# Ultra-Helical and AIDR

Chest, Abdomen and Pelvis CT scan for Lung CA staging. The original exam was acquired in November, 2010 and the follow up exam was acquired in April 2011.

## 64 Detector Helical

Chest, Abdomen and Pelvis: Original Exam

Total Scan Time:
12 s

100 ml contrast
Without AIDR

CTDIvol24.1 mGy
DLP 1313.3 mGy·cm

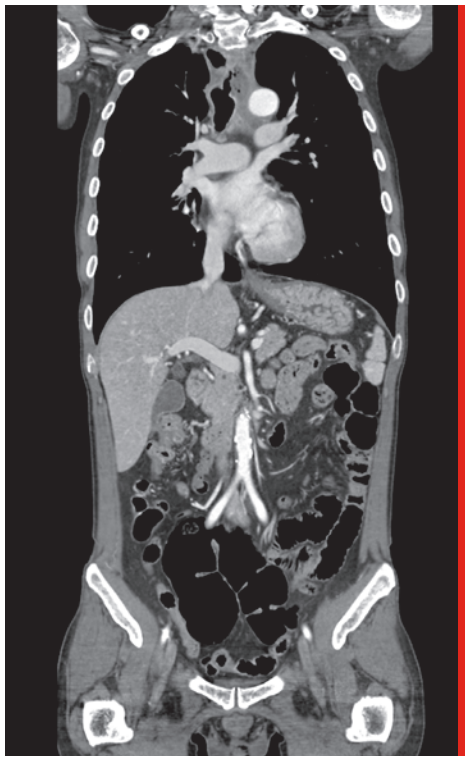
eff. dose 19.4 mSv
k factor 0.0145*

# Improving Clinical Outcomes

The combination of Toshiba's most advanced technology, Ultra-Helical, Active Collimation and AIDR can improve your workflow with faster acquisitions, optimizing contrast usage while ensuring a low radiation dose to the patient.

## 160 Detector Ultra-Helical

Chest, Abdomen and Pelvis: 6-month, Follow-up Exam



Total Scan Time:
4.5 s

75 ml contrast
With AIDR and
Active Collimation

CTDIvol7.5 mGy
DLP 533 mGy·cm

eff. dose 7.7 mSv
k factor 0.0145*

*AAPM Report 96

## AIDR (Adaptive Iterative Dose Reduction)*

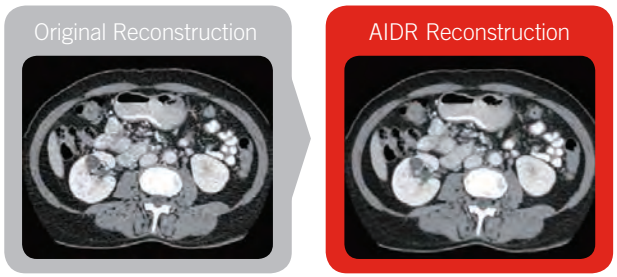
AIDR has been developed as the next step in the evolution of noise reduction technology.

AIDR is an iterative algorithm where noise is removed from the original data, the results are analyzed and the process is repeated until the target level of noise reduction is achieved.

This iterative algorithm is superior in removing background noise while preserving diagnostic information compared to non-iterative approaches. AIDR can be applied to all acquisition modes for routine clinical use and is able to remove image noise resulting in dose reduction.

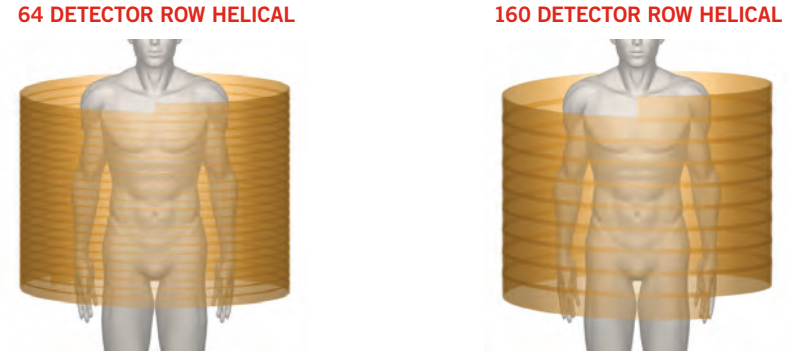

AIDR Reconstruction Process

Multiple iterations of noise reduction adaptively targeted to the clinical task.




## Ultra-Helical

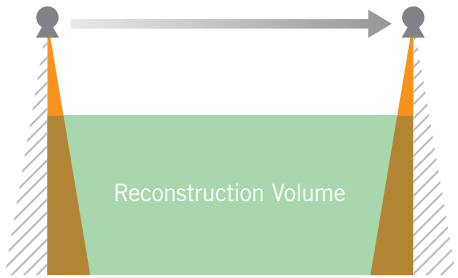
Developed exclusively by Toshiba, Ultra-Helical scanning with Active Collimation facilitates a faster diagnosis by performing ultra-fast, high-quality exams using the industry's only 8 cm, 0.5 mm x 160 detector row acquisition. Able to perform scanning without any field-of-view (FOV) limitation, Ultra-Helical is ideal for trauma and whole body CTA acquisition. It can also optimize IV contrast usage resulting in shorter studies and greater patient safety.




**Ultra-Helical scanning can provide whole body coverage with ultra fast scan times.**

## Active Collimation

In Helical scanning, exposure is needed before the start and after the end of the planned scan range in order to reconstruct images at these positions. This over-ranging requires at least one extra rotation, although only a small portion of this data is utilized. Active Collimation synchronizes the width of the x-ray beam at the ends of the scan range to the clinically useful area needed for image reconstruction. By eliminating exposure that is not used for diagnosis, patient dose can be reduced.




**Active Collimation can reduce patient dose by eliminating exposure associated with over-ranging.**

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**In clinical practice, the use of the AIDR feature 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.*

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