Visionary techniques
Visible results
Body MR
Body imaging is one of the fastest-growing areas in MR. Of all imaging modalities, MR delivers the most comprehensive insights on anatomy, tissue, and function.

Imaging the body with MR can be a challenge, though. That’s why core GE MR imaging techniques are designed to enhance clinical confidence, patient comfort, and workflow efficiency in your routine, everyday body scans.

GE Healthcare Body MR is designed to give you the visionary techniques you need to capture visible results today—and secure your growth tomorrow.
Visionary techniques. Visible results.
The core four.

T1: LAVA or LAVA Flex
T2: PROPELLER 3.0 or FSE
DWI: eDWI
MRCP

A portfolio of techniques that brings new power and precision to your core Body MR imaging.

And helps you make more confident clinical decisions.
**LAVA Flex**
Obtain four image contrasts with greater SNR\(^1\) in a single, fast, one-breath-hold acquisition.

LAVA Flex is a 3D FSPGR imaging technique that generates water-only, fat-only, in-phase, and out-of-phase echoes in one single acquisition, typically completed in a single 20 s breath-hold. This innovative technique provides 3D images with excellent homogeneous fat suppression over the entire field of view, including difficult-to-image areas.

**LAVA**
Shorter scans with no misregistration.

Offering excellent coverage and reliability, the LAVA 3D FSPGR acquisition offers a single breath-hold scan with 2D acceleration to shorten scan times for faster exams. LAVA optimizes the waveform for short TE/TR, and utilizes an ARC 2D self-calibrating parallel technique to help eliminate misregistration.

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**LAVA Flex:** Fatty liver disease at 3.0T
*Courtesy: Seirei Hamamatsu General Hospital, Japan*

**LAVA Flex:** Metastic ovarian cancer at 3.0T
*Courtesy: St. Joseph Hospital, Paris France*

**LAVA Flex** water image after IV injection showing Crohn’s Disease with homogeneous fat suppression
*Courtesy: St. Joseph Hospital, Paris France*

**LAVA Flex pelvis scan at 1.5T**
*Courtesy: Hull University, UK; Sharp and Children, USA; University Hospital, Wales; St Joseph, France.*
PROPELLER 3.0
Combat patient motion, flow, and susceptibility artifacts anywhere.

PROPELLER 3.0 significantly reduces the effect of patient voluntary and physiologic motion such as breathing, flow, and peristalsis, while also reducing magnetic susceptibility artifacts. Compared to conventional MR imaging techniques, PROPELLER 3.0 generates virtually artifact-free images with fine anatomic detail and excellent tissue contrast—all in a free-breathing acquisition and in about the same scan time as conventional T2 acquisition.

FSE
Capture morphology in great detail.

Fast Spin Echo provides excellent 2D image quality in efficient scan times.

Cube
Scan once then view any way you want.

High-resolution volumetric T2w pelvis scans with Cube can be reformatted to the desired planes for further evaluation.

 Courtesy: St. Mary’s, UK; Creil, France; La Sapienza, Italy; Hull University, UK and CHU Bichat, Paris France.
Enhanced DWI
Designed to boost SNR, shorten scan times, and generate an accurate ADC.

The enhanced Diffusion Weighted Imaging (eDWI) technique is designed to provide high signal-to-noise ratio diffusion images of the liver in short-acquisition times. eDWI supports multiple b values in one acquisition with flexible control of NEX for each b value. Novel diffusion techniques, 3in1, and tetrahedral allow applying gradients in multiple directions to improve scan efficiency and signal-to-noise ratio.  

Hypointense region in T2w FSE image (left) corresponds with area of restricted diffusion in the overlaid ADC map (middle). Same region demonstrates positive signal enhancement in dynamic LAVA Flex scan (right).

Courtesy: St Joseph, France; Laveran Military Hospital, France; Hull University, UK; and Yokohama Sakae Kyosai Hospital, Japan.
MRCP
Assess the biliary tract and pancreatic duct in high resolution.

