



**PHILIPS**

Ingenia MR-RT

MR Systems

**The comprehensive  
MR-sim solution  
to fit your planning**



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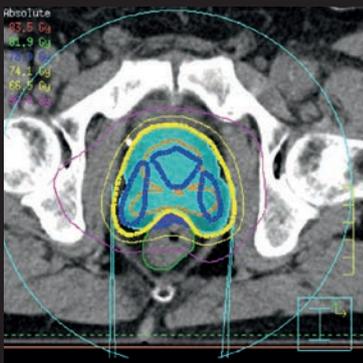
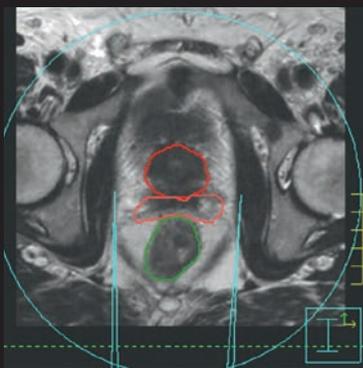
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# Experience the difference MRI makes

In today's oncology care, imaging for radiation therapy (RT) treatment planning plays a more important role than ever in helping you deliver outstanding care. Whether in external beam radiation, proton therapy, or brachytherapy, the key is to drive the precision of RT. When you can clearly see the target and organs at risk, you can support accuracy in delineation – and design the best possible treatment plans for your patients.

MRI is uniquely qualified to become a primary imaging modality to enable oncology specialists like you to address today's challenges, from diagnosis to therapy guidance and follow-up. Integrating MR imaging into your treatment planning workflow can harness the power of MRI and bring

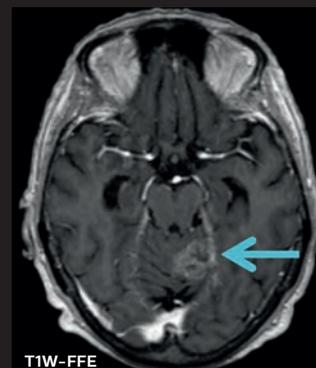
patient management to the next level. Take advantage of the excellent soft-tissue contrast that MRI offers, and zero in on what you need to see with a wide range of image contrasts and without radiation dose.



**Superb soft-tissue differentiation**  
Adding MRI to CT-based RT planning supports visualization and delineation of targets and critical structures.



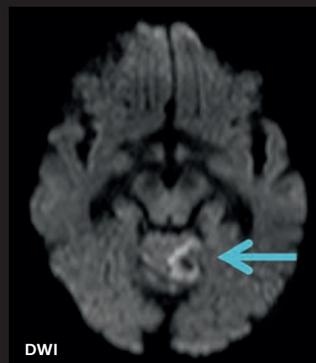
CT



T1W-FFE



T2W-TSE



DWI

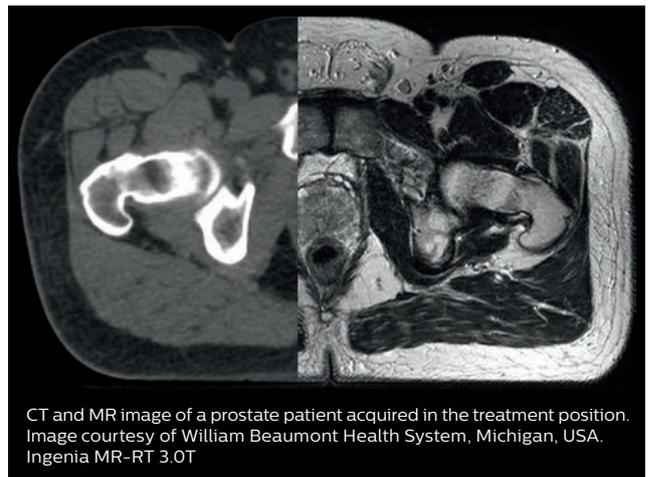
**Wide range of image contrasts**  
Enhance visualization of tumor contours with different contrasts.



