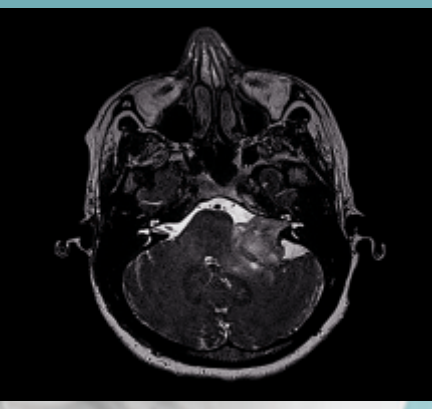
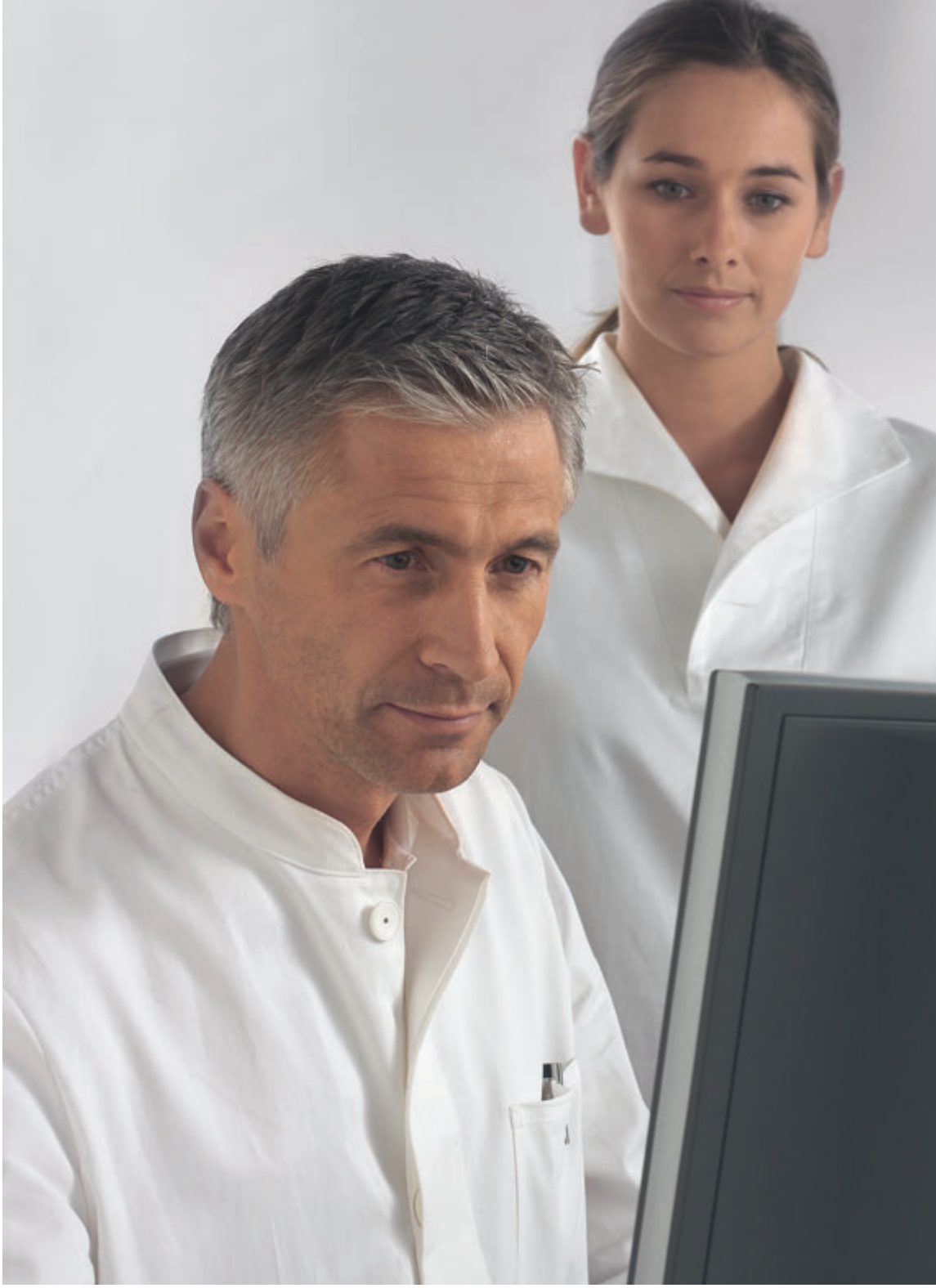




Get the most out of **Tim**

with *syngo* MR B13

SIEMENS
medical

www.siemens.com/medical

Around the world, Tim (Total imaging matrix technology) has become the new standard in MRI. With hundreds and hundreds of installations, Tim is proving it every day, with unprecedented flexibility, accuracy and speed. Let Tim prove it to you, too.

