

TECHNOLOGY HISTORY

For over 130 years, Toshiba has been a world leader in developing technology to improve the quality of life. Our 50,000 global patents demonstrate a long, rich history of leading innovation. It might surprise you to learn about some of the things we've invented.

1915 Japan's first X-ray tube	1990 First helical CT scanner	2002 First 400 ms CT scanner
1954 First digital computer	1993 First real-time CT fluoro	2004 First Quantum Denoising Software
1977 First cardiac ultrasound scanner	1995 First DVD	2007 First dynamic volume CT scanner
1985 First slip-ring CT scanner	1999 First quiet MRI	2009 First 160-row Helical
1986 First laptop computer	1999 First 0.5 mm multidetector CT	2010 First iterative recon technique for 320 Detector Row CT



TOSHIBA MEDICAL SYSTEMS CORPORATION

<http://www.toshibamedicalsystems.com>

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Model number: TSX-032A MCACT0213EA 2011-03 TME/D

Toshiba Medical Systems Corporation meets internationally recognized standards for Quality Management System ISO 9001, ISO 13485.

Toshiba Medical Systems Corporation Nasu Operations meets the Environmental Management System standard, ISO 14001.

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Printed in Japan

TOSHIBA
Leading Innovation >>>

Alexion

Maximum Performance, Minimum Space



Everybody deserves a high performance multislice CT system

Toshiba Medical Systems has been developing multislice CT systems with advanced functionality to expand clinical possibilities in patient care since the mid 1990s. With each passing year, we have added to our suite of *SURE* Technologies™ to further increase the clinical utility of CT while making our systems easier to use and recognizing the great importance of minimizing patient dose. Today, CT plays an integral role as a primary diagnostic imaging modality in healthcare. However, the constant pursuit of cutting edge technology has tended to focus on the promotion and development of expensive high end systems.

In response to the needs of a wide variety of customers, Toshiba has developed the new Alexion™ CT system, which delivers high performance multislice capabilities in a compact and affordable design.

Alexion is our new entry level multislice CT system for customers who need high patient throughput, desire advanced 3D and postprocessing applications, and demand the latest dose reduction technologies. As well as offering advanced technology in a small package, Alexion features navigation mode operation for first time and novice users.