# A comprehensive **MR-sim solution**

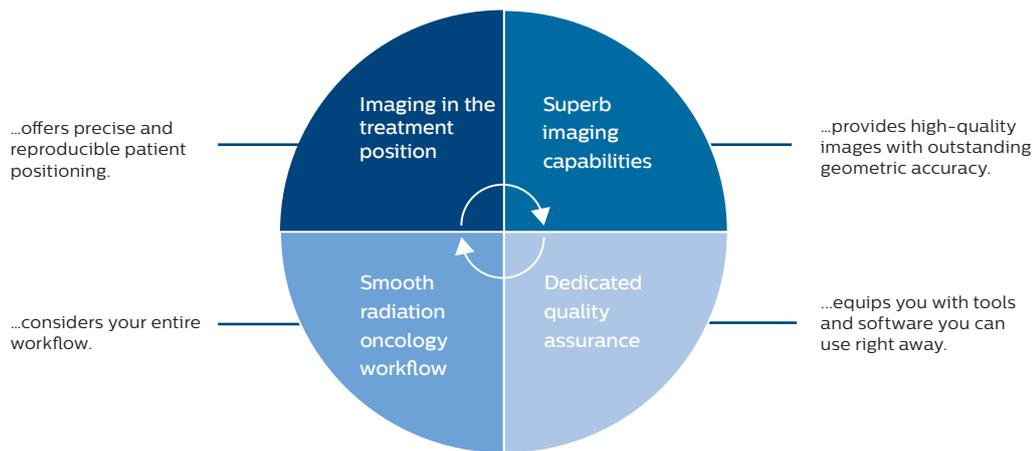
Diagnostic protocols don't often meet RT requirements. To integrate MRI smoothly into your CT-based workflow, you need a dedicated solution that's made for you. Featuring a wide-bore Ingenia 1.5T or 3.0T as its backbone, Ingenia MRRT is designed to provide high quality MR images acquired in the treatment position that can help you visualize targets and organs at risk. So you can support confidence in delineation and design the best possible treatment plans.

The state-of-the-art scanner is just the start. From its overall design down to the details, this comprehensive solution offers you the tools and software to work efficiently and with the precision and versatility you demand.



CT and MR image of a prostate patient acquired in the treatment position. Image courtesy of William Beaumont Health System, Michigan, USA. Ingenia MR-RT 3.0T

When you choose the Ingenia MR-RT, you're choosing a solution that...



## What makes the Ingenia such an outstanding MR system for radiation therapy?

It drives your clinical excellence with superb image quality:

- dStream digital broadband architecture helps reduce scan times.
- It offers the largest FoV (up to 55 cm) for a 70 cm wide-bore system.
- High, industry-leading gradient linearity supports excellent geometric accuracy.
- The advanced 3D Gradient Distortion Correction functionality lessens geometric distortion from residual gradient non-linearities.

And it's a dedicated platform for RT that allows you to bring a wide variety of MR-related therapies into your clinical routine, such as:

- MR-sim
- MR-only simulation
- brachytherapy
- follow-up monitoring



### Tap the real power of MR simulation

The Ingenia MR-RT platform keeps you connected to continuous innovation that helps you deliver high-quality care with financially attractive solutions.

Available as a plug-in extension to Ingenia MR-RT, **MR-only simulation** allows you to adopt a single-modality imaging approach for prostate cancer patients that provides excellent soft-tissue contrast you trust for target delineation - plus density information for dose calculations. Fast scanning protocols and embedded post-processing steps generate MRCAT (MR for Calculating ATtenuation) images on the MR console in just a few minutes with the density information you'd expect from CT.



# Position with precision

Highly targeted treatment plans rely on MR imaging performed in the patient's radiation treatment position. Every patient is different and requires a personalized plan. The Ingenia MR-RT is designed with this challenge in mind and enables versatile, reproducible patient positioning.