- **Flexibility: Select exams, not coils.**

[102 x 32] Up to 102 seamlessly integrated matrix coil elements and up to 32 independent RF channels combined to create one Total imaging matrix. A Matrix scalable to both the anatomy under examination and the individual patient size. Also scalable to 8-, 18-, or 32-channel RF technology. This is how Tim redefines flexibility.

- **Accuracy: Local and total.**

Matrix coils unleash the high SNR only local coils provide. Extreme precision for single-organ exams up to whole-body exams. From 5 mm to 205 cm FoV. Without coil or patient repositioning. For all applications. With up to 100% more SNR. This is how Tim redefines accuracy.

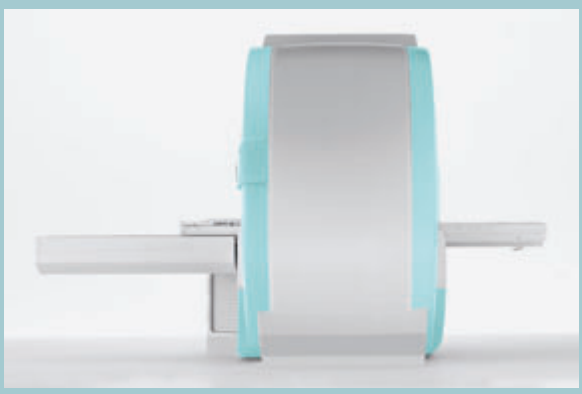
- **Speed: Parallel in all directions.**

Head to toe, front to back, and side to side for unlimited Parallel Imaging. Up to PAT 16. Even for double oblique slice orientation. Without restrictions in coverage. With the high SNR of standard Matrix coils. This is how Tim redefines speed.

Tim

is changing MRI forever.

MAGNETOM Systems



MAGNETOM Trio, A Tim System
Unmatched 3T clinical performance

The first 3T system with Tim. The ultimate choice for hospitals and health systems seeking to bring advanced applications that were once the domain of research into daily clinical routine. With PAT factors up to 16, MAGNETOM Trio with Tim is the ultimate dual-purpose machine.

MAGNETOM Avanto
Leading applications

The world's first Tim system. The ultimate system for hospitals with a comprehensive and advanced application range. MAGNETOM Avanto enables unsurpassed 1.5T image quality, streamlined workflow and remarkable patient throughput.

MAGNETOM Espree
Unprecedented patient comfort

The first Open Bore MR with Tim. Combines CT-like patient comfort with powerful 1.5T image quality for a less intimidating MRI experience for all types of patients. MAGNETOM Espree is the ideal system for diagnostic imaging centers or health institutions looking for a competitive advantage.

MAGNETOM Symphony, A Tim System
Join the Revolution

MAGNETOM Symphony and Tim – a perfect combination of patient friendliness and fast scanning capabilities. Tim, Total imaging matrix, is a completely new – yet clinically proven technology. This Tim upgrade provides a unique opportunity to integrate the latest technology into your MAGNETOM Symphony.

Work less and accomplish more?

Today, of course. Get the most out of Tim. With *syngo* MR B13.
Increase your referral base and throughput with reduced acquisition time and faster workflow with the new *syngo* MR B13, hardware and software. Enjoy high speed imaging and reconstruction techniques without compromising diagnostic image quality. *syngo* MR B13 is the perfect complement to the Siemens unique Tim (Total imaging matrix) technology.

syngo MR B13 brings you new applications to broaden your diagnostic offering and ensure higher revenue, today and in the future. These include *syngo* **SPACE**, **SWI**, **REVEAL**, **BEAT** and **BLADE**.

