GE Healthcare

Optima* CT520

Personalized CT solution

Broader vision.

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

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

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

Short geometry design improves X-ray utilization.

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.

At GE 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, Xtream Integrated Injector, ASiR,* VISR, SmartView Fluoro, Optidose, Volara DAS, and more.

Built on reliable and proven technology, 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.

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.

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 Xtream 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.

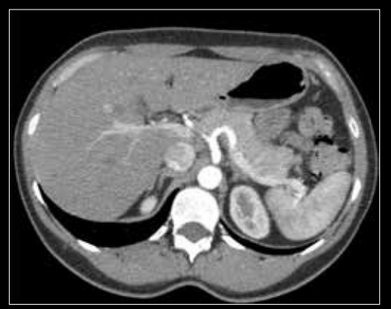
Optima CT520 enables you to see anatomy and lesions clearly and understand the diagnostic landscape more thoroughly, with optimized dose. High-quality images, streamlined workflow, fast acquisition speed, and dose optimization help you detect and evaluate small lesions and follow them over time, or provide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

ASiR delivers reduction in radiation dose with no compromise in image quality[1]. 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.

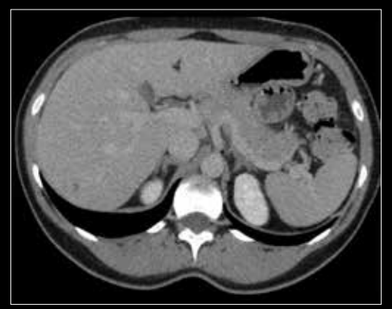
IQ Enhance's outstanding spatial and low-contrast resolution allows a detailed study of arterial vascular disease, including calcified plaque and occluded or lumen reduction.

1.75 pitch booster allows you to complete chest-abdomen-pelvis in 12 s at low dose. Fast acquisition speed allows you to complete chest-abdomen-pelvis exams consistently in short breath holds, even on non-cooperative patients and children.

Arterial phase



Synchronized comparison, portal phase



Slab recon with volume rendering

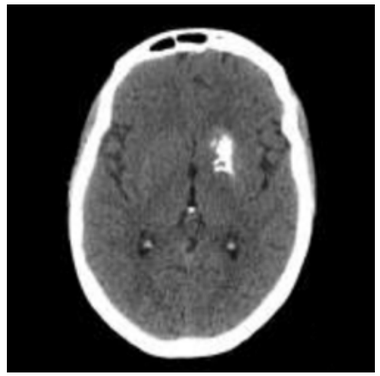
Fresh perspective.

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

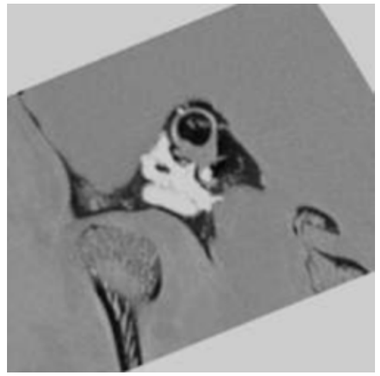
SmartView Fluoro combines advanced visualization techniques with real-time reconstruction and display. A nominal image lag of only 0.20 second gives you the confidence you need for CT-guided interventions, such as core, lung, and retroperitoneal lymph node biopsies; drainage procedures; pain management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



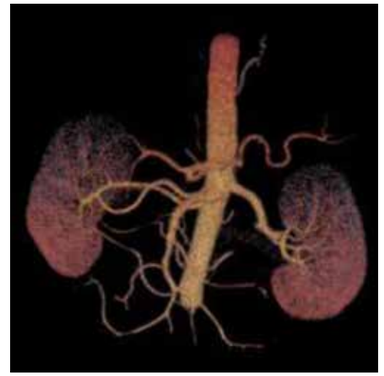
Head: Differentiate white from gray matter with excellent low-contrast detectability with the HiLight detector and Volara DAS image chain components.



Inner ear: Isotropic voxel shows superb semicircular canals imaging.