A 3D FSE acquisition technique, MRCP is ideal for the high-resolution, volumetric assessment of the biliary tract and pancreatic duct. ASSET and an optimized pulse train reduce T2 blurring, and a very long TE is utilized for background suppression and bright fluid visualization. Automatically generated MIPs simplify workflow. Respiratory triggering facilitates high-resolution imaging while breath-hold mode allows a rapid assessment.

Color rendering of the MRCP MIP image
Courtesy: Qilu Hospital, China; Tokyo Nishi Tokushukai Hospital, Iwata Municipal Hospital, and Nagoya Radiological Diagnosis Foundation, Japan.

3D MRCP provides excellent depiction of the biliary tree and pancreatic duct and allows volumetric assessment.

These powerful, visionary techniques help you capture better images for a confident clinical assessment.
Stretch your vision far past the routine.

With GE’s exclusive MR-Touch and IDEAL IQ, you have in your hands a pair of advanced, visionary tools to help you grow beyond routine Body MR—and toward better early disease assessment and management.

MR-Touch
Accurately identify liver stiffness variations.

MR-Touch is a GE MR Elastography-based imaging technique that helps evaluate stiffness variations in liver tissue. Non-invasive, rapid, and radiation-free, MR-Touch has the potential to aid early detection and help evaluate the whole organ for diffuse and focal liver diseases.

Studies have shown that MR-Touch works well in patients with obesity and ascites, both common conditions in chronic liver disease populations.
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IDEAL IQ
Non-invasively quantify fat content in the liver.

Delivering volumetric liver coverage in a single breath-hold, IDEAL IQ provides a non-invasive, quantitative assessment of triglyceride fat content in the liver. This is a patient-friendly and cost-effective solution. A 3D gradient multi-echo acquisition, IDEAL IQ differentiates between triglyceride fat and water content, while correcting for confounding factors.

Improve early disease assessment by providing a non-invasive triage for biopsies.

10-year-old patient with abdominal pain; biopsy confirmed severe steatohepatitis with severe fibrosis

Patient with diabetes and dyslipidemia (TG=1022) treated with plasmapheresis

Courtesy: Dr. Scott Reeder, University of Wisconsin, Madison, Wisconsin, USA.
From qualitative to quantitative.

Body MR is moving toward objective, quantitative assessments to evaluate disease progression over time. GE helps expand your scope of clinical assessments—from just anatomy, to function, flow, tissue composition, and metabolics. From 2D to 4D, with contrast uptake dynamics. From diagnostic exams to therapeutic studies.

And Body MR is easily incorporated into a multi-modality approach for even greater diagnostic and therapeutic value.

**MR-Touch**

In this 16-year-old patient with polycystic ovary syndrome (PCOS) and non-alcoholic steatohepatitis (NASH) related to PCOS-associated insulin resistance, MR-Touch and IDEAL IQ images reveal elevated liver stiffness and significant fat deposition at 31%. Biopsy results confirmed severe steatohepatitis with mild fibrosis.

**IDEAL IQ**

Integrated Registration

Using Integrated Registration tools, you can align and synchronize 2D, 3D, and 4D images and parametric maps generated on diverse modalities, as shown in this image of MR anatomy fused with PET metabolic function.

**StarMap**

StarMap provides non-invasive, reproducible visualization of iron content in the liver, to aid in assessing iron overload.

*Courtesy: University of Wisconsin, Madison, Wisconsin.*

**MR Spectroscopy**

MR Spectroscopy provides a non-invasive way to determine tissue composition for increased specificity. This PROSE map demonstrates a low citrate level in the region of the tumor compared to the contralateral side.

*Courtesy: Kitasato University Hospital RA Caminos.*
Simple from plan to scan.

A more comfortable exam for your patients.

Wide bore offers greater access and comfort. The 70 centimeter wide bore with 50 centimeter field-of-view helps make MR scans more accessible to claustrophobic, pediatric, and obese patients—without compromise.

Detachable Express patient table speeds throughput. Fully prepare patients for exams outside the scan room on the detachable Express patient table with up to 500-lb weight capacity. Save valuable time by transferring patients once to help reduce anxiety and boost scanner productivity.

