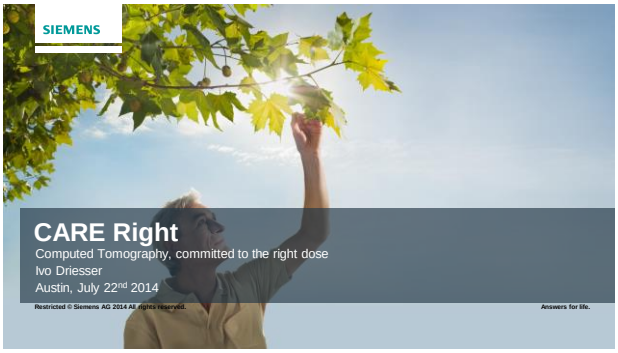
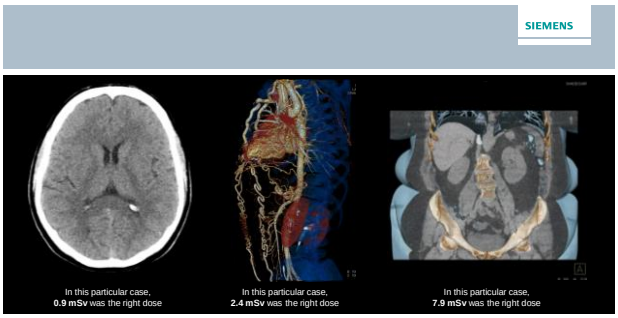
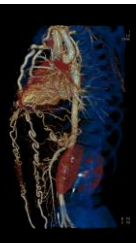




Left: Courtesy of Inselspital Bern / Bern, Switzerland.
Middle: Courtesy of Wexford General Hospital / Newtown, Ireland. Right: Courtesy of C.I.M. Lorenez / Cesson Sevigne, France

SIEMENS

For the ideal balance betweeen radiation dose and image quality:



Courtesy of Wexford General Hospital / Newtown, Ireland

SIEMENS

CARE Right
The unique Siemens approach

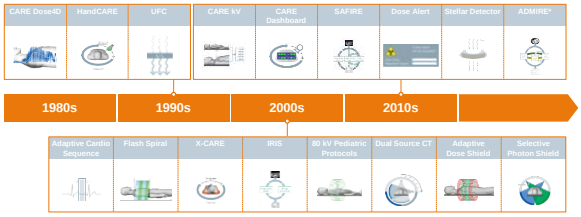
Committed to the Right Dose in CT

SIEMENS

CARE Right
Committed to the Right Dose in CT

Right dose technology
Proven innovation and technological leadership

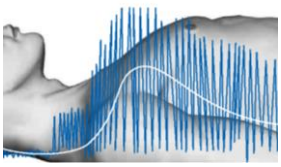
SIEMENS



*This product is 510(k) pending. Not available for sale in the U.S.

CARE Dose4D
Minimal dose, maximum quality and fully automated

SIEMENS

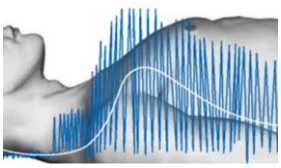


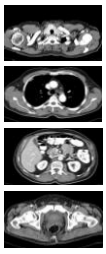
Fully automated dose modulation in real time

- Highest dose savings without IQ compromise
- Protocols automatically adapted
- Modulation based on the topogram and online
- Fully adjustable with CARE Dose Configurator

CARE Dose4D
Minimal dose, maximum quality and fully automated

SIEMENS



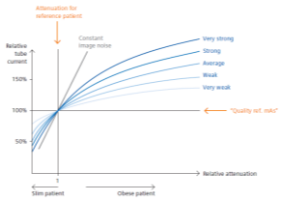


Different areas of the body have different shapes

And therefore need customized dose (= tube current)

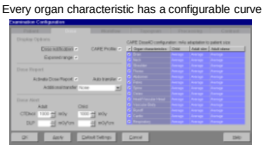
CARE Dose4D
Minimal dose, maximum quality and fully automated