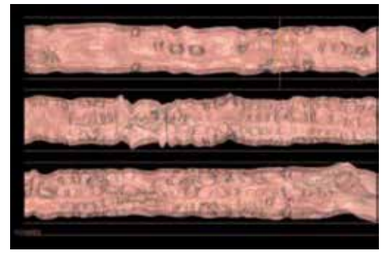
Extremity / Trauma: Assess fractures in detail in 2D and 3D with high spatial resolution.

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



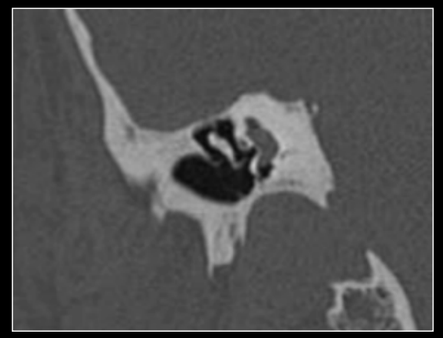
Abdomen/pelvis: Enjoy high flexibility on protocol acquisition (bi-phasic liver acquisition, urology, and pancreatic studies).

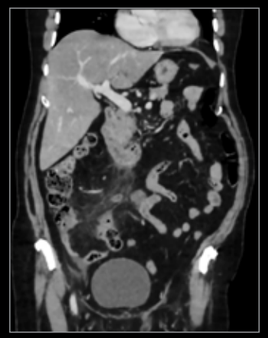
Lumbar: Use helical data for detailed assessment of intervertebral discs with customized protocols for the different spine locations in one exam.



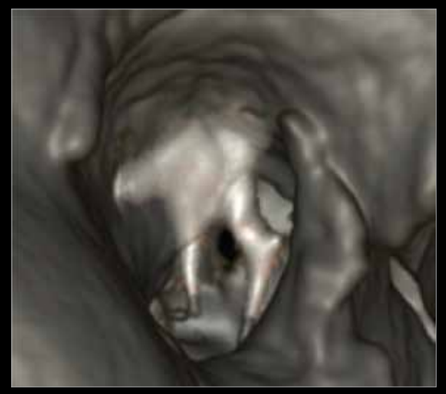
Colon: Optima CT520 can enable a full colonic study, and allows you to fly through the colon for polyp detection.

