

GE Healthcare

Optima* CT520



Achieve deeper insight.



At GE Healthcare CT, we believe great care happens by design.

So when we set out to design the new Optima CT520 scanner, we started with a broad vision: to help healthcare providers deliver the best patient care. Then we went to you, our customers, and asked you how to make this vision a reality.

We listened to your recommendations and responded with a next-generation, intelligent 16-slice CT scanner that sets a new standard for clinical excellence and diagnostic versatility. Customer-inspired enhancements include superb image quality with advanced dose-optimizing features. Streamlined workflow to help you better manage your daily routine. And a host of technological innovations, such as IQ Enhance, Xstream Integrated Injector, ASiR,* VISR, SmartView* Fluoro, Optidose*, Volara* DAS, and more.

Built on reliable and proven technology, the Optima CT520 combines advanced clinical capacity with economic value. And it will continue to meet your clinical needs long into the future. A strong field service network backed by digital services and remote capabilities, along with a wide range of educational opportunities, ensure lifetime support.

Fast acquisition, reconstruction, and post-processing meet clinical and workflow challenges.

Clinical excellence supported by ASiR, IQ Enhance, and a wide breadth of applications.

Broader vision

Short geometry design improves X-ray utilization.

Image chain delivers high processing power for high-resolution images and low-dose performance.

sion.

Scalable dose management solutions meet today's and tomorrow's needs.

Streamlined workflow allows you to complete exams with ease and confidence.

Wide range of innovative technologies and education opportunities ensure lifetime support.



Change the way you see CT.

Efficient, accurate diagnosis

CT imaging has a variety of innovative uses in vascular studies. Angiography is one of the fastest-growing CT procedures. As a result, the demand for easy-to-use vascular analysis has also grown.

The Optima CT520 makes the angiography exam workflow efficient with proven IQ Enhance technology. IQ Enhance accelerates helical pitch and lets you scan at the same coverage speed as a 50-slice CT. This gives you the speed you need to catch the arterial phase while still delivering the spatial resolution needed to accurately visualize tiny vessels or quantify stenosis. IQ Enhance helps you improve the speed versus image quality balance.

To simplify workflow, the Xstream Integrated Injector lets you synchronize the start of the injection and scan acquisition. Remarkable 3D images, automated bone removal, and one-click vessel tracking simplify processing and communicating with referral doctors or vascular surgeons.

See more with CT

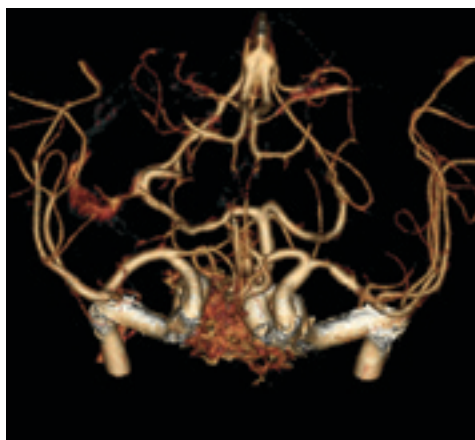
From diagnosis to treatment planning and monitoring, CT is one of the most powerful and versatile imaging tools in the fight against cancer.

The Optima CT520 enables you to see anatomy and lesions clearly and understand the diagnostic landscape more thoroughly, with optimized dose. High-quality images, streamlined workflow, fast acquisition speed, and dose optimization help you detect and evaluate small lesions and follow them over time, or provide a detailed evaluation of tumor extension.

ASiR delivers up to 40% reduction in radiation dose with no compromise in image quality^{**†}. This is particularly helpful for procedures where low dose is especially desirable—for example, for lymphoma and other patients requiring multiple follow-up scans or for patients who are more radiosensitive.

^{**} In clinical practice, the use of ASiR may reduce CT patient dose depending on clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

[†] Image quality as measured by pixel noise standard deviation.



IQ Enhance's outstanding spatial and low-contrast resolution allows a detailed study of arterial vascular disease, including calcified plaque and occluded or lumen reduction.

The images in this brochure were all obtained from an Optima CT520 equivalent evaluation system.



Fast acquisition speed allows you to complete chest-abdomen-pelvis exams consistently in short breathholds, even on non-cooperative patients and children.

Arterial phase



Synchronized comparison, portal phase



Slab recon with volume rendering



Interventional CT

Fresh perspective.

With the Optima CT520, you'll gain a whole new perspective for interventional procedures.