SIEMENS



Fully automated dose modulation in x, y and z direction in real time

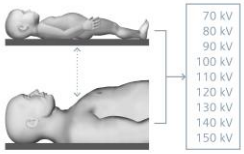
- Adjustments follow the configurable curve to best fit the clinical needs
- Every organ characteristic has a configurable curve



CARE kV
First automated voltage setting

SIEMENS

Allows contrast-to-noise ratio to be optimized

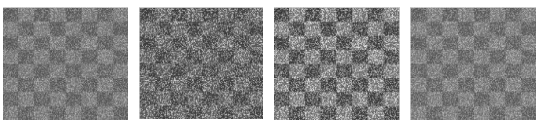


- **Up to 60% dose reduction** can be achieved without compromise in image quality
- Zero click automated kV setting for each individual patient
- The three different modes of CARE kV
  On: Optimized tube voltage and tube current based on the patient's size and clinical question
  Off: The scan is performed with the kV setting defined in the respective scan protocol.
  Semi: A user specified kV setting will be used and mAs-values will be adjusted.

CARE kV
First automated voltage setting

SIEMENS

Optimization of kV to minimize patient dose at maintained image quality

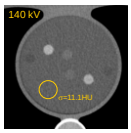


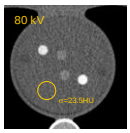
original | ***noise doubled*** | noise doubled ***contrast double*** | noise doubled contrast doubled ***displ. window adapted***

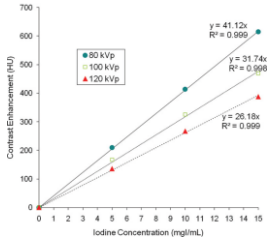
same CNR = same 'image quality'

CARE kV
First automated voltage setting

SIEMENS

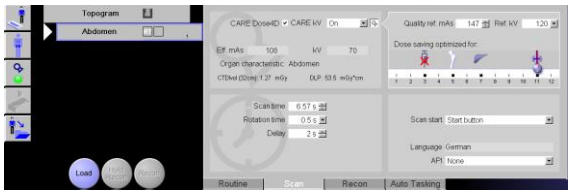






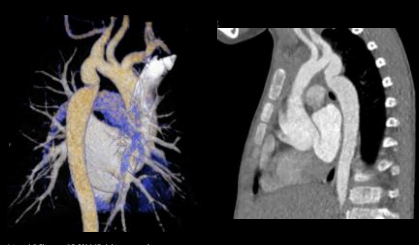
CARE kV
First automated voltage setting

SIEMENS



Pediatric Imaging with 70 kV
Aortic angiography

SIEMENS



SOMATOM
Definition AS+

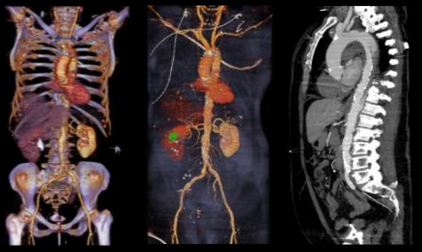
collimation: 128 x 0.6 mm
spatial resolution: 0.33 mm
scan time: 0.01s
scan length: 175 mm
rotation time: 0.3 s
tube setting:
70 kV, 29 eff. mAs
CTDIvol: 0.26 mGy
DLP: 7 mGycm
0.23 mSv

70 kV
0.23 mSv

Courtesy: TDM Ste-Marie / Osny, France

CARE kV
First automated voltage setting

SIEMENS



SOMATOM Force

collimation: 192 x 0.6mm
scan time: 1 s
scan length: 740 mm
rotation time: 0.25 s
tube setting:
80 kV, 140 eff. mAs
CTDIvol: 2.09 mGy
DLP: 154.6 mGycm
2.32 mSv

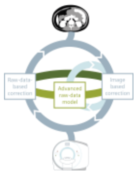
80 kV
2.32 mSv
20 ml Contrast medium

Courtesy of UMM, Mannheim, Germany

ADMIRE – Advanced Modeled Iterative Reconstruction
The latest generation iterative reconstruction