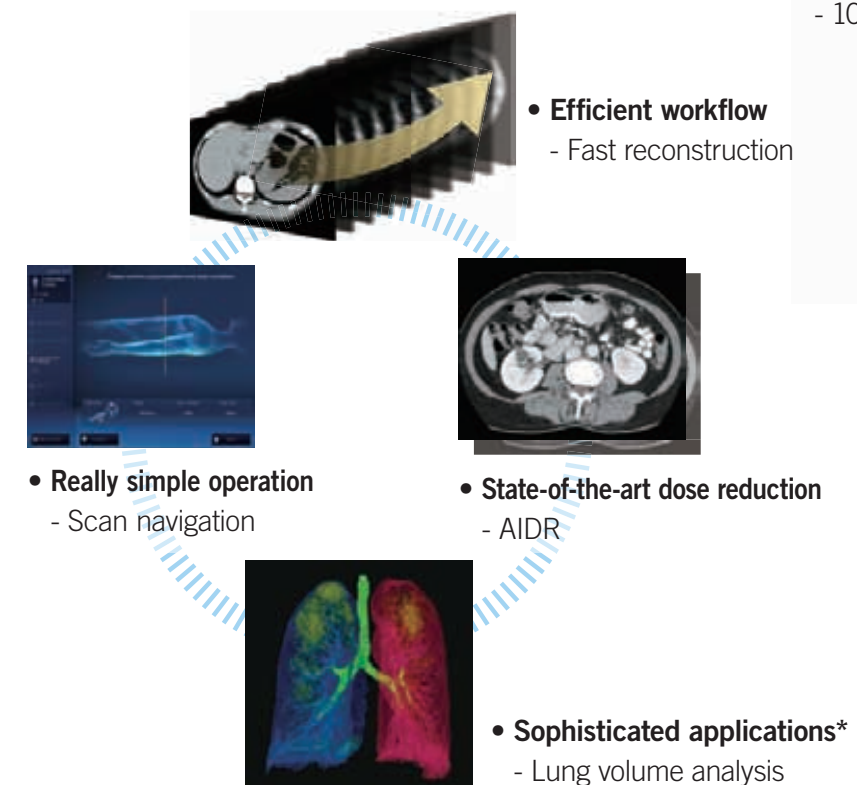
Maximum Performance

The unique navigation scan mode permits high quality examinations to be performed even by inexperienced users. Alexion also incorporates the very latest in dose reduction technologies, including AIDR, Toshiba's Adaptive Iterative Dose Reduction technology that can reduce patient dose by up to 75% when combined with *SURE* Exposure™ 3D.

Advanced image analysis is supported by a suite of applications available right at the console.

Minimum Space

After extensive consultation with a wide variety of customers, Alexion was designed to have a small footprint of just 10.4 m², making it one of the most attractive systems on the market in terms of ease of installation. Alexion truly is designed for everyone.



- **Easy installation**
- 10.4 m² foot print



*option

Powerful performance

To satisfy the demands of healthcare providers today, a CT system needs to meet certain requirements. The system must feature an easy to use interface, high patient throughput, and advanced 3D image analysis capabilities. Alexion offers all this and more.

NAVIGATION MODE

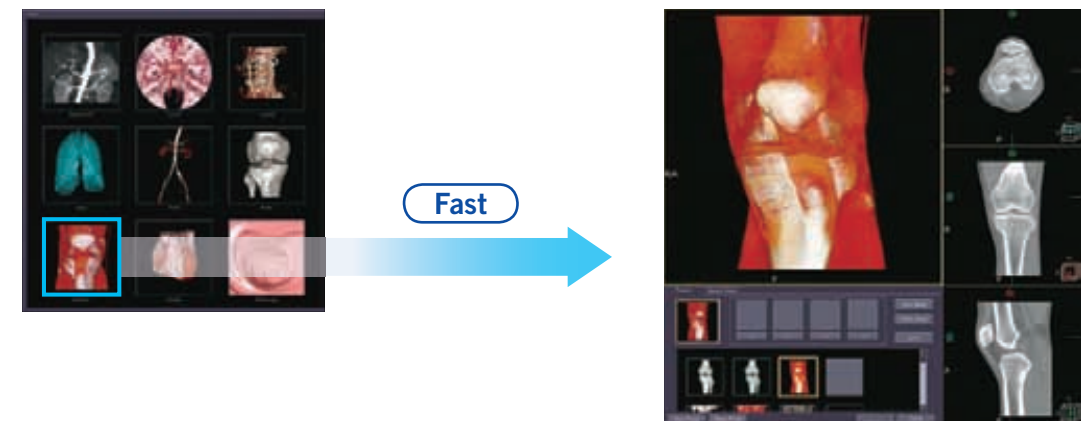
Alexion features unique navigation-mode operation that guides the operator through every step of the examination with state-of-the-art computer graphics and animation. A newly developed intelligent filming function automatically compiles images in a predefined layout for fast and efficient workflow.

Navigation mode is perfectly suited for novice users and part-time operators who may need to perform scanning outside normal working hours, allowing all users to take full advantage of the high performance of this multislice CT system.



