

Table 1

Medical Patient Exposure Guide

Projection	Patient Thickness in centimeters (cm.)	Grid	SID	200 Speed	400 Speed
A.P. Abdomen	23	Yes	40"	240- 630	150- 400
A.P. Lumbar Spine	23	Yes	40"	330 - 750	210 – 475
A.P. Full Spine	23	Yes	72"	260	145
A.P. Cervical Spine	13	Yes	40"	135	95
Lat. Skull	15	Yes	40"	145	70
P.A. Chest	23	No	72"	8 - 26	5 – 13
P.A. Chest	23	Yes	72"	13 – 28	8 – 18

Guidance regarding Table 1:

- (1) The information in Table 1 is based upon the CRCPD Publication E-03-2 "A Patient Exposure and Dose Guide - 2003".
- (2) "SID" means source to image receptor distance
- (3) All measurements were made in air without a phantom
- (4) Generally, a P.A. Chest using a grid, is done at high kVp (i.e. 120 kVp), whereas the same examination done with a non-grid is most often done at lower kVp (i.e. 75)
- (5) If a facility uses a wedge type filter, the exposure should be measured in the center of the x-ray field
- (6) ESE's are not necessarily proportional to imaging systems speed differences.

Table 2

DENTAL CEPHALOMETRIC PATIENT EXPOSURE GUIDE

Maximum Entrance Skin Exposures (ESE) in mR

Projection	Part Thickness	Grid	SID	ESE
Lat. Skull	15 cm	No	66"	7-23

Guidance regarding Table 2:

- (1) The information in the above table is based upon data from CRCPD Publication E-03-2 "Patient Exposure and Dose Guide- 2003"
- (2) The median exposure is 15 mR, the 3rd quartile exposure is 23 mR and the 1st quartile exposure was computed to be 7 mR
- (3) 1999 NEXT data typical kVp range for this examination was 62 to 90 while the median kVp was 75.

Table 3

ADULT DENTAL INTRAORAL BITEWING

Entrance Skin Exposure (ESE) Ranges in mR

kVp	"D" Speed Film	"E" Speed Film	"F" Speed Film
50	425 - 575	220 - 320	185 - 275
55	350 - 500	190 - 270	160 - 230
60	310 - 440	165 - 230	140 - 195
65	270 - 400	140 - 200	115 - 170
70	240 - 350	120 - 170	100 - 145
75	170 - 260	100 - 140	85 - 120
80	150 - 230	90 - 120	75 - 105
85	130 - 200	80 - 105	70 - 90
90	120 - 180	70 - 90	60 - 80
95	110 - 160	60 - 80	50 - 70
100	100 - 140	50 - 70	40 - 60

Guidance regarding Table 3:

- (1) Exposures indicated in table 3 are free-in-air without backscatter
- (2) When the indicated kVp is [often] significantly [different] lower [from] than the actual kVp [.] , such a difference could result in the use of an exposure that exceeds the maximum ESE allowed
- (3) "E-F" speed film is considered as "F" speed only when processed in an automatic roller type film processor
- (4) "E-F" speed film is considered as "E" speed when processed in manual tanks or automatic film processors without rollers

TABLE 4**HALF VALUE LAYER (HVL) CRITERIA**

Design Operating Range	Measured Potential (kVp)	Half Value Layer In mm of Aluminum	
		Dental Intra-Oral Manufactured before August 1, 1974 and On or After December 1, 1980	All Other Diagnostic X-ray Systems
Below 51	30	N/A	0.3
	40	N/A	0.4
	50	1.5	0.5
51 to 70	51	1.5	1.2
	60	1.5	1.3
	70	1.5	1.5
Above 70	71	2.1	2.1
	80	2.3	2.3
	90	2.5	2.5
	100	2.7	2.7
	110	3.0	3.0
	120	3.2	3.2
	130	3.5	3.5
	140	3.8	3.8
	150	4.1	4.1

Note: The above HVL criteria will be considered to have been met if it can be demonstrated that the aluminum equivalent of the total filtration in the primary beam is not less than that shown in Table 5.

TABLE 5

FILTRATION REQUIRED versus OPERATING VOLTAGE

Total Filtration: Inherent + Added (in mm Al Equivalent)		
Operating Voltage (kVp)	Dental X-ray Systems	Other X-ray Systems
Below 50		0.5
50-70	1.5	1.5
> 70	2.5	2.5

TABLE 6**Time / Temperature Film Processing Chart**

Thermometer Readings in Degrees		Minimum Developing Time
Centigrade	Fahrenheit	Minutes
27	80	2
	79	2
	78	2.5
	77	2.5
24	76	3
	75	3
	74	3.5
	73	3.5
22	72	4
	71	4
	70	4.5
	69	4.5
20	68	5
	67	5.5
	66	5.5
	65	6
18	64	6.5
	63	7
	62	8
	61	8.5
16	60	9.5

Table 7

Frequency of Mammography QA Tests

Frequency of the Test	Name of Test
Daily	Processor Quality Control
Weekly	Phantom Image
Quarterly	Fixer Retention
	Repeat Analysis
Semi-Annual	Darkroom Fog
	Screen/Film Contact
	Compression
Annual	Medical Physicist Survey to include at a minimum;
	AEC Performance
	kVp Accuracy and Reproducibility
	Evaluation of System Resolution
	Beam Quality (Half Value Layer) Assessment
	Breast Entrance Exposure
	Average Glandular Dose
	Radiation Output Rate
	X-ray to Light Field Alignment
	X-ray to Image Receptor alignment
	Compression Paddle Extension at Chest Wall
	System Artifacts
	Uniformity of Screen Speed
	Unit Assembly Evaluation
	Decompression
View box luminance and room Luminance	
Review of Technologist's QC Records	