SIEMENS

Improved IQ at excellent dose values



On the fly powerful dose reduction, excellent image quality and everyday suitability

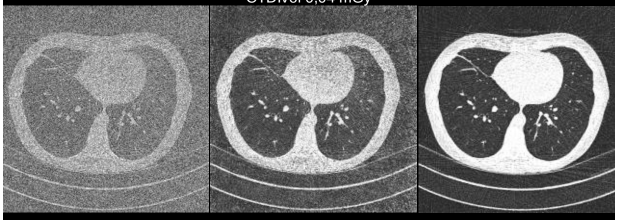
- Potential to lower radiation up to 60% in all clinical applications
- Superb details, delineation and sharpness of organ borders
- Significant artifact reduction, e.g. streak artifacts in the shoulder region
- PACS-Ready workflow even for thick slices
- Reader-Ready reconstructions

* In clinical practice, the use of ADMIRE may reduce CT patient dose depending on the clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task. The following test method was used to determine a 54 to 60% dose reduction when using the ADMIRE reconstruction software. Noise, CT numbers, homogeneity, low-contrast resolution and high contrast resolution were assessed in a Gammex 438 phantom. Low dose data reconstructed with ADMIRE showed the same image quality compared to full dose data based on this test. Data on file.

ADMIRE – Advanced Modeled Iterative Reconstruction
The latest generation iterative reconstruction

SIEMENS

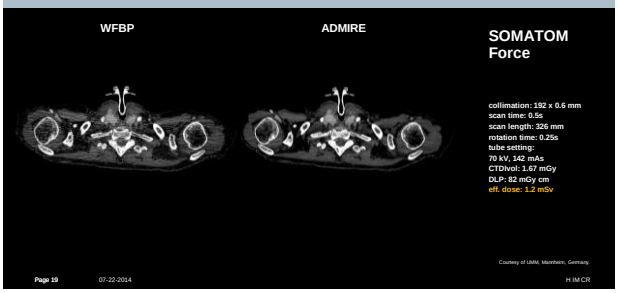
CTDIvol 0,04 mGy



WFBP **SAFIRE** **ADMIRE**

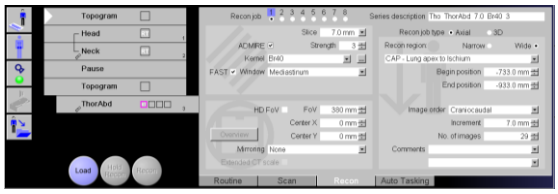
ADMIRE – Advanced Modeled Iterative Reconstruction
The latest generation iterative reconstruction

SIEMENS



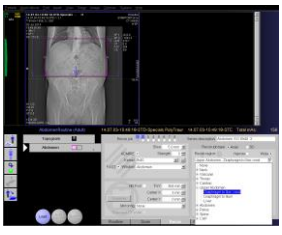
ADMIRE – Advanced Modeled Iterative Reconstruction
The latest generation iterative reconstruction

SIEMENS



FAST Planning
Radiation reduction starts with good planning

SIEMENS



Safe, fast and standardized

- Automated organ-based scan range planning based on anatomical landmarks
- Dose saving by perfect planning
- Auto iso-center positioning
- Optimized workflow

CARE Right
Committed to the Right Dose in CT

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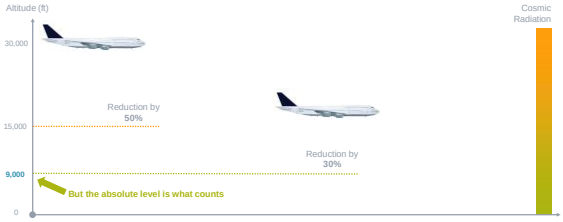
Right dose levels
Understanding of absolute dose values