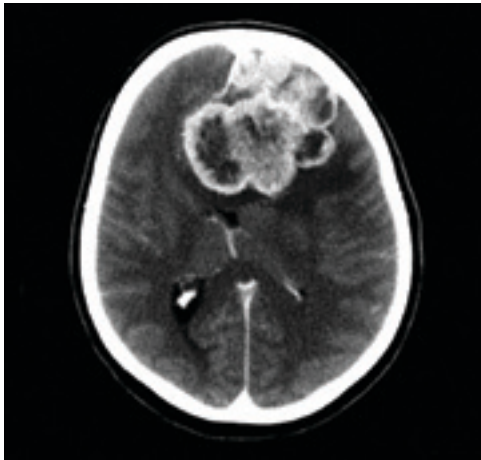
SmartView Fluoro combines advanced visualization techniques with real-time reconstruction and display. A nominal image lag of only 0.20 second gives you the confidence you need for CT-guided interventions, such as core, lung, and retroperitoneal lymph node biopsies; drainage procedures; pain management

procedures; and ablations. Know just where your needle is every step of the way—and even adjust needle positioning for respiratory motion. Get to your target precisely using the fast image display as your guide.

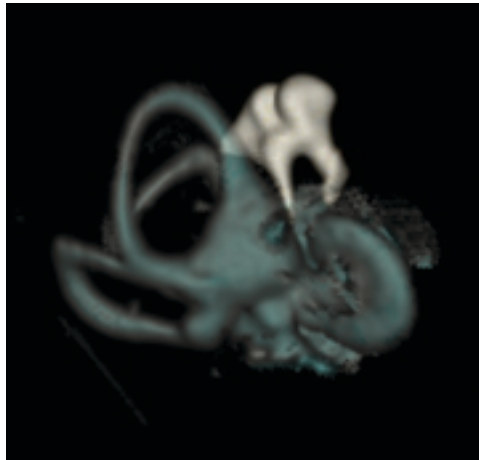
Guiding interventions for less complex cases? GE's SmartStep tap mode lets you complete simple procedures efficiently and accurately.



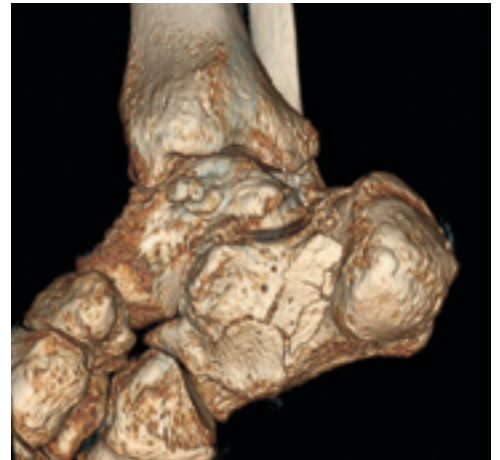
From head to toe.



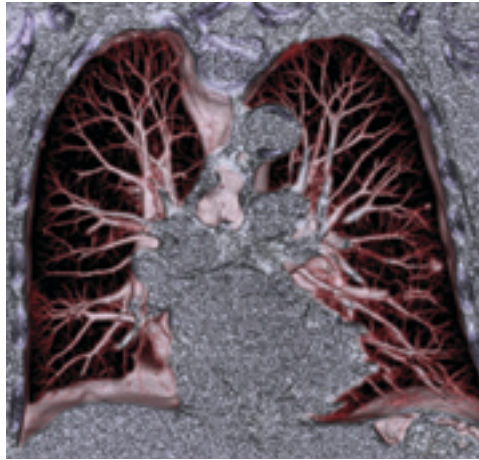
Head: Differentiate white from gray matter with excellent low-contrast detectability with the HiLight detector and Volara DAS image chain components.



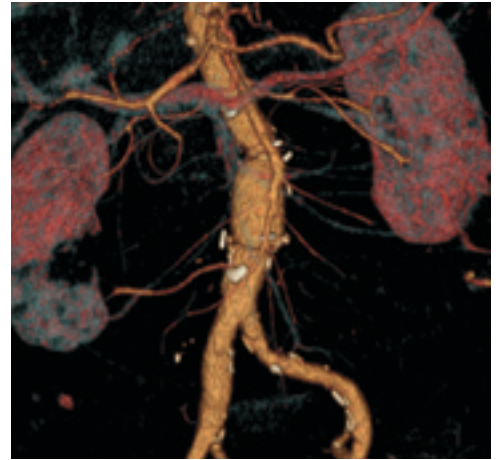
Inner ear: Isotropic voxel shows superb semicircular canals imaging.



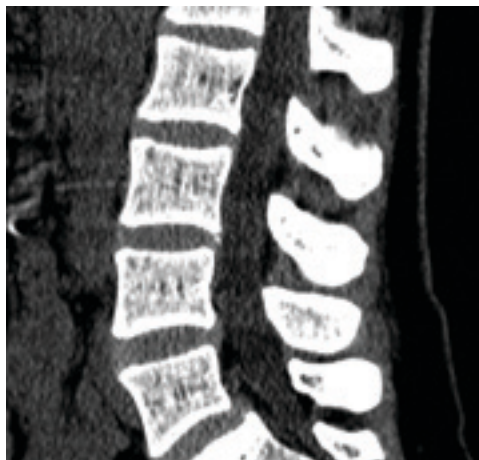
Extremity / Trauma: Assess fractures in detail in 2D and 3D with high spatial resolution.