Spatial Resolution







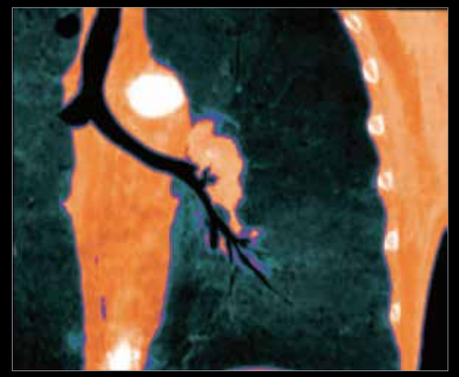


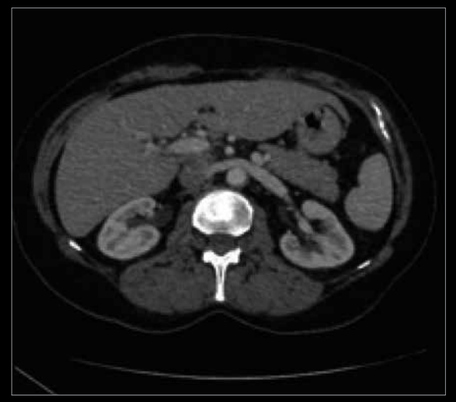
Acquisition Speed



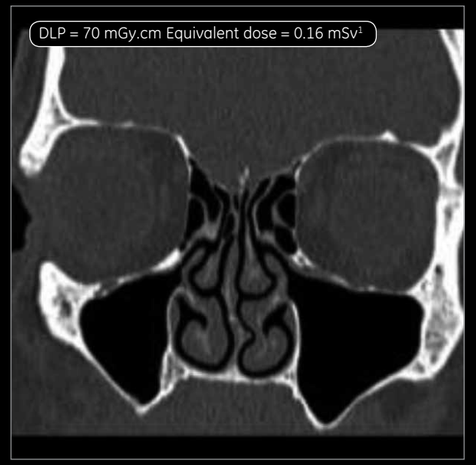


Power and Performance



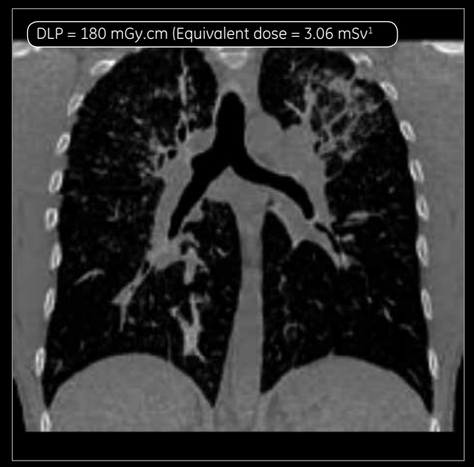


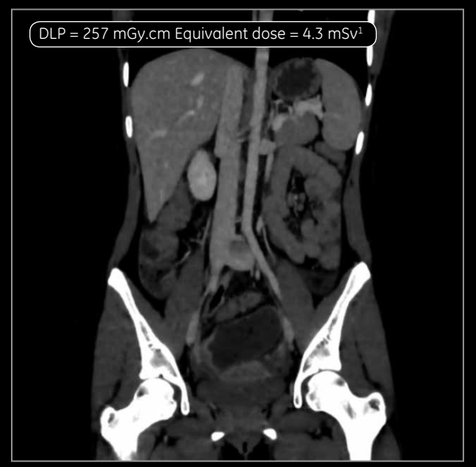
Dose Optimization



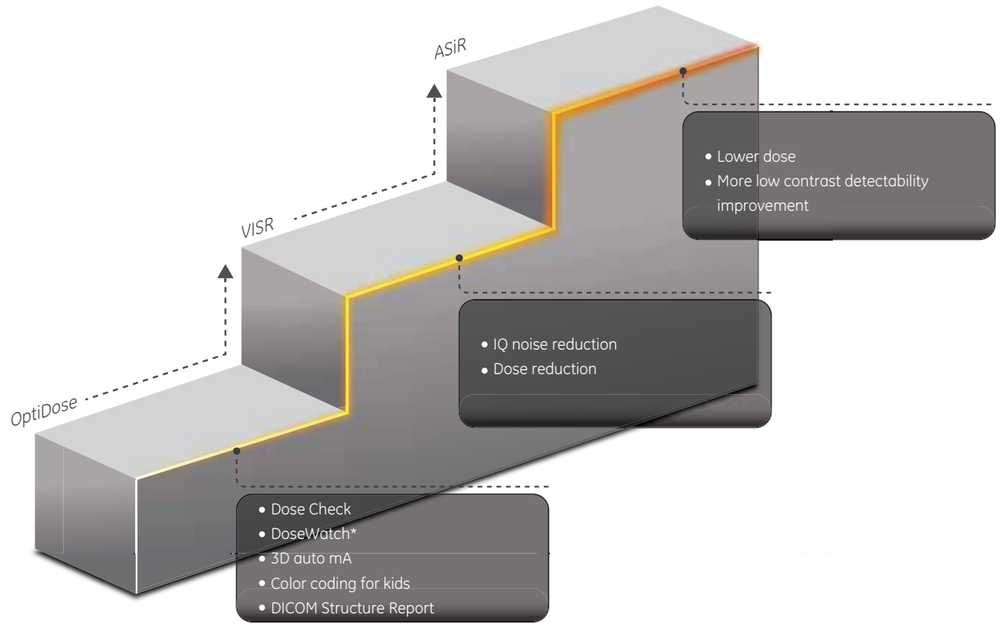
[1]Obtained using the following factors:

Head: 0.0023 DLP
Chest: 0.017 DLP
Abdomen: 0.015 DLP
Pelvis: 0.019 DLP





Helping you to lower dose.



ASiR inside.
A leap ahead in dose management

ASiR may help clinicians achieve dose reductions while delivering the diagnostic image quality needed for confident diagnosis. It may also improve low contrast detectability[1]. ASiR changes the dose paradigm across many anatomies and patients. Based on customers' experiences using ASiR technology, excellent diagnostic image quality at low dose has been demonstrated across exam types and body regions.