In addition, *syngo* MR B13 increases your efficiency. For example, Inline Technology virtually eliminates post-processing steps, allowing better patient care and more patients per day. And, with *syngo* Expert-i you can access the MR suite remotely (from within the network) without having to physically go there.

With the new computer MCPro Multi 2, Tim reaches its full potential with reconstruction processes up to twelve times faster. Imaging with high resolution, multiple coil elements and Parallel Acquisition Techniques (up to a speed factor of 16) is routine today and the MCPro Multi 2 provides you with the extremely fast reconstruction that support your Tim workflow. Tim knows no boundaries.

All of this is now possible with the new *syngo* MR B13 delivered with the new Tim systems.
Got an Evolve* contract? Then many of these functionalities are included in your migration path!

*In the event that upgrades require FDA approval, Siemens cannot predict whether or when the FDA will issue its approval. Therefore, if regulatory clearance is obtained and is applicable to this package, it will be made available according to the terms of this offer.

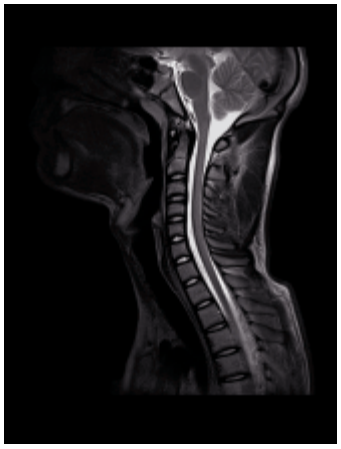
Transform clinical dreams into clinical routine?

Today, of course. Powered by Tim.
***syngo* MR B13 introduces leading-edge applications and workflow benefits into your clinical routine. These new features improve diagnostic confidence and save valuable time when it is needed most, while the patient is still at the MR suite. No more calling the patients back, no more wasted table time costing you time and money. Take a closer look at the exciting new application and workflow features *syngo* MR B13, powered by Tim, has to offer.**

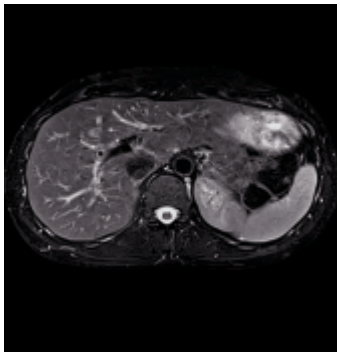
How often do patients move during their MRI exam? Wouldn't it be nice if you could scan them in all circumstances with excellent image quality?

Now you can. *syngo* **BLADE**, capable of robust imaging in neurological, orthopedic and body procedures, even in cases of severe movement. The *syngo* BLADE motion correction increases patient throughput and decreases costs. Medical professionals can reduce sedation rates in pediatric and anxious patients and still get high-quality images for diagnosis. *syngo* BLADE measures and corrects motion. This provides clear images in all slice orientations and body regions such as the head, spine, liver or knee. On Tim systems, *syngo* BLADE benefits from the use of Tim Matrix coils, which are all iPAT (integrated Parallel Acquisition Technique) compatible. It reduces scan time, thereby reducing motion artifacts even further!
syngo BLADE. Powered by Tim.