### A targeted approach: the MR-RT CouchTop

An MR-RT designed for MR-RT deserves a coucht top tailored to RT. The Ingenia MR-RT includes a flat, integrated CouchTop that replaces the diagnostic tabletop to enhance precision and drive clinical efficiency for dedicated RT imaging. Now you can position patients very close to the underlying FlexCoverage Posterior coil – without the distance added by a separate overlay. This frees up in-bore space for patient positioning while improving SNR for RT imaging.

Complete with indexing, the MR-RT CouchTop accommodates a variety of MRI-compatible immobilization accessories from leading vendors, including CIVCO, Orfit, and QFix to match your needs.

### The ideal complement: Anterior Coil Support

Guide image quality with the easy-to-adjust Anterior Coil Support. Freely slide the light-weight Anterior Coil Support to bring the Anterior coil close to each individual patient to improve SNR, without touching body's contours.

The support can be easily tilted and adjusted in height by a single operator. The spacious design makes maximum use of the bore space, providing plenty of options for patient immobilization, even in challenging cases. No matter how patients are positioned, the open frame structure allows laser projections from virtually any direction to the target area.



The spacious Coil Support brings the Anterior coil close to each individual patient.



The indexed MR-RT CouchTop accommodates a variety of immobilization accessories.



Intuitive to use, the Coil Support can be easily tilted and adjusted in height.



Type-S thermoplastic masks are mounted directly.



# See clearly in treatment planning

Dedicated RT imaging must deliver outstanding image quality – consistently and for multiple anatomies. Optimized MR imaging protocols and versatile coil arrangements on the Ingenia MR-RT work together to help you meet specific RT imaging requirements and scan a wide variety of patients.

## Enhance your view with customized ExamCards

Tailored for treatment planning, optimized MR imaging protocols are designed to provide images with high contrast and high geometric fidelity. These customized ExamCards are available on the MR console for main RT applications and boost the productivity of routine RT exams by executing complete imaging protocols quickly.

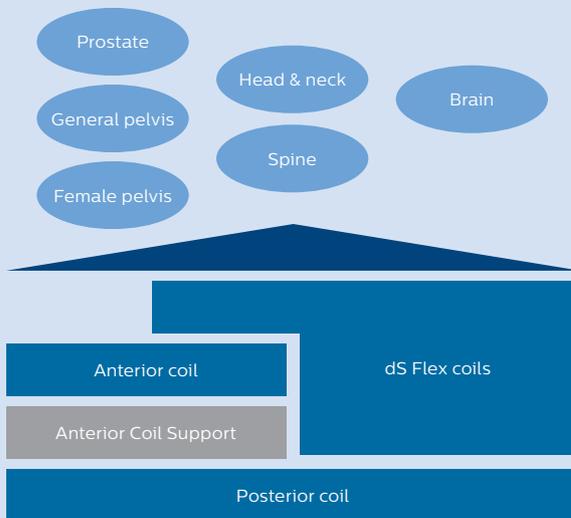
## Enhanced head and neck imaging

The thin, integrated MR-RT CouchTop brings special benefits to head and neck imaging. With a dedicated coil solution that intelligently combines a set of dStream coils, the Ingenia MR-RT brings 75% SNR increase in C-spine imaging (average, typical)<sup>1</sup> for MR simulation.