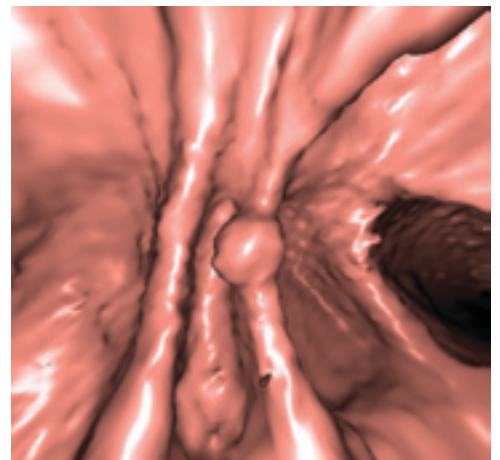
Chest: The IQ Enhance algorithm provides both high acquisition speed and spatial resolution, while the chest kernel facilitates your timely Thoracic exam review.



Abdomen/pelvis: Enjoy high flexibility on protocol acquisition (bi-phasic liver acquisition, urology, and pancreatic studies).



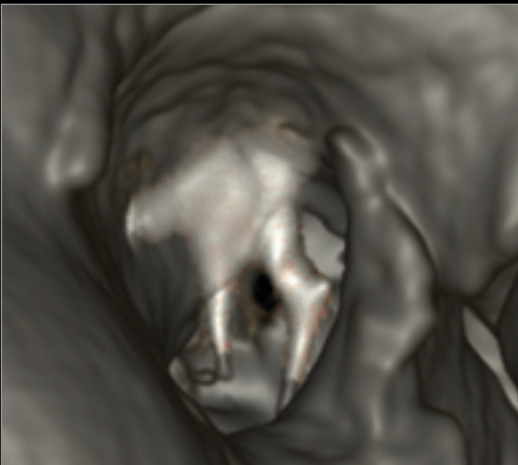
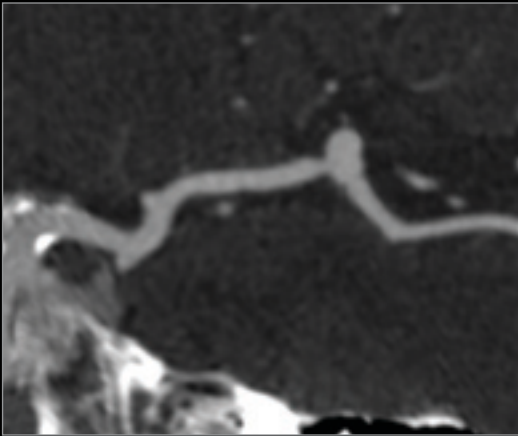
Lumbar: Use helical data for detailed assessment of intervertebral discs with customized protocols for the different spine locations in one exam.



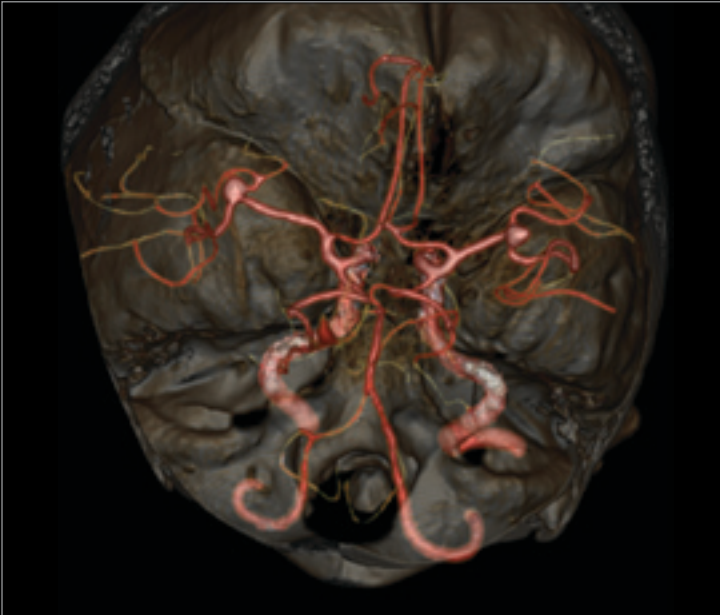
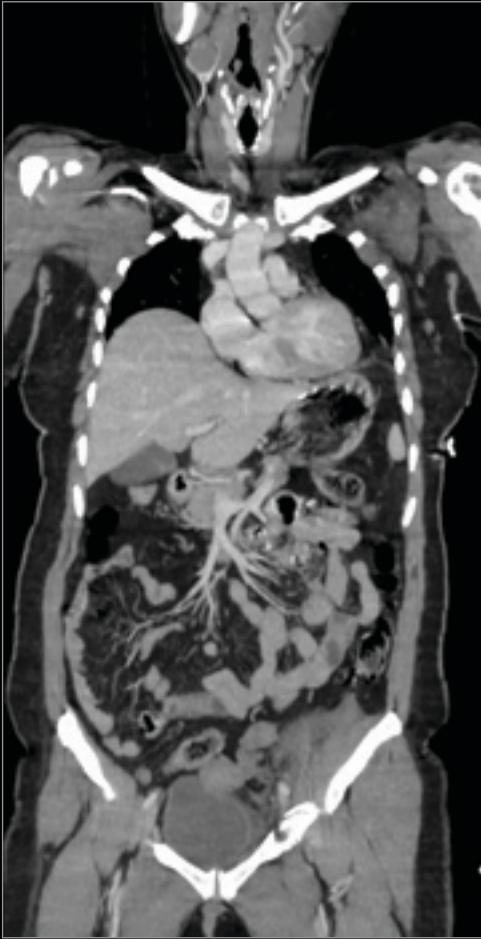
Colon: Optima CT520 can enable a full colonic study, and allows you to fly through the colon for polyp detection.