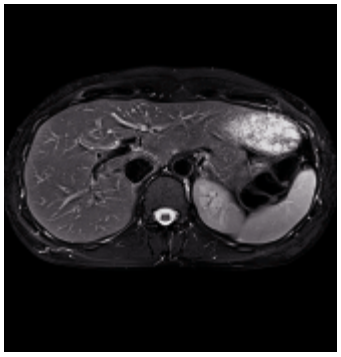
T2 Axial
Without *syngo* BLADE



syngo BLADE



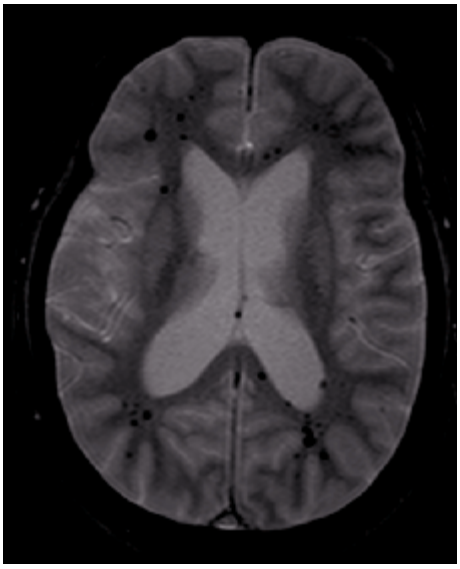
T2 Axial
Without *syngo* BLADE



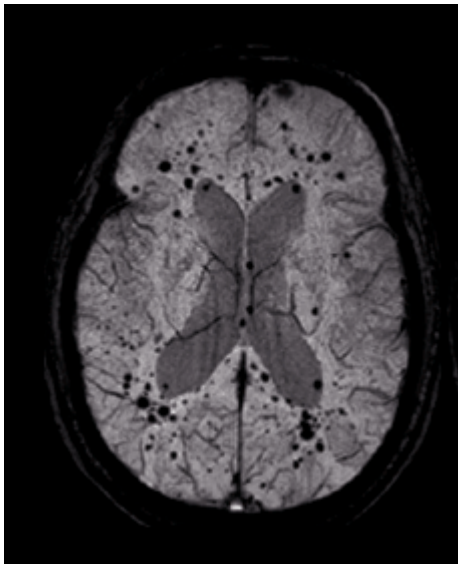
syngo BLADE

Do you ever examine neurological trauma patients with MRI? Is the detection of microhemorrhages, shearing or diffuse axonal injury sometimes difficult?

In a matter of minutes, *syngo* **SWI** (Susceptibility-Weighted Imaging) increases detectability of subtle bleeding in the brain, without x-ray or iodinated contrast. Helping physicians diagnose and better define the type of stroke they are dealing with, or rule one out. *syngo* SWI has also shown promising results for occult vascular disease, trauma, hemorrhage, enhanced detection of tumors and much more.
syngo SWI is a new type of contrast in MRI different from spin density, T1 or T2 imaging. It exploits the susceptibility differences between tissues and is extremely sensitive to deoxygenated blood present in blood products or in the vascular system.
Thanks to Tim's 12-channel Matrix coil and iPAT capabilities (integrated Parallel Acquisition Technique), *syngo* SWI can now be done in under 4 minutes exclusively on Siemens MAGNETOM systems, powered by Tim.



T2* Axial
Without *syngo* SWI



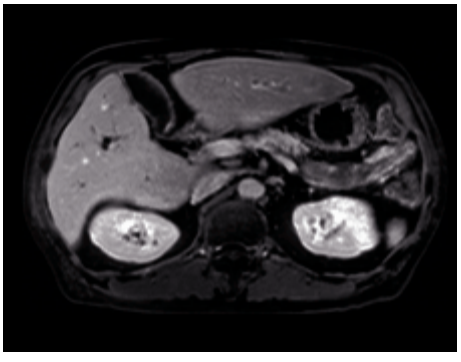
syngo SWI

Do all of your patients have straight spines or do they differ with age or scoliosis?

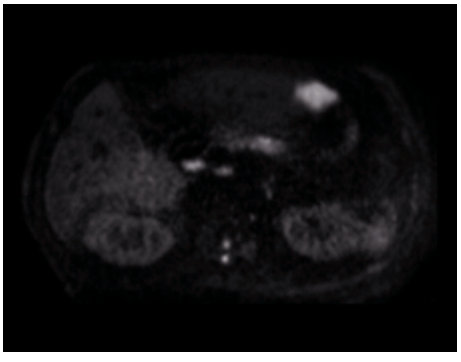
Imagine reconstructing a scoliotic spine image with multiplanar reconstruction, a perfect sagittal slice and the axial images that go with it. Now you can. Until now, it has been possible to acquire only T1 contrast in 3D. Now, with *syngo* **SPACE**, you can get T1, T2, DarkFluid and Proton Density. High resolution, high signal-to-noise, thin slice 3D imaging for all body regions. This is the future of MRI. *syngo* SPACE replaces multiple, time-consuming 2D acquisitions with one 3D data set. This allows reconstruction in any plane. *syngo* SPACE is a 3D Turbo Spin Echo sequence utilizing a very long echo train and a variable flip angle evolution, optimized for different tissue types. The advantages are high speed, low Specific Absorption Rates (SAR) and sub-millimeter isotropic reconstruction in any plane. Tim's Matrix coil design provides high SNR, enabling high spatial resolution with excellent image quality. In addition, *syngo* SPACE can be combined with iPAT (the Siemens unique GRAPPA algorithm) and any Tim Matrix coil, dramatically reducing acquisition time for 3D acquisitions. *syngo* SPACE. Powered by Tim.