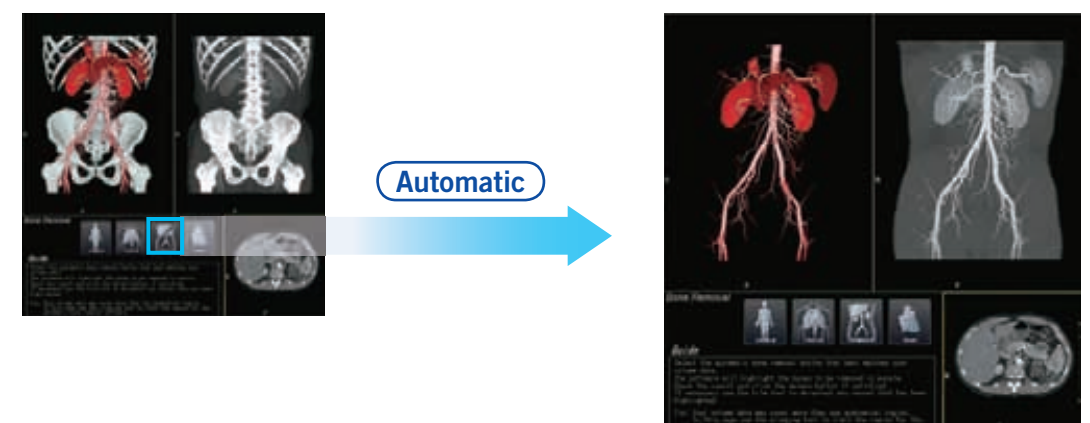
EASY 3D

With Alexion's user-friendly 3D imaging software, high quality 3D images can be generated with outstanding ease. Just select the desired protocol from the gallery screen and you're done.



AUTOMATED BONE REMOVAL

Alexion incorporates automated bone segmentation algorithms to quickly and accurately segment bone in CT angiography examinations. In just a few seconds, high quality angiographic images are available for diagnosis.



Efficient workflow

Alexion is designed with the latest hardware, software, and reconstruction technologies to keep pace with your busy workload.

FAST RECONSTRUCTION

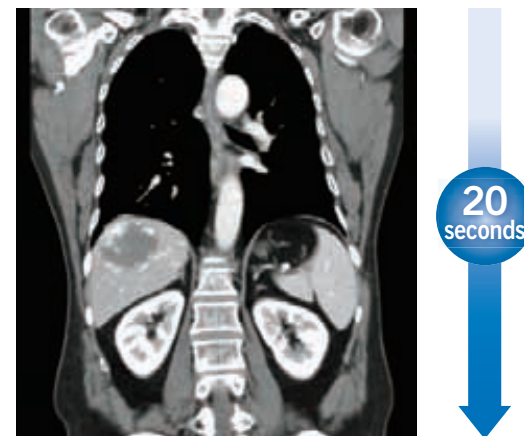
A newly developed reconstruction system supports reconstruction speeds of up to 15 images per second, ensuring rapid diagnosis and high patient throughput.



ADVANCED HELICAL SCANNING

16-detector-row scanning is employed in almost all protocols performed on Alexion, permitting high quality 3D and MPR imaging to become a part of routine diagnosis. The incorporation of the state-of-the-art TCOT* reconstruction algorithm guarantees superb image quality at all helical scan speeds.

*TCOT: True cone-beam tomography



REAL-TIME IMAGING

Real-time visualization is a valuable tool that provides an instantaneous view of a helical scan in real-time. A Toshiba first, real-time imaging allows the operator to monitor contrast enhancement and ensures adequate scan coverage without the need to wait for even one conventional image reconstruction.



PATIENT FRIENDLY DESIGN

A gantry aperture of 72 cm provides a comfortable, unrestricted feeling, even for claustrophobic patients. The wide patient couch is designed for comfort and can be lowered to a minimum height of just 31 cm above the floor, allowing easy patient access.