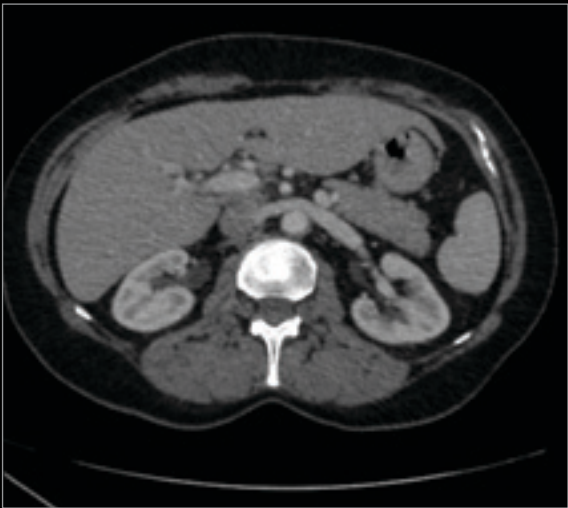
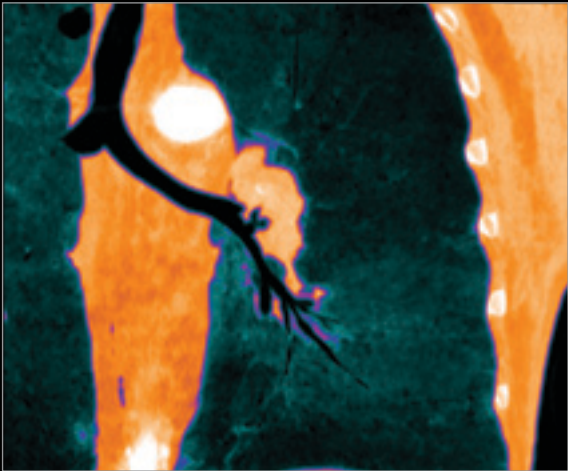
Spatial Resolution