How many abdominal MRI exams do you do a day? Are hemangiomas sometimes difficult to evaluate?

Now you can. *syngo* **REVEAL** is ideal for assessing metastases, recurrences and post operative progress. It is recommended to be used as a complementary sequence to your standard protocols, adding only a couple of minutes to the entire examination – but improving your diagnostic confidence. It can also be used to differentiate between malignant and benign tumors in the liver, colon, prostate, and possibly the breast and lungs. *syngo* REVEAL can also support assessing lymph nodes infiltration.
All of this without the expensive use of MRI contrast agents. *syngo* REVEAL is an optimized, Echo Planar Imaging based diffusion-weighted protocol for the body. The contrast is based on the fact that the diffusion coefficients of either benign or malignant tumors change compared to normal tissue.
Tim allows for multiple body Matrix coils to be placed on the patient simultaneously allowing for greater body coverage and the iPAT capabilities greatly increase the speed and quality of the REVEAL measurements.
syngo REVEAL. Powered by Tim.

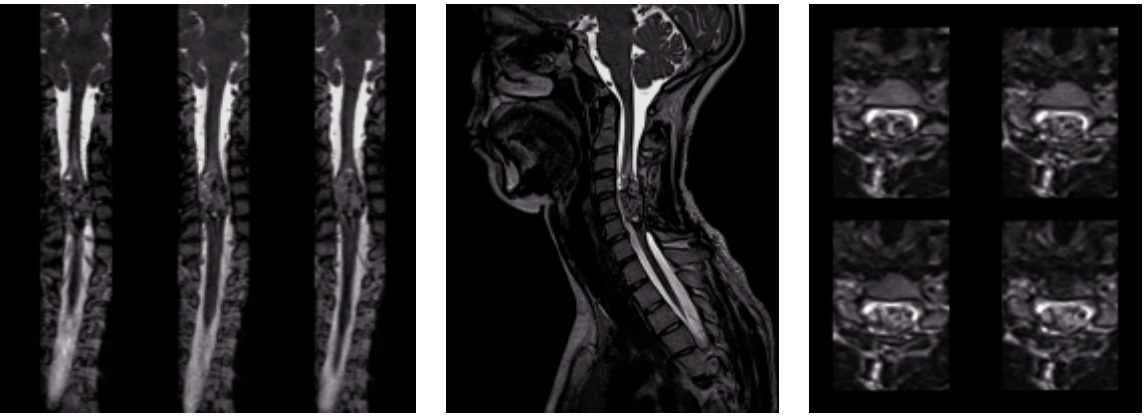


Post contrast



syngo REVEAL

Clear depiction of left lobe liver lession with REVEAL compared to contrast enhanced liver examination.

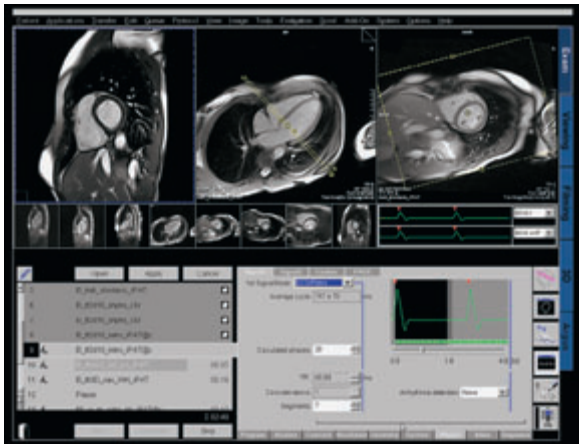


syngo SPACE
Sub-millimeter T2 saggital sequence. Allows for reformatting in any orientation.

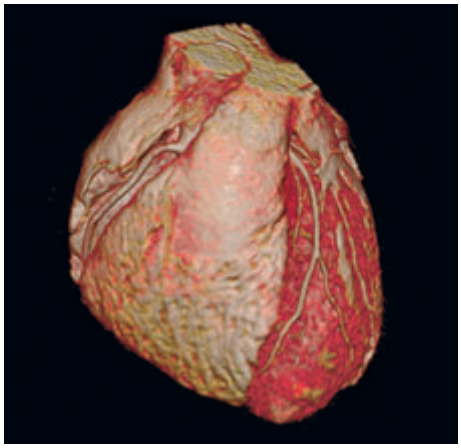
Why not increase your application offering and your referral base with Cardiac MR?