VISR

Volumetric Image Space Reconstruction (VISR) are 3D filters that reduce image noise (standard deviation) without compromising spatial resolution to provide clear visualization in neuro and cardiac imaging, to deliver diagnostic image quality with potentially lower mA[2].

OptiDose

Dose reduction with ASiR is combined with GE Healthcare's proven OptiDose technologies that deliver dose reduction at the source.

It includes 3D modulation, which automatically adjusts the mA as you scan along the x-y-z axes. Pre-patient collimation to block x-rays are not needed for the image, optimizing the beam width to improve geometric dose efficiency. Color-coded pediatric protocols provide intuitive management of pediatric exams, categorizing children into one of eight colored categories based on their weight and size so clinicians can select the right-sized scan technique. The easy-to-archive, DICOM Radiation Dose Structured 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.

You have a complex & fast-paced workplace.

Ready

- **Patient table** lowers to each individual patients' needs
- **Auto positioning** for desired table settings
- **Xtream display** plays relaxing videos for your patients
- **Emergency mode** with dedicated user interface to start exam quickly

And More...

Scan

- **10 sets of** prospective multiple reconstructions for rapid reconstruction algorithm set up
- **Real-time scout:** stop acquisition once necessary anatomy is covered
- **Integrated injector:** synchronize with the exam workflow
- **SmartPrep with Auto Trigger:** the scan can be automatically initiated when contrast enhancement reaches the preferred point
- **IQE** pitch boosting rechnology

And More...

Done

- **Direct MPR:** real-time direct reconstruction and fully corrected multi-planar images
- **AWE connection:** from your console, access applications hosted on the server
- **22 images per second** reconstruction speed
- **Advanced applications** on console

And More...

We give you a simple & efficient workflow.

Small footprint.
Big comfort.

With one of the smallest footprints in its category, 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, 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 with advanced technologies at your fingertips

Optima CT520 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 an 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 helps you assess 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 allows you to process 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.

Mobility

AW

Advanced visualization powered by AW.

Beyond post-processing image efficiency, AW provides a comprehensive solution to optimize your Optima CT520 experience

Clinical relevance is the main driver of GE Healthcare's post-processing software

Since 1990, improvements in the company's offering have led to a robust and constantly-enriched foundation-coming directly from the modality's latest innovations. Today it provides a unique and consistent multimodality 2D, 3D, and 4D environment, placing patient pathology in the center. On top of this foundation is GE Healthcare's large portfolio of vascular, cardiac, oncology, and neurology advanced applications, that enhance scanner capacities to provide accurate assessments.

Clinical relevance without system interoperability means nothing

With significant dose reduction, CT scanners can increase body exploration capacities. Additionally, the volume of data is growing fast and managing it becomes time-consuming and complex. That is why AW ensures deep integration with medical equipment-CT, MRI, PET-CT, Vascular-and your RIS and PACS systems. Because communication alone is not enough, AW provides Workflow Booster, an automatic case preparation and preprocessing tool.

Unleash the power and access it from anywhere

Complex pathologies may require teamwork and expertise sharing-inside or outside of your facility. GE Healthcare's client server model, AW Server, complements the traditional AW workstations, offering a centrally-managed, post processing engine accessible from any PC or Mac[1] staff meeting, radiologist office, or outside if allowed[2].

[1]Following systems are supported: Windows® XP, Vista, Windows 7 & Windows 8, AW Workstations, Mac® (using Windows Parallel).
[2]IT team needs to configure appropriate access to server from outside the facility.

GE offers a number of innovative technologies and education opportunities to help 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.

www.gehealthcare.com

GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality and more affordable healthcare around the world. GE (NYSE: GE) works on things that matter - great people and technologies taking on tough challenges. From medical imaging, software & IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

imagination at work

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[1] In clinical practice, the use of ASiR 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. ASiR reconstruction algorithm demonstrates the same image standard deviation performance at 40% lower dose. When maintaining the same dose level as a non-ASiR acquisition, the low contrast detectability can be improved by up to 12% with 60% ASiR or up to 20% with 100% ASiR. In clinical practice, the actual level of LCD improvement may vary. Consult with a radiologist and a physicist.

[2] In clinical practice, the use of VISR may enable reduction in 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, VISR will be disabled.

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