Carestream

Dosimetry of the CS 9300 ENT CBCT Unit

Field of View	Effective Dose in µSv (ICRP 2007 Tissue Weights)	Dose as % of annual per capita background†	Days of per capita background †	Probability of x in a million fatal cancer ICRP 2007 (dose x $5.5x10^{-2}$)	Low Dose MDCT Effective Dose in µSv	Dose Saving in Percentage	Routine MDCT Effective Dose in µSv	Dose Saving in Percentage
Sinus Programs								
17x11 cm 85kV, 4mA, 6.4 Secs	90	2.9%	11	5	[1]534	*83%	[1]860	*91%
17x13.5 cm 85kV, 4mA, 11.2 Secs	157	5.0%	18	9	[1]534	71%	[1]860	82%
Temporal Programs								
5x5 cm fast 90kV,6.3mA,12 Secs	45	1.4%	5	2	[2]280	*84%	[3]803	*94%
8x8 cm 90kV,6mA,12.1 Secs	86	2.8%	10	5	[2]280	*70%	[3]803	*89%
17x6 cm 90kV,6.3mA,8.5 Secs	77	2.5%	9	4	[2]280	72%	[3]803	90%
Preview / Scout								
17x13.5 cm scout view	0.5	0.01%	0.06	0.02				

*** 9300 CBCT ENT scans may reduce the effective patient dose on an average up to 85% over the medical CT ENT scans**

†3.11 mSv, National Council on Radiation Protection and Measurements. Ionizing Radiation Exposure of the Population of the United States (Report No. 160), Bethesda, MD. 2009. http://www.ncrponline.org/Publications/160press.html

* No equivalent FOV selection available in medical CT. Closest FOV in medical CT is used to compare.

[1] Ludlow, J. B. and Ivanovic, M. Comparative dosimetry of dental CBCT devices and 64-slice CT for oral and maxillofacial radiology. Oral Surg. Oral Med. Oral Pathol. Oral Radiol. Endod. 106, 106–114 (2008).

[2] Faccioli et al, "Radiation dose saving through the use of cone beam CT in hearing impaired patients, Radiol Med, vol.114, pp.1308-1318, 2009

3 Niu et al, Radiation Dose to the lens using different Temporal Bone CT Scanning Protocols, AJNR, Issue 31, pp.226-229, 2010

CS9300 Effectives doses are from: Ludlow JB: Dosimetry of CS9300 CBCT Unit study conducted on June 10, 2011 on the CS9300 serial number ZAAN009