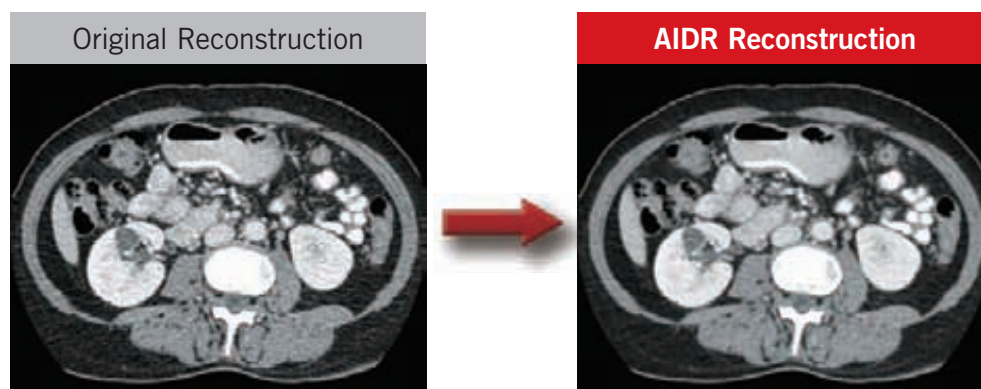
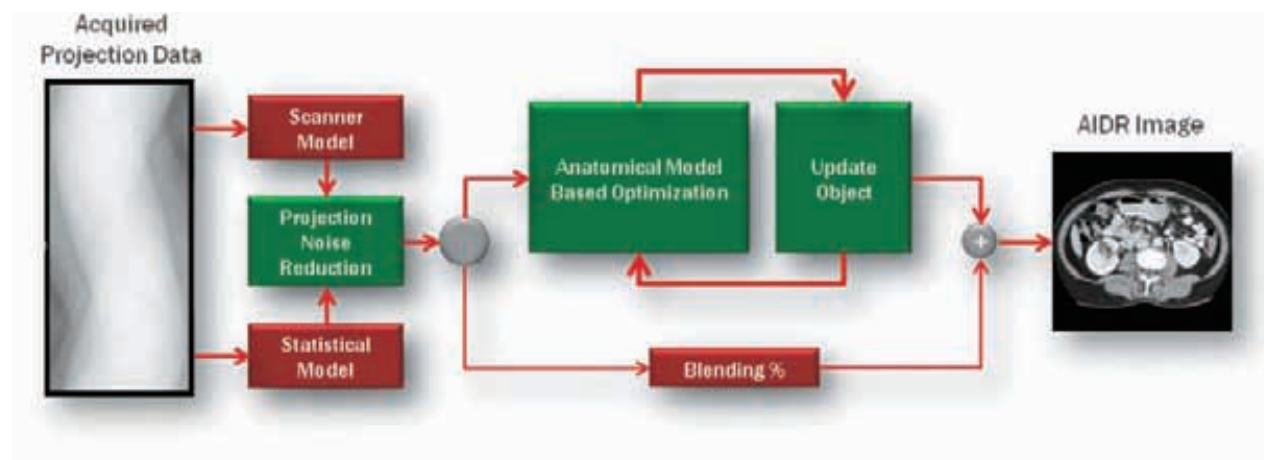


Minimizing the exposure dose

Reducing the X-ray exposure dose to patients is one of Toshiba's top priorities, which is why Alexion incorporates the very latest dose reduction technologies in the standard configuration.

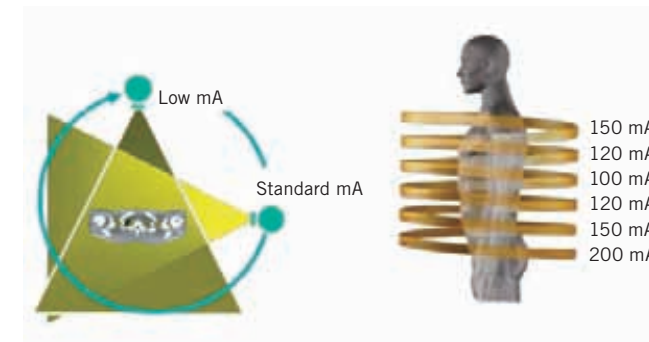
AIDR (ADAPTIVE ITERATIVE DOSE REDUCTION)

AIDR is a sophisticated algorithm that has been designed to work in both the raw data and reconstruction domains. The overall AIDR process results in robust noise reduction, which is essential for achieving ultra low dose examinations in routine clinical imaging. AIDR can be applied to all acquisition modes for routine clinical use and is able to eliminate up to 50% of image noise, resulting in a dose reduction of up to 75%.