Flexible GEM Suite embraces patients in comfort. Geometry Embracing Method (GEM) Suite of coils can be used individually or combined to provide desired anatomical coverage for 98 percent of all exam types, with a total 205 cm, head-to-toe coverage. Unlike conventional “one-size-fits-all” coils, these high-density coils are so flexible that the elements naturally follow patient body contours, staying close to the target anatomy for uncompromised image quality.

Take body imaging to a whole new level:
- GEM Anterior Array provides 54 cm S/I anatomical coverage, taking advantage of the magnet’s FOV capabilities
- Embedded GEM Posterior Array provides 120 cm high-density total coverage
- System automatically enables elements in the posterior and anterior array based on the prescribed FOV

• Uncompromised 50 cm FOV allows large coronal coverage in one take, especially important for imaging large patients

These lightweight open coils are designed to be more comfortable for patients and easier for technologists to use:
- A comfort tilt feature elevates the coil to further improve patient comfort

In-room control streamlines studies. The iROC (In-Room Operator’s Console) consolidates patient, system, and scan information and operator controls in one scanner-mounted display that’s easy to see and use from both sides of the table.


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A more streamlined study for your technologists.

IntelliTouch strips pinpoint patient positioning. Easy-to-use IntelliTouch strips help enable fast, accurate landmarking and patient positioning. Simply press the IntelliTouch strip at the landmark location, then press the Advance to Scan button to move the patient into the bore.

Auto Voice guides patient breathing. Auto Voice provides breath-hold instructions in the patient’s native language, during scanning. Create new or modify existing messages to fit the patient’s needs.

Automate workflow with linking. Linking provides automatic graphic prescription by propagating slice locations throughout the entire protocol, allowing you to focus on the patient.

- Variable-density foam table padding cushions key pressure points, so patients remain relaxed and still.
- Feet-first imaging for all anatomies allows patients to keep their heads out of the scanner for as long as possible.
- Geometry Embracing Method (GEM) Suite benefits the radiologist, the patient, and the technologist alike.
Body MR is easier than you think.

Comprehensive training to get you going.

**GE MR Applications Webcast series.**
GE Healthcare launched the MR Application Webcast Series. These live webcasts feature medical and industry experts and address topics of interest to you and your MR imaging department. All sessions are free and post-event archived sessions are also available.

**The GE Healthcare Institute.**
Receive hands-on training on a GE MR system in a state-of-the-art clinical setting at our dedicated educational facility.

**TIP’ Virtual Assist.**
Combining expertise and convenience, live, interactive applications training with remote GE trainers helps you get the most from your GE MR scanner.

**Master Series Physicians Training.**
Through GE Healthcare’s MR Masters Series Physicians Training, you learn the latest MR applications and techniques directly from world-renowned radiologists.

**eFlexTrials.**
With GE’s online eFlexTrial program, you can select the latest clinical applications from our growing online library and take them on a 30-day test drive—free. Software upgrades made easy.

**Global applications specialists.**
GE applications specialists are available worldwide to train you on GE MR applications, techniques, and protocols.

**Extensive online resources.**
From case studies and clinical notes, to protocols and software downloads, our online MR community at gehealthcare.com/mr puts a wealth of resources at your fingertips.
Service and support to keep you scanning.

Industry-leading service.
GE supports your system with one of the industry’s largest, most highly trained service forces. Rated #1 in Overall Service Performance by IMV ServiceTrak†, our field engineers are rigorously trained to help ensure proactive monitoring, reliability, and uptime.

InSite* remote diagnostics and repair.
Thanks to our InSite, a constant data connection to your GE MR system lets us monitor, diagnose, and repair your system remotely.

On-demand digital service support.
Push the iLinq* button and instantly contact a live GE applications specialist or service engineer. Right answers. Right now. Right from your console.

Remote magnet monitoring.
Our exclusive, remote monitoring of your magnet’s overall health helps you avoid unnecessary downtime.

Parts distribution centers worldwide.
Located in numerous countries around the globe, GE spare parts distribution centers streamline part delivery to minimize downtime.

Outrun obsolescence.
Our exclusive MR Continuum* is the promise that your system won’t become obsolete—thanks to the ability to upgrade your scanner to future technology without replacing your magnet.

†IMV ServiceTrak** is a leading independent third-party research firm and owner of AuntMinnie.com
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.

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