Now you can. *syngo* **BEAT** makes cardiac MR easy. Myocardial infarction, Chest pain, cardiomyopathy, congenital heart disease and EP (Electrophysiology) ablation planning often account for 80% of cardiac referrals. *syngo* BEAT is a Siemens unique tool that simplifies these cardiac MR exams dramatically. *syngo* BEAT combines morphology, function, tissue characterization and 3D coronary anatomy into one single tool. *syngo* BEAT allows the parameters of the cardiac MR exam to be changed on the fly. Change a 2D sequence to 3D with a simple mouse click or change from a breathhold to a free-breathing technique within the same sequence. IntelliScan automatically adopts the image parameters according to the heart rate and rejects data collection during arrhythmic heart cycles. Tim technology allows for iPAT (integrated Parallel Acquisition Techniques) in any orientation. This includes double oblique slides, resulting in the maximum speed needed for cardiac applications.
syngo BEAT. Powered by Tim.

With *syngo* MR B13 great results can be achieved. Now neuro, orthopedics and cardiac benefit from the Siemens leading-edge applications, exploiting the power of Tim.



syngo BEAT
Cardiac MR optimized user interface supporting the *syngo* BEAT tool. Image stamps for easy reference to previous localizers or sequences.



3D Volume rendered cardiac exam acquired with *syngo* BEAT. Showing nice delineation for the right coronary artery.

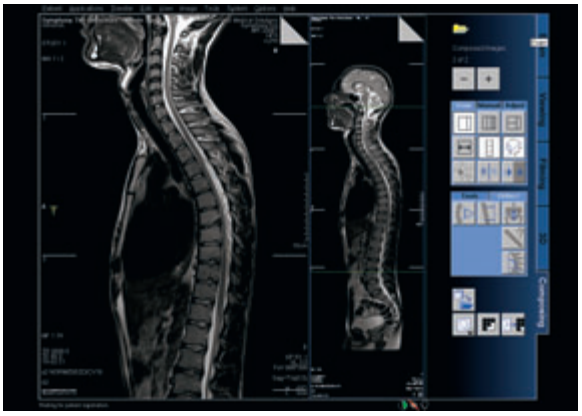
Optimize your workflow?

Today, of course. You live workflow. We deliver it. In the end, putting it all together and reporting is what really counts. And today's *syngo* does exactly that, better and faster than ever before. Repetitive work is reduced to the absolute minimum as diagnostic accuracy and confidence improve.

Save your time, Expert-i allows remote log in into the MR console for an expert user.

How often do you or others have to go review a case, before you know you can release the patient?

Now, with the power of *syngo* **Expert-i**, walking back and forth to the MR suite is history. *syngo* Expert-i allows users to log into the MR console from their own computer within the hospital network and advise which sequences to run, how to position slices on difficult cases and review exams for image quality. This can greatly improve your clinical workflow, saving time while ensuring that all patients get the best care.



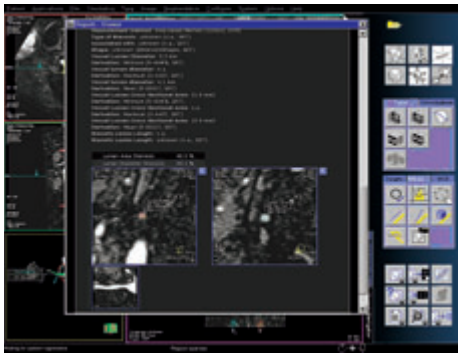
Composed whole CNS, for faster diagnoses from the total view into the details.

How many multiple spine exams do you read a day? T1 Cervical? T1 Thoracic? T1 Lumbar?

Double the total with T2 and, not forgetting the axials, you have at least nine separate sequences to review. Let Siemens make it faster and easier for you. With **Inline Composing** you can get your data sets automatically composed as one series. That means only one T1, one T2 and the axials instead of the original nine data sets. The same holds true for the peripheral angiography or whole-body angiography. Images are composed as one seamless image rather than piecemeal. Inline Composing runs on its own, eliminating the need to manually post-process spine imaging and more. Saving you valuable time to concentrate on other tasks. This is true workflow acceleration.