SUREEXPOSURE 3D

SUREExposure 3D is based on the user-specified level of image quality and the attenuation measurements automatically obtained from the patient scanogram. The tube current (mA) is automatically adjusted in the X, Y, and Z planes to maintain image quality at a consistent level. As a result, SUREExposure 3D alone can achieve a dose reduction of up to 40% depending on the individual patient and the anatomy to be scanned.

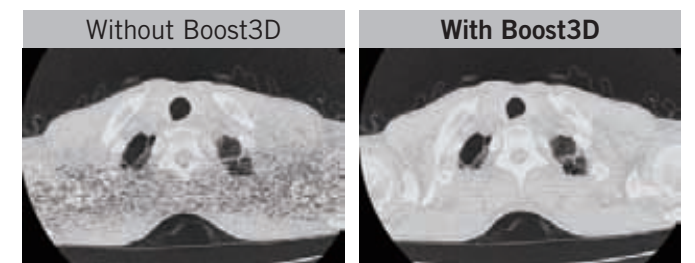


DOSE DISPLAY

During scan planning, the total exposure dose of the examination is calculated and the estimated dose values are displayed before the scan is started. Published reference dose values are available for review.

BOOST3D™

Toshiba has developed Boost3D, which employs an adaptive 3-dimensional algorithm to reduce pattern noise and streak artifacts in the reconstructed images. This raw data based processing specifically targets portions of the raw projection data where the X-ray signals are disproportionately low and selectively applies the Boost3D algorithm to reduce noise in areas of high attenuation.



DOSE REPORT

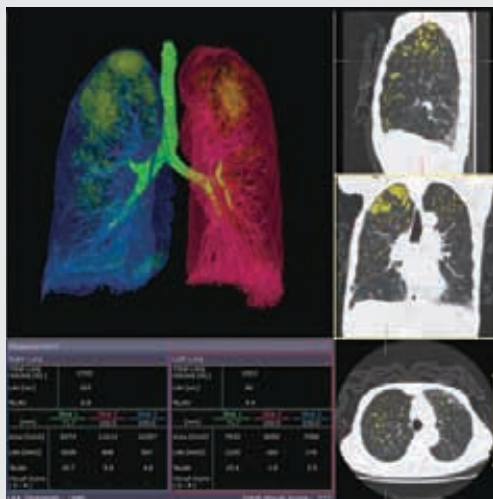
As specified by IHE, the Radiation Exposure Monitoring Profile is available in the software. This function automatically records all scan data so the total dose for a particular patient or study can be accurately tracked.

Advanced visualization

Alexion supports many of the advanced applications originally developed for Toshiba's premium-level CT systems.

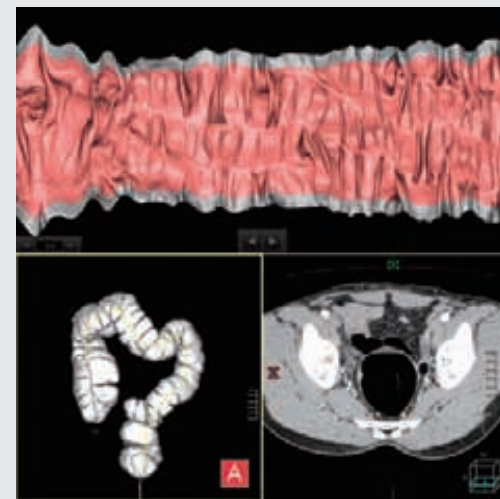
LUNG VOLUME ANALYSIS*

Quantifies low attenuation areas in lung tissue. (Regions of pulmonary emphysema)



COLON VIEW*

Advanced visualization and reporting tools for CT Colonoscopy. Display Includes fillet view, fly-through and polyp tagging.