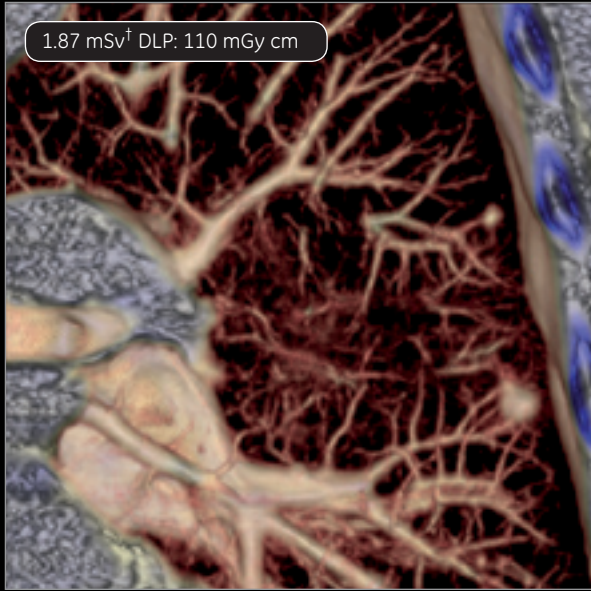
Acquisition Speed



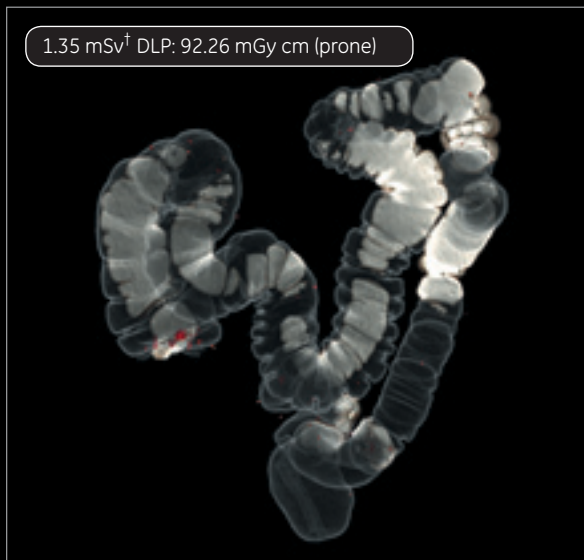
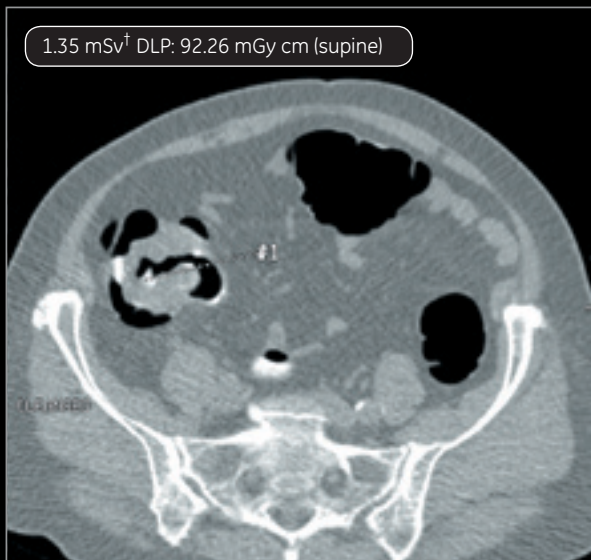
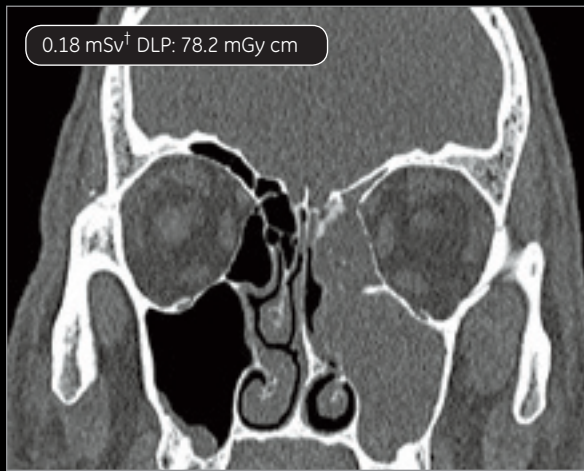
Power and Performance



Dose Optimization



[†]Obtained by EUR - 16262 E, using following factors:
Head: 0.0023[†] DLP
Chest: 0.017[†] DLP
Abdomen: 0.015[†] DLP
Pelvis: 0.019[†] DLP



Incorporating advanced dose-reduction technologies and features, the Optima CT520 allows you to lower dose—without compromising the diagnostic information contained in the images.

Optimize with Optima.



A proven leader in dose-reduction technologies, GE continues to develop important dose-optimization features and make them available across platforms. The Optima CT520 provides many tools to help the clinician manage dose, while achieving clinically diagnostic image quality.

ASiR

Typically, dose reduction causes an increase in noise (pixel standard deviation) and image artifacts. But GE's industry-breakthrough Adaptive Statistical Iterative Reconstruction (ASiR) solves this by subtracting noise, not merely masking it. ASiR also delivers enhanced image quality by improved low-contrast detectability (LCD). The result is better patient care with a dramatic reduction in dose of up to 40% with no loss of image quality.



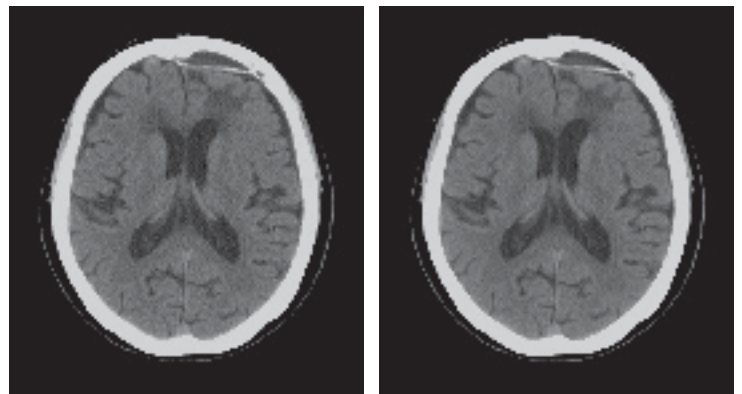
ASiR extracts noise by modeling its root system statistical causes, allowing for low-dose scanning across anatomies and patients while preserving image quality.