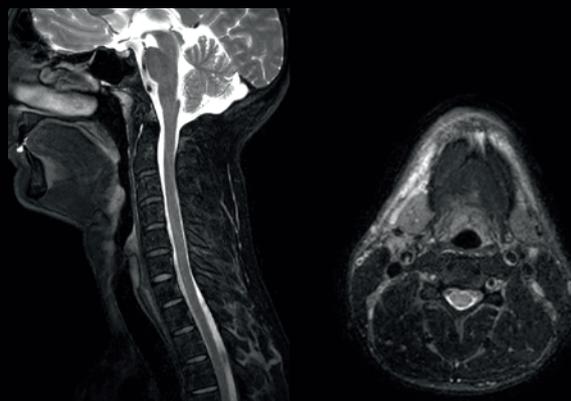
<sup>1</sup> Compared to Philips overlay solution without flexible coils

## Manage multiple anatomies

High image quality for every patient, and every anatomy? With versatile arrangements of dStream coils, you can perform prostate, general pelvis, female pelvis, brain, head and neck, and spine scans all in the treatment position. Patient set-up is intuitive and takes minimal coil handling.



MR-RT CouchTop, with ds Flex coils  
Ingenia 3.0T



With overlay, no ds Flex coils



# Maintain **high standards**

Using MR images in RT places high demands on the geometric accuracy of tumors, organs, and their location. With its industry-leading linear gradients and 3D Gradient Distortion Correction, the Ingenia MR-RT provides excellent geometric accuracy ( $\leq 1$  mm  $\varnothing$  32 cm volume typical). What's more, it supports your confidence in MRI quality thanks to a dedicated QA analysis package tailored for RT planning.

### Know you can rely on MRI performance

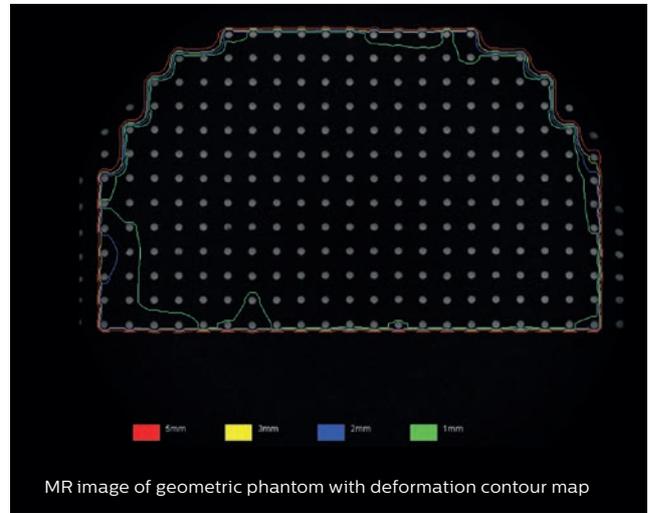
Evaluate the geometric fidelity in a large field of view with the intuitive, ready-to-use package that includes a dedicated phantom and analysis software.

### Lessen the likelihood of variability

Since most steps are fully automated, you can perform routine volumetric evaluations efficiently and in a repeatable manner – right from the MRI console.

### Enhance productivity

Featuring high MRI signal markers in a regular 25 mm grid design, the QA phantom is designed for RT. No manual analysis steps are needed as automatic image analysis provides a comprehensive set of deformation contour maps for 3D evaluation.



“Accurate geometry is crucial in radiotherapy. A dedicated QA protocol with a phantom that covers a large field of view is required to provide volumetric accuracy information.”

**Marielle Philippens, MD, PhD, medical physicist, University Medical Center Utrecht, The Netherlands**





# Work **your way**

To capitalize on the benefits that MR imaging can bring to your planning, you need a system that fits how you work. The Ingenia MR-RT offers tools, RT software features, and tailored training for workflow refinements, allowing you to focus on what's important: patient care.

### Practice clinical excellence efficiently

The optional LAP DORADOnova MR3T laser positioning system supports enhanced MR-CT registration since it allows you to align patients at the MRI scanner. Dedicated software keeps the external laser bridge and the MRI scanner connected, which brings advantages to workflows. Simply activate one-click travel-to-scan, and the patient is moved from the laser system isocenter directly into the MRI system isocenter, thereby reducing workflow steps.