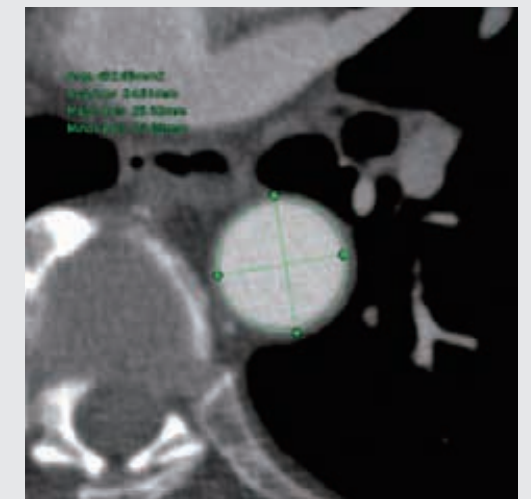
SUREFLUORO™*

Real-time reconstruction and display of fluoroscopic images for faster and safer interventional procedures.



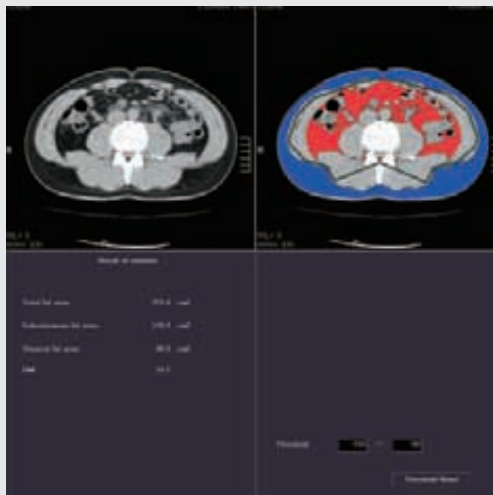
VESSEL VIEW*

Generate and displays CPR and cross-cut images of blood vessels.



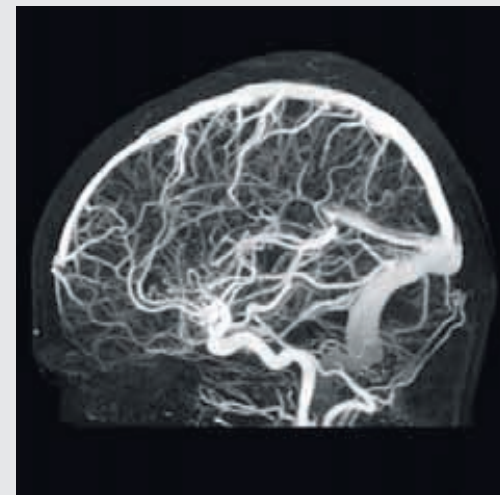
FAT INDEX VIEW*

Automatically calculates the ratio of visceral to subcutaneous fat as a prognostic indicator of metabolic syndrome.



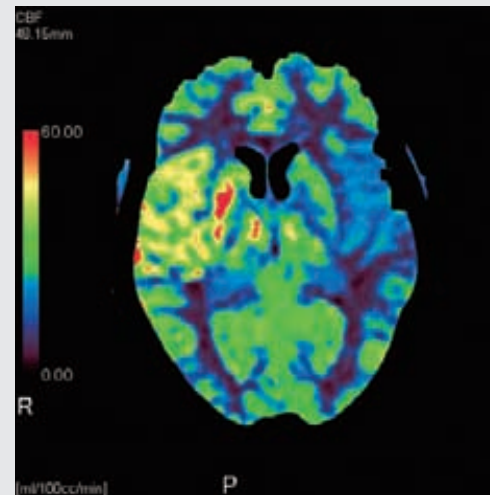
SURESUBTRACTION™*

Automated digital subtraction of intra-cranial vessels from bone.



CBP STUDY*

Blood flow characteristics are analyzed from dynamic scan images and the results are displayed as map images.