^{††} In clinical practice, the use of VISR 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.

When ASiR is installed, 3D Neuro filter will be disabled.

VISR

Volumetric Image Space Reconstruction (VISR) provides a 3D filter that reduces noise without compromising resolution, for clear visualization of brain, tumor, and pediatric cases. With the VISR 3D filter, the scanner delivers up to 20% image quality improvement at the same dose, or the same image quality with up to 36% dose reduction.^{††}



VISR reduces dose up to 36% without compromising image quality.

Optidose

The Optidose features allow you to actively manage dose across exam types.

- 3D dose modulation automatically adjusts the mA as you scan along the x-y-z axes. The modulation maintains CT image quality, via a noise index to optimize the mA to only what is needed to deliver the image quality you choose.
- Pre-patient collimation blocks x-rays not needed for the image and optimizes the beam width to improve geometric dose efficiency.
- Bowtie beam-shaping filter used in the scanner maintains more uniform X-ray at the detector, minimizes surface dose, and reduces X-ray scatter.
- Color-coded pediatric protocols provide intuitive management of pediatric exams, categorizing children into one of eight colored categories based on their weight and size to help clinicians select the right-sized scan technique.
- Easy-to-archive DICOM-structured dose report is generated after every scan, providing dose parameters and a clear summary of how the procedure was performed.

Raise your CT IQ.

Optima CT520 incorporates the best technologies from previous GE platforms—most notably the innovative algorithm, IQ Enhance. Other smart features such as the Volara* 24-bit Digital Data Acquisition System (DAS) and Direct MPR help improve image quality and data management efficiency. Combining power, spatial resolution, and dose-optimization tools, Optima CT520 delivers exceptional image quality and highly efficient imaging—even in regions such as the inner ear, lungs, and bones.

Speed of a 50-slice CT

Who says you have to sacrifice image quality for speed? Optima CT520 with IQ Enhance helps improve the speed versus image quality balance. IQ Enhance reduces helical artifacts in thin-slice helical scanning to increase coverage, improve image quality, and reduce dose delivered to the patient by using a higher pitch. It lets you scan at coverage speed equivalent to that of a CT with a 50-slice detector. From head to toe, you get high-quality images across a wide range of clinical applications.

Efficient imaging

Optima CT520 collects cubic data sets of the smallest practical volume, delivering remarkable images in 3D and multi-planar reformatting (MPR)—20-mm coverage with 0.625-mm isotropic cells. For resolution as small as 0.35 mm in all directions throughout the body—reproduced at anytime and in all planes.

The Optima CT520 image chain is powered by GE's exclusive Volara* DAS, which delivers high processing power for high-resolution images and low-dose performance. It reduces noise up to 33%, for outstanding image quality, even in difficult areas such as the shoulders and hips, and in large patients. DAS also reduces noise in low-contrast, soft-tissue body and neuro studies, and in pediatric exams.

But acquiring data is just the first step. Fast image reconstruction with transfer speeds up to 16 fps and Direct MPR help you quickly manage and assess large datasets with ease—for pulmonary embolism, trauma, CT angiography, and more.





Building a powerful, yet affordable CT scanner begins with designing a more intelligent machine.



Go with the workflow.

Real-time Scout image is displayed in real-time during the scan. By stopping the scout acquisition when the necessary anatomy is covered, you help patients avoid unnecessary X-ray exposure.

SmartPrep software offers real-time contrast tracking. Scanning is automatically triggered when the IV contrast enhancement value meets user-defined thresholds.

Flexible Filming Workflow provides more layout choices, so you can choose the number of images on each film or even customize the film layout as needed. You can also edit films for multiple patients in parallel and print them together in one batch.

Emergency scanning mode helps you launch and finish emergency exams faster than normal CT procedures. Technologists can set up exams with easy-to-understand symbols and automatically position the bed using the touch screen and foot pedal.

The patient can be scanned in a few minutes. Simultaneous image acquisition, reconstruction, and analysis also accelerate the workflow. Anatomy-specific protocols provided on the operator console make review more efficient.

Xtream Injector interface sets injector device parameters automatically and can synchronize scans and injections, minimizing the opportunity for user error. Protocols can be pre-programmed using injection set-up screens, which are fully integrated into CT protocols.

Delivering the latest workflow innovations, Optima CT520 is designed with the user in mind. By streamlining workflow, technologists and radiologists can complete exams with ease and confidence.