SIEMENS

Example: Comparison of radiation exposure due to reduction of flight level



Adult Imaging with 80 kV
Aortic CTA

SIEMENS

SOMATOM Sensation 64

Initial examination: @ 120 kV

6.6 mSv

SOMATOM Definition Edge

Follow-up examination: @ 80 kV

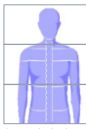
2.6 mSv

Knappschafts-Krankenhaus / Bottrop, Germany

Right dose levels
Regional reference values as a guidance

SIEMENS

	Switzerland	Germany	Europe	USA
Head	65 mGy	65 mGy	60 mGy	75 mGy
Thorax	15 mGy	12 mGy	30 mGy	n.a.
Abdomen	15 mGy	20 mGy	35 mGy	25 mGy



Average sized patient

Right dose levels
Recommendations from experts

SIEMENS

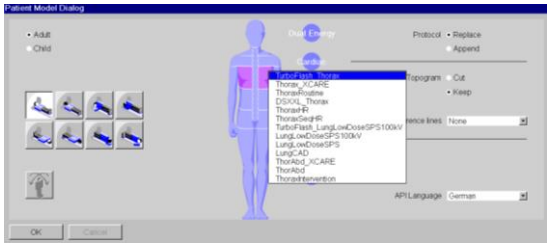
SIERRA

Siemens Radiation Reduction Alliance:

- 15 key opinion leaders in radiology
- Drive research to improve radiation reduction technologies
- Create recommendations for clinical practice everywhere

Right dose levels
Base for Siemens CT standard scan protocols

SIEMENS



CARE Right
Committed to the Right Dose in CT

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Right dose management
The sustainable dose management

SIEMENS

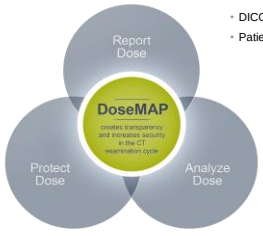
DoseMAP
Access, report and manage dose data

EduCARE
Continuous education of staff

Optimize CARE CT
Optimization of the current dose situation

Right dose management
The Siemens CT Dose Management Program - DoseMAP

SIEMENS



- DICOM Structured Dose Report
- Patient Protocol

- Scan Protocol Lock
- Dose Notification
- Dose Alert

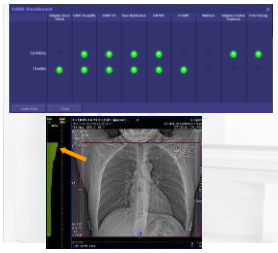
- CARE Analytics
- CARE Dashboard
- CARE Profile

Analyze Dose
Assess the dose situation

SIEMENS

Pre-examination dose checkup

- CARE Dashboard*:
  Overview of used dose features per scan
- CARE Profile*:
  Visualization of dose distribution prior to scan at every z-position



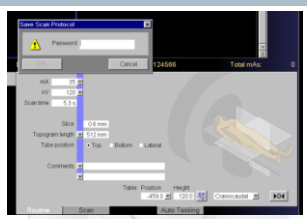
* Availability depending on scanner

Protect Dose
Manage access to scan protocols

SIEMENS

Access Protection*

- Increased security by managing user administration rights with Scan Protocol Lock



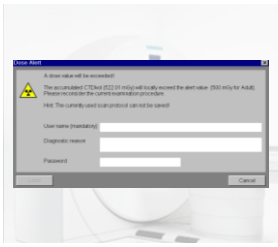
* Availability depending on scanner

Protect Dose
Automated monitoring of dose values

SIEMENS

Dose Notification* and
Dose Alert*

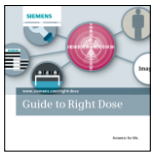
- May help to protect patients from over-radiation
- Warns the operator in case set dose thresholds are exceeded



* Availability depending on scanner

Right dose management
EduCARE

SIEMENS



Large portfolio available to increase your skills

- Dedicated Siemens YouTube Channel
- "How to Guides"
- Webinars
- e-learnings
- Siemens Healthcare "Guide to right dose"

Right dose management
Optimize CARE CT – 4 steps to optimize CT Dose

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CARE Right
Committed to the Right Dose in CT

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CARE Right
Committed to the Right Dose in CT