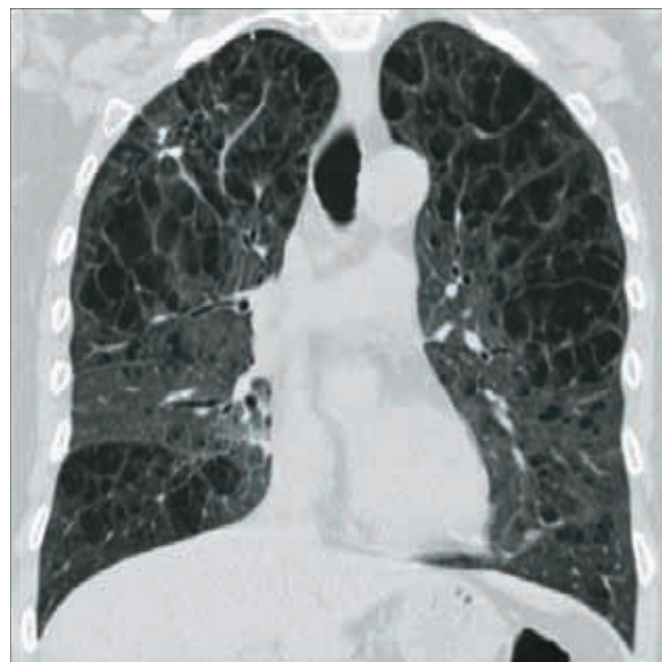
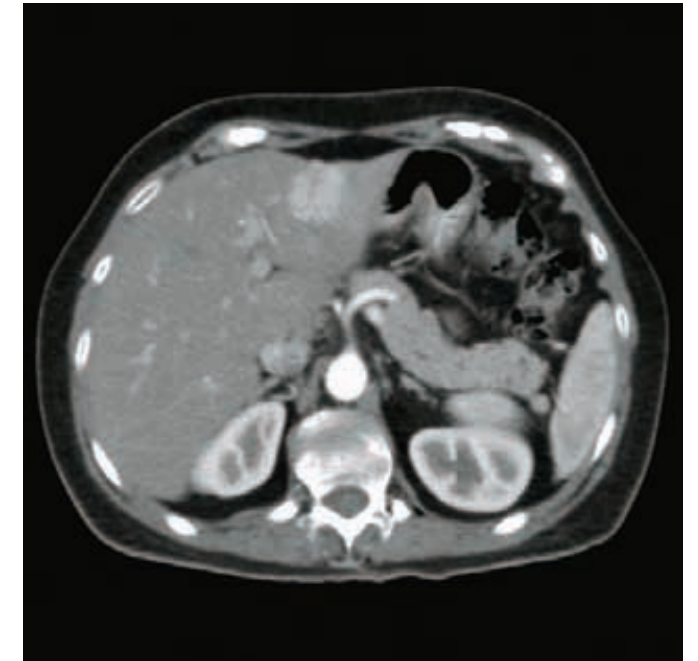
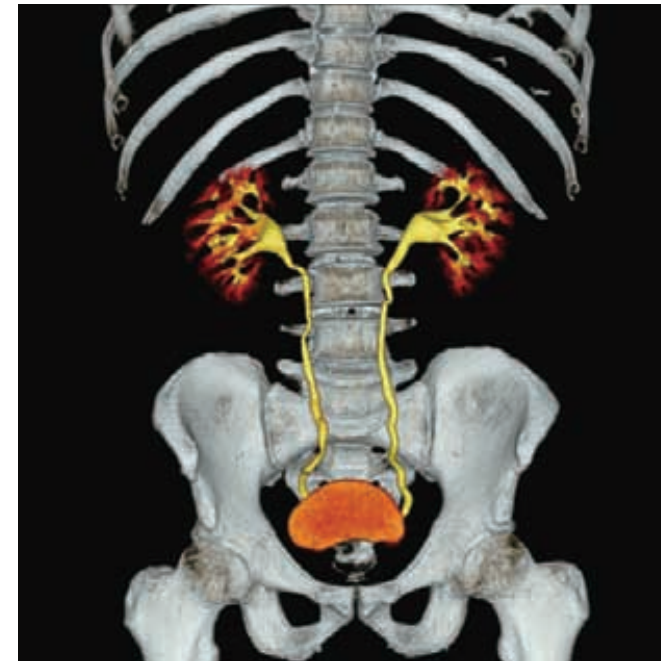
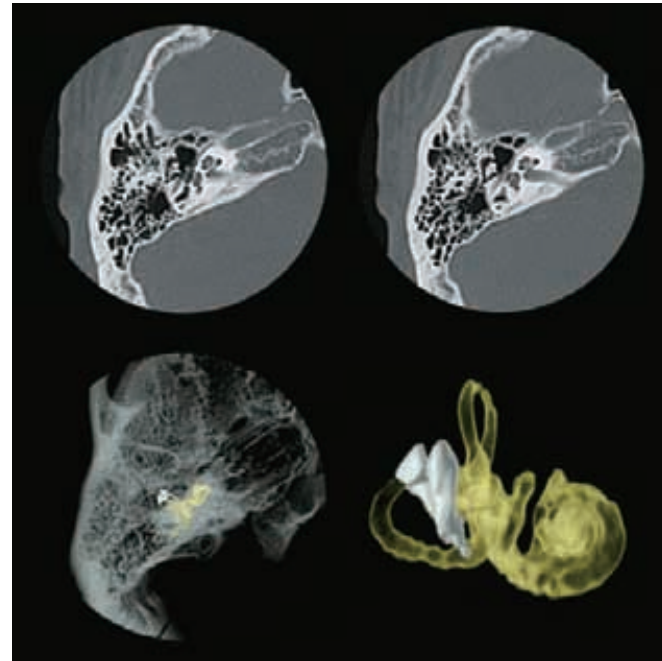
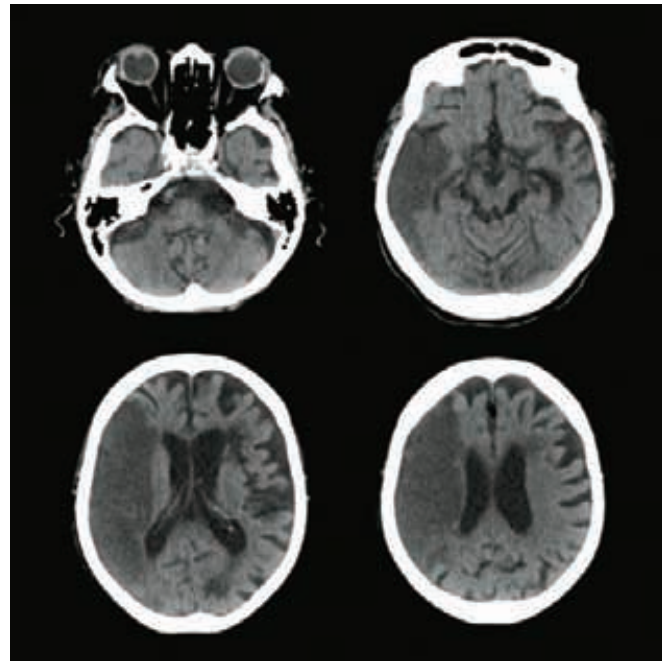


DENTAL ANALYSIS*

Comprehensive dental MPR software with easy-to-use tools for pre-operative planning.



Alexion Performance you can see



Easy installation

Alexion is easy to use and easy to install. The time and effort required for installation have been reduced to minimize downtime at your institution.

SMALL SPACE REQUIREMENTS

Alexion fits easily just about anywhere, even in the same space as most single-slice CT systems. Delivering powerful performance in a compact system, Alexion has been designed to have a footprint of just 10.4 m².



SINGLE-CONSOLE OPERATION

With its compact single console, Alexion can provide the speed and power needed for all types of routine CT applications. Alexion's console is equipped with the latest computer technology, including multicore CPUs, to ensure fast reconstructions and effortless handling of large datasets.



QUICK INSTALLATION

With Alexion's simple siting requirements, the customer can be up and running in less than 3 days.

ENVIRONMENTALLY FRIENDLY

Toshiba is committed to the development and manufacture of environmentally conscious products.

Comprehensive optimization of the energy consumption of all system components reduces overall system power requirements. By employing energy-saving techniques such as automatic control of the gantry fan, power consumption in standby status is reduced by 40% as compared to conventional systems.

