1
Extremity - Ankle	0.072	0.00072	2
Extremity - Elbow	0.069	0.00069	2
Extremity - Forearm	0.11	0.0011	2
Extremity - Hand	0.017	0.00017	2
Extremity - Knee	0.12	0.0012	2
Extremity - Tibia/Fibula	0.27	0.0027	2
Intravenous Pyelogram (kidneys, 6 films)	250	2.5	1
Lumbar Spine (AP)	70	0.7	1
Lumbar Spine (LAT)	30	0.3	1
Lumbar Spine (Lumbosacral joint)	30	0.3	1
Mammogram (CC view)	9.8	0.098	3
Mammogram (OBL view)	11.15	0.1115	3
Pelvis (AP)	70	0.7	1
Skull (LAT)	1	0.01	1
Skull (PA or AP)	3	0.03	1
Thoracic Spine (AP)	40	0.4	1
Thoracic Spine (LAT)	30	0.3	1

Dental Imaging (Ref. 5)

Description	mrem ¹	mSv ¹
FMX ² PSP ³ or F-speed, rect collim	3.49	0.0349
FMX PSP or F-speed, round cone	17.07	0.1707
FMX D-Speed, round cone	38.8	0.388
BW ⁴ PSP or F-speed, rect. Collim.	0.5	0.005
Panoramic Orthophos XG (CCD ⁵)	1.42	0.0142
Panoramic ProMax (CCD)	2.43	0.0243
PA Cephalometric (PSP)	0.51	0.0051
LAT Cephalometric (PSP)	0.56	0.0056

¹Eff. Dose using ICRP 103 weighting factors

²Full mouth series (18 images)

³Photo-stimulable phosphor

⁴Bitewing exam (4 images)

⁵Charge-coupled device

CT SCANS (Ref. 4 except as noted)

CT Scan Description	Axial		Helical	
	mrem	mSv	mrem	mSv
Abdomen	1200	12	910	9.1
Abdomen/pelvis	2150	21.5	1370	13.7
Ankle & Foot (unilateral) ⁶	No Data	No Data	7	0.07
Appendix	620	6.2	660	6.6
Bone Mineral Densitometry	30	0.3	590	5.9
Chest	1320	13.2	930	9.3
Chest - High Resolution	150	1.5	240	2.4
Chest/Abdomen/Pelvis	3510	35.1	1790	17.9
Elbows (arms only above head) ⁶	No Data	No Data	14	0.14
Elbows (arms at sides) ⁶	No Data	No Data	835	8.35
Head (brain+posterior fossa)	210	2.1	220	2.2
Head (brain region)	120	1.2	160	1.6
Head (posterior fossa region)	70	0.7	60	0.6
Hips ⁶	No Data	No Data	309	3.09
Kidney	1050	10.5	880	8.8
Knees ⁶	No Data	No Data	16	0.16
Liver	930	9.3	790	7.9
Neck (Soft Tissue)	360	3.6	480	4.8
Pancreas	760	7.6	890	8.9
Pelvis	880	8.8	620	6.2
Shoulder	120	1.2	No Data	No Data
Sinus (Simple Exam)	90	0.9	70	0.7
Skull	120	1.2	110	1.1
Spine (Cervical)	470	4.7	650	6.5
Spine (Lumbosacral)	590	5.9	800	8
Spine (Thoracic)	700	7	900	9
Urography	No Data	No Data	720	7.2
Wrists & Hands ⁶	No Data	No Data	0.03	0.0003

References:

1. *British Journal of Radiology*, 70 (1997), 437-439
2. *Health Physics*, 75(5):492-499; 1998
3. *British Journal of Radiology*, 78 (2005), 207-218
4. *CRCPD, Publication E-07-2*, Tabulation and Graphical Summary of 2000 Survey of Computed Tomograph, (NEXT), August, 2007
5. *J Am Dent Assoc* 2008; 139; 1237-1243
6. *Journal of Bone & Joint Surgery*, Vol. 91-A, No. 8, August, 2009