Why read, dictate, and report in a different environment?

Structured Report allows the integrated results for storage in DICOM and avi format for documentation. You will immediately have images and reports to send to your referring physicians. Saving you more valuable time.



Structured Report user interface for optimized reporting and documentation

Save money and time by DVD/USB burning?

With the new **DVD burning** functionality, you save money and time. *syngo* MR B13 enables you to store up to 25,000 images on a single DVD compared to only 4,000 at 256 x 256 matrix on a CD. READ and WRITE DVD-R Media with 4,7 Gigabytes are supported.

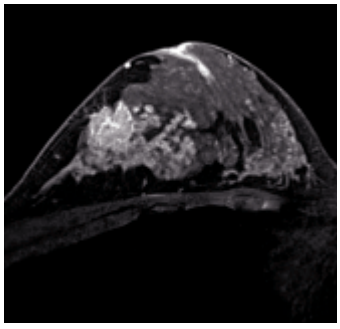
Do you enjoy presenting your work?

syngo MR B13 brings you the new **Camtasia**, making your life easier with the ability to record avi-files, or screenshots, add sound, and annotations. Camtasia is an easy and effective tool to prepare your next presentation and showcase your great Tim system results. *syngo* MR B13 enables the use of **USB memory sticks** as well as **USB harddisks** for fast read/write access for up to 400 GB to copy files. In conjunction with Camtasia you benefit from easy access to your DICOM images or avi-files for presentation purposes.

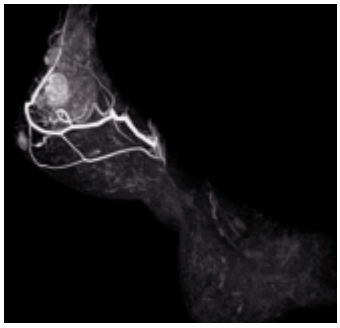
Streamline the examination?

Today, of course. We have made the MR technologists, life easier too. *syngo* MR B13 offers MR technologists additional features to improve workflow and ease of use. The Tim technology in combination with new Inline Technology functionalities and automated processes results in higher efficiency and shorter exam times.

The Breast and Scientific Suites are two new application suites designed for your convenience.



The **Breast Suite** has all you need: T1, T2, STIR and gradient echo imaging. The Siemens exclusive dynaVIEWS allows for fast 3D bilateral breast imaging with isotropic resolution.
With Tim's flexible coil combination, the Breast Matrix coil can be combined with additional loop coils to simultaneously evaluate the lymph nodes of the axilla.
Leadership in Women's Health.
Powered by Tim.

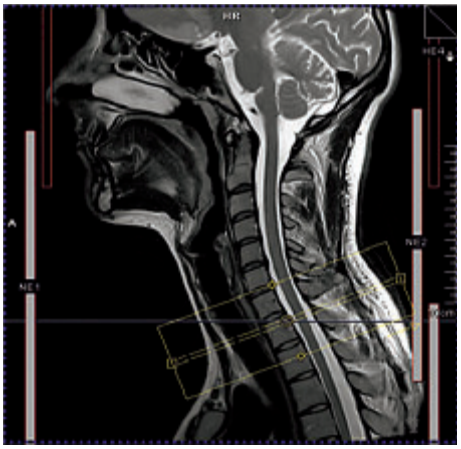


syngo VIEWS
Bilateral high resolution breast imaging allows for reconstruction in all orientations.

The **Scientific Suite** supports USB memory sticks, access to file systems via a secure and comfortable File Browser. Now you can make patient data anonymous and create avi-files and screen snapshots. Export tables, statistics and signal time courses to communal exchange formats like tabulated text files (Meancurve, Spectroscopy and DTI evaluation). Now that's scientific.

Would you like to have the best image quality, all the time - without having to even think about it?