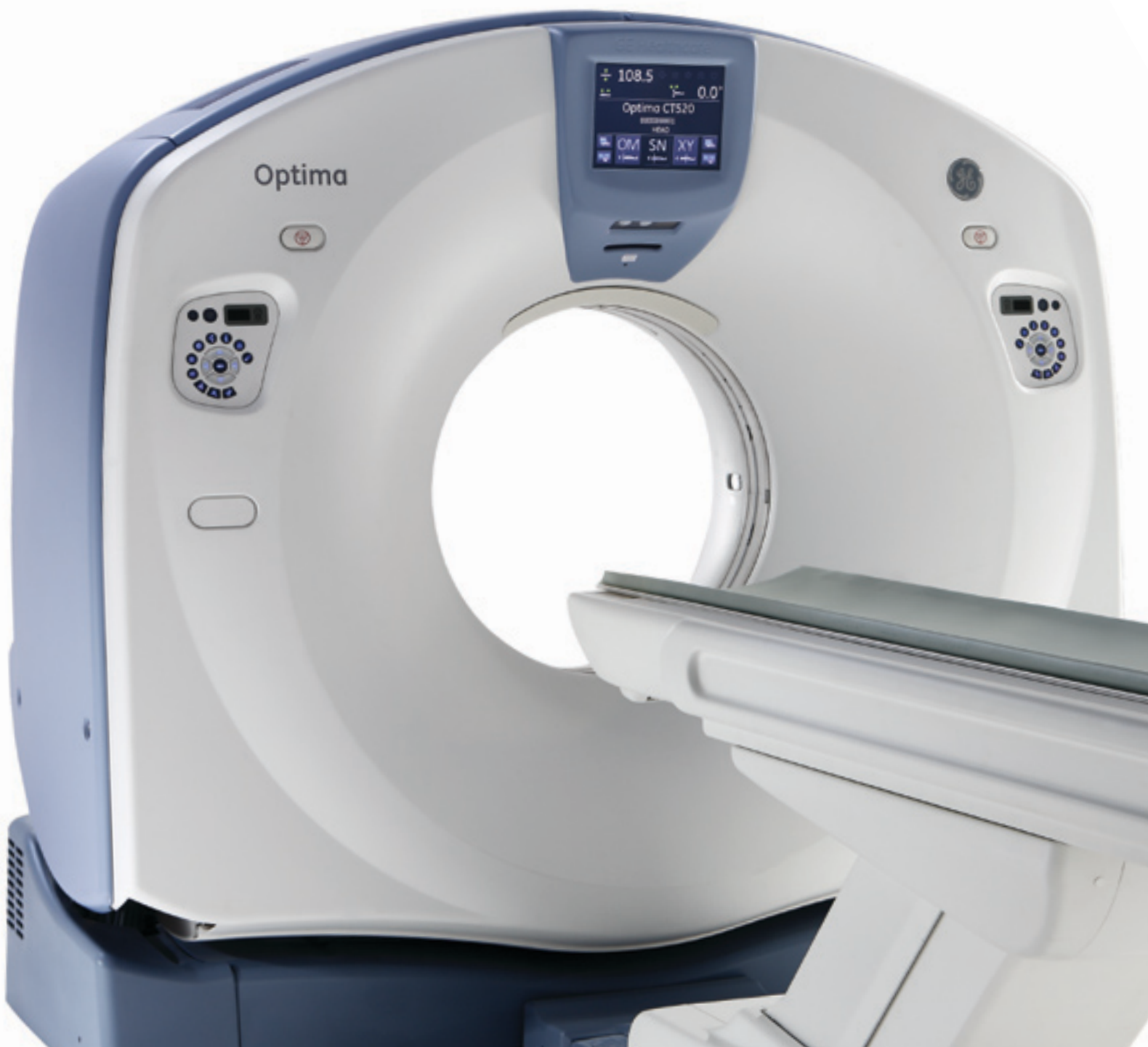
Comfort zone

With its new ergonomic-minded design, the Optima CT520 helps your patients and technologists find their comfort zone in a more patient and operator oriented environment.

- Autopositioning allows the technologist to simply push a button to choose a position for a specific exam, so staff can focus on the patient.
- Auto voice system gives instructions in the patient's own language.
- Patient table. In the low position, the exam-table makes access easy for senior patients, patients on emergency beds, or patients in wheelchairs.
- Xstream display allows technologists to personalize exams by displaying the patient's name on the 12-inch touch screen gantry display. A video of relaxing scenes or cartoons helps calm children or patients of all ages.



Small footprint.
Big comfort.



With one of the smallest footprints on the market, the Optima CT520 fits your available space in even small rooms. It fits easily almost anywhere—even in the same space as some single-slice systems.

But even with its small size, the Optima CT520 delivers outstanding comfort and flexibility—whether your technologist prefers to sit or stand. The console is noticeably quieter and delivers less heat. And the same familiar interface, available on our most advanced CT systems, puts automated processing at the technologist's fingertips. The console also features SmartPrep, Autovoice, and easier protocol settings.

Optima CT520 is not only more efficient for technologists, it's more energy efficient, too, using about 60% less energy than our previous-generation scanners. With a thoughtful overnight "sleep" mode and electronic designs, it uses less energy both when operating and inactive. For a big impact on the environment—and your bottom line.