### Stay connected

Take workflow refinements beyond MRI. The DICOM MR output of your MR images supports connectivity to the Pinnacle<sup>3</sup> treatment planning system or other planning systems of your choice.

### Learn and share MRI expertise

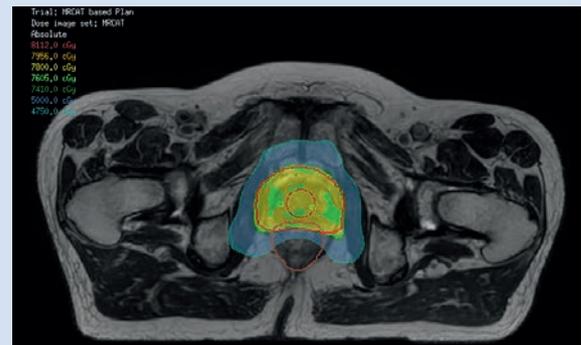
Successful integration of MR imaging in your workflow starts with people. We offer tailored training to assist your team in streamlining workflows and making full, efficient use of MR imaging from day one.

### Revolutionize your simulation approach in just a few minutes

MR-only simulation for radiation treatment planning for prostate cancer is available as an option to your Ingenia MR-RT system. And it's tailored to every stage of your simulation workflow: dedicated imaging, embedded generation of MRCAT images, and export to treatment planning systems.

Obtain excellent soft-tissue contrast and robust 3D density maps in one MR imaging session.

To learn more about this fast, automated approach, visit [www.philips.com/mr-rt](http://www.philips.com/mr-rt)



# Advanced imaging is here

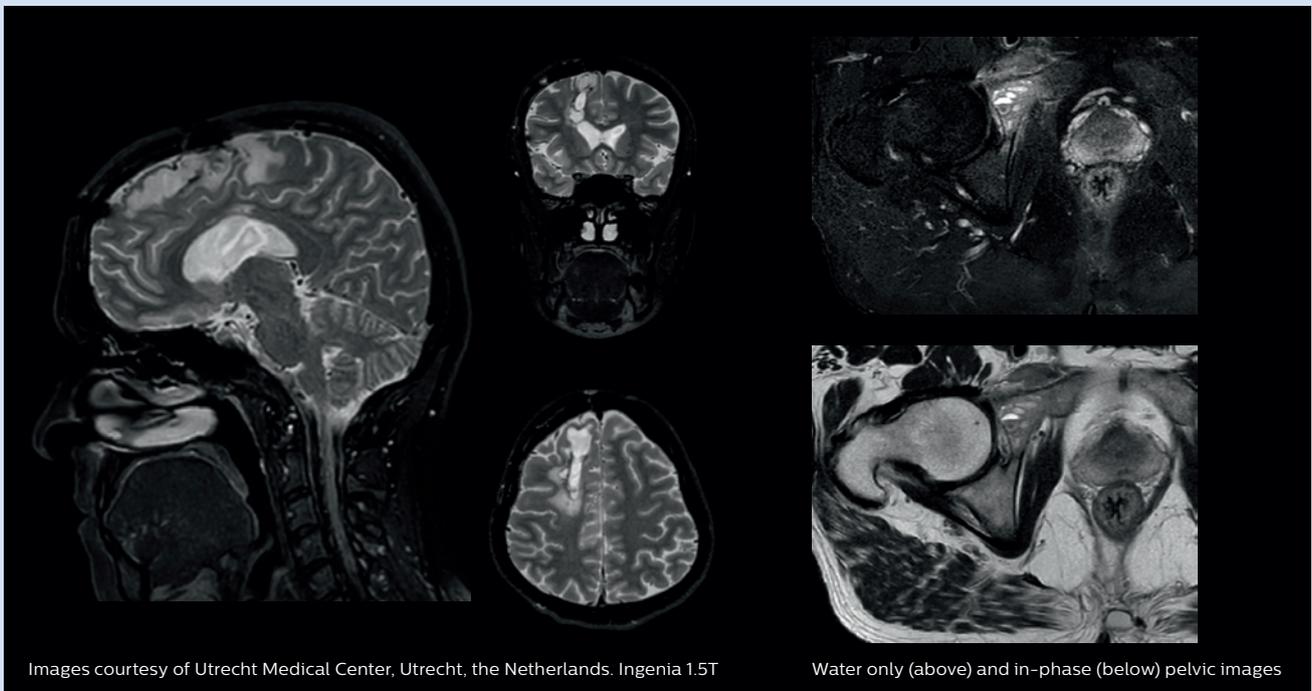
With dStream architecture and dedicated clinical application packages, the Ingenia MR-RT empowers you to apply advanced imaging techniques when and where you need them.

