

# Patient Guide to Magnetic Resonance guided Radiation Therapy

An innovative treatment option for people who have been diagnosed with cancer

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**Magnetic Resonance guided Radiation Therapy (MRgRT), is a new and innovative treatment option that allows doctors to watch your tumor as they treat it, and adapt your treatment to tumor changes in real time.**



## Watch your tumor

- MRgRT is a combination of an MRI scan and radiation therapy.
- Real-time visualization of tumors allows treatment to be adapted.
- This differs from traditional radiation therapy because MRgRT allows doctors to watch your tumor as they treat it.
- MRgRT is designed so your doctors can adapt your treatment to daily changes in your body to create an approach that is unique to you.



## Improve your treatment experience<sup>1</sup>

- MRgRT is expected to reduce the dose to the healthy tissues that are next to the tumor.
- It can help reduce unwanted side effects from the radiation.<sup>1,2</sup>
- It can potentially result in fewer treatment sessions.<sup>3</sup>



## Respond to your body

The MR image allows your doctor to target your tumor with increased accuracy and precision,<sup>4</sup> which reduces the amount of radiation exposure to surrounding organs.

**Radiation therapy is a cancer treatment that uses high doses of radiation to destroy cancer cells and shrink tumors.**



**~50%**

of all cancer cases are treated with radiation therapy, according to studies.<sup>5</sup>



**57%**

of all cancers globally are lung, breast, prostate, colon, stomach, liver, rectum, esophagus or cervical cancer.<sup>6</sup>



**8 in 9**

of these cancers are located in difficult-to-visualize soft-tissue anatomies, which is where MRgRT is especially effective.

### Where can I go for updates and more information?

Please contact your healthcare provider with any questions/concerns.

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<sup>1</sup> Gregoire V, Guckenberger M, Haustermans K, et al. Image-guidance in radiation therapy for better cure of cancer. *Mol Oncol*. 2020. Available at: <https://febs.onlinelibrary.wiley.com/doi/epdf/10.1002/1878-0261.12751>. Last accessed December 2020. <sup>2</sup> Hall WA, Paulson ES, van der Heide UA, et al. The transformation of radiation oncology using real-time magnetic resonance guidance: A review. *Eur J Cancer*. 2019; 11; 122:42–52. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0959804919304290>. Last accessed: December 2020. <sup>3</sup> Murray J, Tree AC. Prostate cancer – Advantages and disadvantages of MR-guided RT. *Clinical and Translational Radiation Oncology*. 2019; 18:68–73. <sup>4</sup> Bainbridge H, Salem A, et al. Magnetic resonance imaging in precision radiation therapy for lung cancer. *Transl Lung Cancer Res*. 2017; 6(6): 689–707. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5709138/>. Last accessed: December 2020. <sup>5</sup> IAEA. Radiotherapy in Cancer Care: Facing the Global Challenge. 2017. Available at: [https://www-pub.iaea.org/MTCD/Publications/PDF/P1638\\_web.pdf](https://www-pub.iaea.org/MTCD/Publications/PDF/P1638_web.pdf). Last accessed: December 2020. <sup>6</sup> World Health Organisation, The Global Cancer Observatory. All Cancers Fact Sheet. 2020. Available at: <https://gco.iarc.fr/today/data/factsheets/cancers/39-All-cancers-fact-sheet.pdf>. Last accessed: December 2020.