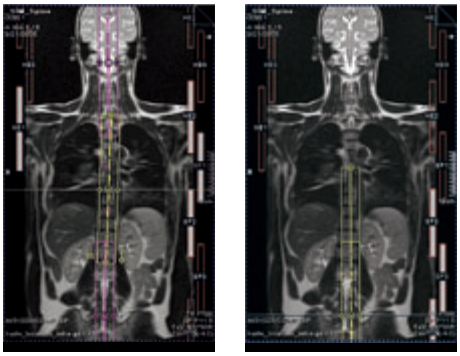
Now you can. **scan@center** automatically matches the center of your slice group to the isocenter of the magnet optimizing image quality in all measurements. Especially those using Fat Saturation because measurements are acquired where the homogeneity of the magnet is at maximum.
scan@center maximizes your image quality, without your worrying about it!



scan@center
Automated matching of the of the center of the slice group (blue line) to the isocenter of the magnet means maximized image quality – without user interaction.

Would you like your coils to select themselves? Now they can.

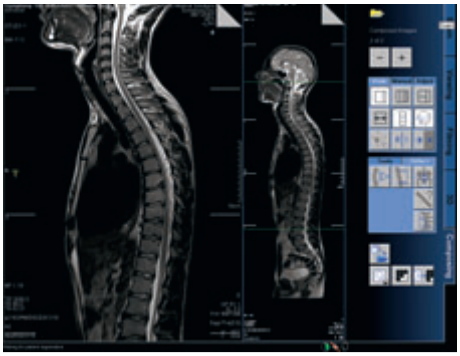
AutoCoil Select does just what it says. Imagine how easy it will be to scan a whole CNS study. No need to re-center over a specific vertebral body. As your patient moves in or out of the scan range, the coils will activate themselves as needed. All the Matrix coils of Tim are automatically activated by a single movement of the mouse. How's that for workflow?



Whole CNS imaging. With AutoCoil Select, just position slices and start the examination. Coils are activated as needed

Remember the thoracic counting procedure?

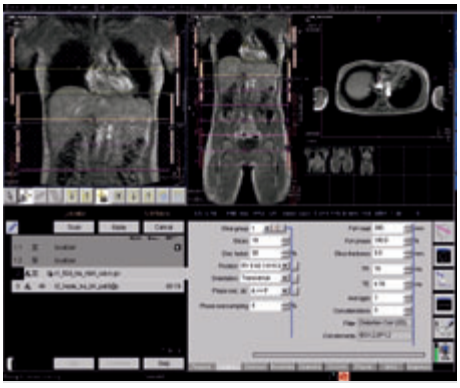
Those days are over: now you can see the entire spine, composed in one image, automatically with **Inline Composing**. Scan cervical, thoracic and lumbar and the image composes itself – automatically, directly after measurement. Inline calculation of full-format images of the spine, the CNS or the vessel tree are possible.



Automatically composed whole CNS images for faster and easier diagnosis.

Would it be nice to be able to set up an extended FoV examination in one go?

With the new **Tim Planning Suite**. Now you can. Tim Planning Suite is a dedicated user interface and exclusive tool for working on a large FoV. A large FoV you say. We mean more then 50 cm. Do you do a lot of peripheral MRA studies? How about head through lumbar studies? With the Tim Planning Suite, different regions of the entire body can be examined in a minimum amount of time through measurement planning on a FoV of any desired size. The different segments are displayed in one large image. Wouldn't this make your life easier? Now you can prescribe sequences and slices though out the entire scan region from head to toe.



Tim Planning Suite user interface for a fast and easy extended FoV set up.

***syngo* MR B13 new options:**

- *syngo* BLADE
- *syngo* SWI
- *syngo* REVEAL
- *syngo* BEAT
- Tim Planning Suite
- Inline Composing
- *syngo* Expert-i

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Or order your copy of MAGNETOM Flash, the Siemens MR magazine that presents product information, clinical methods, application tips, and technical information.

The continuous development of your skills, productivity and technology is what Life is all about.

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Proven Outcomes.

Proven Outcomes.
This is what Siemens is helping to deliver right now. Outcomes that result from truly efficient workflow. Outcomes that improve your bottom line. Outcomes that lead to a level of care that feels exceptional to the patient and the care provider. Proof positive of the value of integrating medical technology, IT, management consulting, and services. In a way that only Siemens can.

Results may vary. Data on file.

Acknowledgement:
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Eberhard-Karls-University Tuebingen, Germany
University Hospital Balgrist, Zuerich, Switzerland

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The required features should therefore be specified in each individual case at the time of closing the contract.

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