Get more done while barely lifting a finger

The Optima streamlines workflow every step of the way, from acquisition to reporting. By simplifying and accelerating image acquisition, this easy-to-use system puts more work at the technologist's fingertips. The following tools help keep workflow moving and speed the time to get to the diagnostic read.

Advanced Vessel Analysis provides a innovative 3D enhanced lumen tracing and a complete package of flexible measurement tools for assessing and quantifying vascular structures, including stenosis analysis, stent planning, post-stenting, and vascular surgery follow-up.

Autobone Xpress provides fast, one-click segmentation of bony structures.

CT Perfusion Neuro assesses tissue through quick, quantitative analysis of blood flow disturbances in the brain, including cerebral blood volume, cerebral blood flow, and mean transit time.

CT Perfusion Multi-organ processes dynamic image data of organs and tumors and shows changes in image intensity over time.



Advantage CTC Pro allows quick, accurate, and non-invasive colon examinations, with customizable, synchronized reading workflow of prone and supine views for shorter read times.

DentaScan imaging software provides oblique and panorex images and real-time image reformation for planning dental implants and orthodontic surgery.

Integrated Volume Viewer merges together clinical information from several modalities to provide a complete set of images—enabling fast and effective post processing.



ConneCT from anywhere.

Dexus is a seamless workflow environment that optimizes your reading experience and productivity, from the moment you acquire your image until you report your results. Dexus links imaging devices, clinical applications, and IT, so you can access advanced visualization tools across modalities and care areas from wherever you are.

Now you can remotely review and share images in real time, for closer collaboration with internal clinicians, stronger referring physician partnerships, more confident diagnoses, and better patient care. Simply put, Dexus brings you what you need, when you need it, where you are, whoever you work with.





Built on the trusted GE AW and Centricity platforms, Dexu takes your reading workflow to a new level of efficiency. AW Workstation and AW Server provide a portal to a broad portfolio of robust, easy-to-use clinical applications. AW Server converts virtually any PC, laptop, or PACS desktop to a 2D, 3D, or 4D post-processing workstation. By streamlining imaging techniques and post processing, Dexu answers productivity needs across CT, MRI, SPECT, and Interventional.

GE Healthcare offers a number of innovative technologies and education opportunities to ensure that your Optima CT520 will meet the needs of your CT practice long into the future.

Meeting the needs of your practice today— and tomorrow.

Remote capabilities speed service

Our field service engineer network is backed by digital services and remote capabilities that help you maximize uptime, simplify access to service, and get the best from your CT scanner.

Your Optima CT520 scanner comes with a broadband connection that lets GE service engineers diagnose problems and fix your system—often without having to visit your site. Built-in self-check systems connect your CT scanner directly to our technical centers. Our online services allow us to resolve most issues and provide you with the complete status of your system.

When a site visit is needed, your field engineer arrives with knowledge and tools to resolve the issue. Replacement parts identified proactively and ordered through remote services typically arrive even before your field engineer so you can stay on schedule.

Help is one touch away

GE iLinq* provides you with a direct connection to GE Healthcare support. At the touch of a button on your console screen, iLinq lets you quickly summon technical or applications help—saving you precious time. And when you contact us with an urgent concern, we connect you to an engineer in five minutes or less.

Getting the most out of your assets

To help maximize efficiency and productivity, GE's iCenter gives you on-demand access to critical information about your Optima CT520 and other imaging devices. Vital information is delivered to your desktop—scanner utilization, open work orders, service history, and much more—empowering you to make sound operating decisions.

Learning tools to fit your needs

A wide range of available learning tools help your imaging professionals use the advanced imaging capabilities of the Optima CT520 to their full clinical potential. Taught by CT experts, our CT Masters Series includes a comprehensive range of courses in advanced CT applications and the latest technologies.

Our AppsLinq* service provides a live clinical application support and training solution, delivered remotely. This customized, cost-efficient solution delivers the necessary education to imaging operators while fitting their busy schedule. A GE clinical application expert connects remotely to your system and shares control of the screen with your people, seeing exactly what they see and interacting with them in real time to build confidence in their new skills.

For application support, the TiP Virtual Assistant provides your staff with interactive real-time training and support right on the console from a dedicated and experienced team of application specialists.



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About GE Healthcare:

GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care. Our broad expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, performance improvement, and performance solutions services helps our customers to deliver better care to more people around the world at a lower cost. In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

Our “healthymagination” vision for the future invites the world to join us on our journey as we continuously develop innovations focused on reducing costs, increasing access, and improving quality around the world. Headquartered in the United Kingdom, GE Healthcare is a unit of General Electric Company (NYSE: GE). Worldwide, GE Healthcare employees are committed to serving healthcare professionals and their patients in more than 100 countries. For more information about GE Healthcare, visit our website at www.gehealthcare.com

GE Healthcare
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GE imagination at work