

the Average pelvic x-ray=466 mrs, the average cervical x-ray= 62mrs, the average flouro 14- 30 seconds at 1/2 ma= 7-15mrs. Hope this clears up the risk, If you compare it to gathering the same info through taking x-rays add up the numbers 4 cervical x-rays times 62= etc. still not even close to a catscan, but flouro is far superior in terms of total exposure, in addition it is how long you are in a particular region that really matters, so a typical cervical flouro is 6-10 seconds, radiation exposure per region nothing comes close to flouroscopy, and the new ones are 40% less (flat panel) ready for this? a 1 cat scan is 1-3 RADS.

### RADIOGRAPHIC/FLUOROSCOPIC OUTPUT MEASUREMENT

Date: March 11, 1995

Location: Office of Dr. Anthony Pugliese  
4634 Amboy Road  
Staten Island, NY 10312

Unit: Continental X-Ray, Max kVp = 130, Max mA = 300

Tube: Housing - Diamond 150TH, SN: A061438  
Insert - Rad-14

Image Intensifier: 9" II connected to a monitor and a video recorder

Test Equipment: Keithley Model 10100A electrometer with a 60 cc ion chamber

The undersign was engaged by Dr. Pugliese to measure the entrance skin exposure on a Continental x-ray unit. Typical x-ray examination included the use of x-ray and visualization with a special fluoroscope connected to a video monitor and video recorder. The technique for such examinations are as follow:

- I. Examination with Visualizer, TFD = 39", Target-II = 42"
  - A. Cervical spine (part thickness = 10cm)
    1. one exposure of lateral cervical spine: 68 kVp, 100 mA, 1/4 sec, TSD = 27"
    2. video fluoroscopic examination (manual mode): 60 kVp, 0.25 mA, 12 sec, TSD = 36.5"

During video fluoroscopic mode, the patient stands in the Ant/Post position and rotate his/her head.
  - B. Lumbar spine (part thickness = 18cm)
    1. one exposure of AP Lumbopelvic: 86 kVp, 200 mA, 1/2 sec, TSD = 32"
    2. video fluoroscopic examination (manual mode): 80 kVp, 0.25 mA, 10 sec, TSD = 35"

Examination with radiographic mode only

A1. Cervical spine (part thickness = 10cm), TFD = 39"

1. 1 - Neutral Lateral: 68 kVp, 100 mA, 1/4 sec, TSD = 27"
2. 1 - Flexed Lateral: 68 kVp, 100 mA, 1/4 sec, TSD = 27"
3. 1 - Extended Lateral: 68 kVp, 100 mA, 1/4 sec, TSD = 27"

A2. Cervical spine (part thickness = 12cm), Target-II = 42"

1. 1 - AP Neutral: 68 kVp, 100 mA, 2/5 sec, TSD = 33.5"
2. 1 - AP Rt Rotation: 68 kVp, 100 mA, 2/5 sec, TSD = 33.5"
3. 1 - AP Lt Rotation: 68 kVp, 100 mA, 2/5 sec, TSD = 33.5"

B. Lumbar spine (part thickness = 18 cm), TFD = 39"

1. 1 - AP lumbopelvic Neutral 86 kVp, 200 mA, 1/2 sec, TSD = 32"
2. 1 - AP lumbopelvic Rt Flexion 86 kVp, 200 mA, 1/2 sec, TSD = 32"
3. 1 - AP lumbopelvic Lt Flexion 86 kVp, 200 mA, 1/2 sec, TSD = 32"

Entrance Skin Exposure (ESE)

The entrance skin exposure for each technique was calculated from the measured value. The entrance skin exposure for each technique was calculated from the measured value.

Examination with Visualizer (video fluoroscope)

A. Cervical spine (part thickness = 10cm)

		ESE
1.	lateral C-spine: 68 kVp, 100 mA, 1/4 sec	62 mR
2.	video fluoroscopic mode: 60 kVp, 0.25 mA, 12 sec	10 mR
Total =		72 mR

B. Lumbar spine (part thickness 18cm),

		ESE
1.	AP lumbopelvic: 86 kVp, 200 mA, 1/2 sec	466 mR
2.	video fluoroscopic mode: 80 kVp, 0.25 mA, 10 sec	25 mR
Total =		491 mR

← regular - x-ray  
 5-3000 for  
 comparison

II Examination with radiographic mode only

			ESE
A.	Cervical spine (part thickness = 10cm)		
1.	3 - laterals	68 kVp, 100 mA, 1/4 sec	285 mR
2.	3 - APs	68 kVp, 100 mA, 2/5 sec	381 mR
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Total =			666 mR
B.	Lumbar spine (part thickness = 18cm)		ESE
1.	3 - APs	86 kVp, 200 mA, 1/2 sec	1,398 mR

} These views are not necessary w/ video x-ray

Test Performed By

*Bin Chan*

Bin Chan, M.S.  
ABR Certified Physicist

Product Specifications

- 16 Megabyte of RAM
- 840 Megabyte Hard Drive or better
- 3.5 inch Floppy Drive
- Pre-installed Windows 95 Software
- Pre-installed Super Adjuster Software
- 2 Serial Ports
- 1 Parallel Port
- 1 Mouse or Trackball
- Software - based on Customer's specifications

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