

CT-Expo v2.1




Calculation

Calculate

Benchmarking

Standard

Help

Light

Close

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All scanners

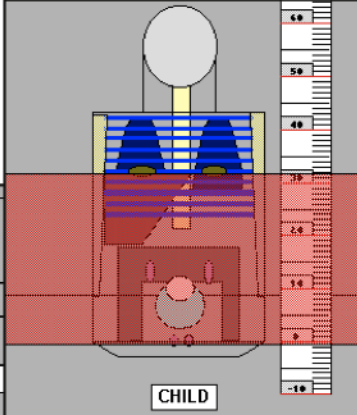

3. Scanner Model

Manufacturer: Siemens

Scanner: Somatom Plus 4 Series

4. Scan Parameters

- Somatom 2
- Somatom CR(L) (2/3)
- Somatom CR
- Somatom DRH
- Somatom DRG
- Somatom H42
- Somatom AR Scopes
- Somatom Plus 4 (Child)
- Somatom Plus 4 Series
- Somatom Plus 4 v2
- Somatom Arctis
- Fisheye, Sirenia, Emotion Balance, Emotion (from 100)

All age groups

Dose assessment

Results per Scan Series	Dose Values per Scan or per Series*			
	CTDI _{vol} [mGy]	CTDI _{vol} [mGy]	DLP _{vol} * [mGy*cm]	Effective Dose E _{eff} [mSv]
1st Series	0,6	0,6	172	2,5
2nd Series	0,6	0,6	240	3,2
3rd Series	11,4	11,4	457	6,7

*CTDI and DLP values refer to 120kVp phantom. Effective dose E_{eff} refers to ICRP 103.

Benchmarking

Standard Examinations	Head / Neck		Chest		Abdomen / Pelvis		Whole Body	
	CTDI _{vol} [mGy]	DLP _{vol} [mGy*cm]	CTDI _{vol} [mGy]	DLP _{vol} [mGy*cm]	CTDI _{vol} [mGy]	DLP _{vol} [mGy*cm]	CTDI _{vol} [mGy]	DLP _{vol} [mGy*cm]
Head / Neck	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Chest	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Abdomen / Pelvis	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Whole Body	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1

Benchmarking MSCT

Standard Examinations	Head / Neck		Chest		Abdomen / Pelvis		Whole Body	
	CTDI _{vol} [mGy]	DLP _{vol} [mGy*cm]	CTDI _{vol} [mGy]	DLP _{vol} [mGy*cm]	CTDI _{vol} [mGy]	DLP _{vol} [mGy*cm]	CTDI _{vol} [mGy]	DLP _{vol} [mGy*cm]
Head / Neck	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Chest	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Abdomen / Pelvis	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Whole Body	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1

Relative Dose

CT-Expo

Description:

CT-Expo is an MS Excel application written in Visual Basic to calculate patient dose values resulting from CT examinations. CT-Expo is based on computational methods which were used to evaluate the data collected in the German surveys on CT practice. A comprehensive description of the underlying methods is given in the book 'Radiation Exposure in Computed Tomography' *.

CT-Expo allows the calculation of the following dose quantities:

- Weighted CTDI
- Volume CTDI
- Dose-length product
- Organ doses
- Effective dose(ICRP 60 and ICRP 103)

Special features:

In contrast to similar programs for CT dose assessment, CT-Expo offers a number of unique features:

- Dose calculation for all age groups (adults, children, infants)
- Separate calculation for each gender
- Applicable for all existing scanner models
- Correction of scanner-specific influences
- Takes into account overbeaming effects of single and multi-slice scanners
- Takes into account overranging effects in spiral scanning mode
- Standardized and free dose assessment
- -Simplified organ and effective dose assessment from CTDI_{vol} and DLP data (**NEW**)
- Comparison with results from German survey on CT practice in 1999
- Comprehensive benchmarking section including guidance on dose optimization
- Regular updates of scanner data base

A comprehensive description of the software and its applications has been published (in German)

* Nagel HD (ed.), Galanski M, Hidajat N, Maier W, Schmidt Th. *Radiation Exposure in Computed Tomography*, 4th edition. Hamburg: CTB Publications, 2002 (Price: 25.00 Euro plus delivery fee, contact: ctb-publications@gmx.de)

in *RoeFo* 12/2002 (p. 1570 - 76).

System requirements:

- PC: Pentium, at least Windows 95, Excel 97
- Mac: PPC, at least OS 7.5, Excel 98

Content:

- CD with CT-Expo application
- PDF manual
- Registration form

Rates:

- Single copy: 50 Euro plus delivery fee
- Five copies: 175 Euro plus delivery fee
- Updates: 10 Euro (five copies:35 Euro)
- Future upgrades with extended functionality at reduced rates for registered users

Available: Since autumn 2001

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A demo version with reduced scanner spectrum, but full functionality is available on request; distribution only per e-mail or download from:

http://www.mh-hannover.de/fileadmin/kliniken/diagnostische_radiologie/download/ct-expo-e.zip