## 3D BrainView

As part of our configuration, this volumetric 3D TSE imaging technique allows you to quickly see small structures in a very time-efficient manner.

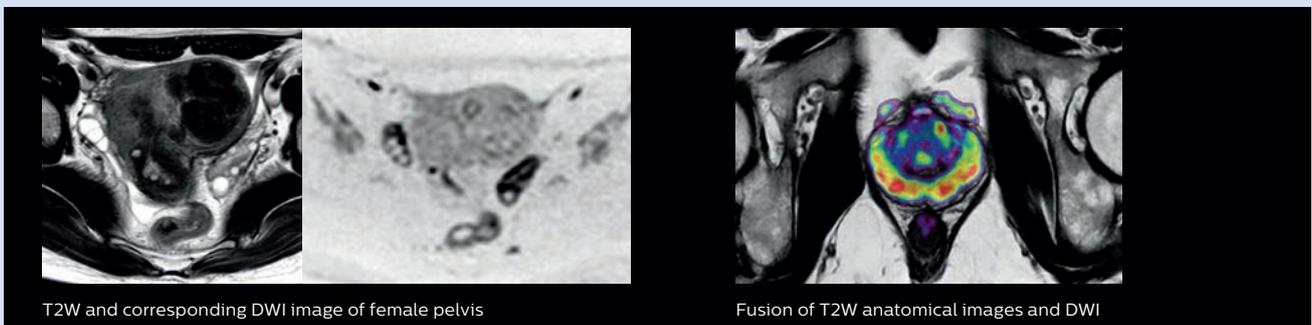
## mDIXON

The optional mDIXON package enables robust protocols for multi-contrast, homogenous, and fat-suppressed imaging.



## Functional imaging with Ingenia

Perform functional evaluation by means of diffusion, perfusion, and contrast-enhanced imaging. You can combine a variety of imaging options to conduct an advanced analysis of the treatment target volume and support your assessment of therapy response.





# Your world is a new world

In an increasingly connected world, health systems are looking for solutions to provide the shortest path to the best care at the lowest cost. Together, we'll find new ways to drive clinical performance, enhance the patient experience, and deliver economic value for your institution.

We partner with you to create innovative solutions that integrate imaging technology with data analytics, consulting, and services. Now more than ever, you have the tools to perform the best exams and provide the quantitative information that helps the care team manage disease.

We share the vision for a seamless integration of radiation oncology within the health continuum. By realizing new opportunities to connect care, we can create a new, healthier future together.

## **A track record that works for you**

As a global leader in healthcare technology, we know your requirements are as dynamic as today's environment. Customers have come to rely on our history in radiation oncology breakthroughs which spans more than 20 years, from pioneering CT simulation, to continuous innovation with the trusted Pinnacle<sup>3</sup> treatment planning system and the introduction of the first commercial MR-only simulation solution. When you choose to work with Philips, you're choosing a leader in radiation oncology who understands your workflow. The Ingenia MR-RT represents the innovation you expect from Philips.



Ingenia MR-RT is not available in all countries.  
MR-only simulation is not available in all countries and for all configurations.  
Please contact your local Philips representative for further details.

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