

# 10 facts about radiotherapy

1

At least a quarter of patients who need radiotherapy **DO NOT** receive it.<sup>1</sup>

3

By 2035, if every cancer patient who needs radiotherapy has access to it, almost **ONE MILLION** more lives will be saved every year worldwide.<sup>4</sup>

5

Radiotherapy alleviates cancer symptoms, such as pain, and **IMPROVES** patients' quality of life.<sup>4-8</sup>

7

State-of-the-art radiotherapy can specifically match the shape of the tumour it is **TARGETING** – thus limiting damage to nearby healthy organs and tissue.<sup>9-10</sup>

9

Advances in radiotherapy mean **MORE** patients than ever can access treatment – for example, in cases of cancer that are not eligible for surgery.<sup>16-18</sup>

2

The demand for radiotherapy will increase by **16%** by 2025<sup>2,3</sup> but current capacity is insufficient to meet this demand.<sup>2</sup>

4

Radiotherapy **SAVES LIVES** – and is a key part of curative treatment for many types of cancer.<sup>2,5</sup>

6

Radiotherapy is **NOT INVASIVE** – many patients receiving radiotherapy can still go to work and carry on with day-to-day life.<sup>5</sup>

8

Continuous improvements in delivery of radiotherapy have allowed treatment times to be reduced; for example, the time for an average radiotherapy course for breast or prostate cancer has **HALVED** in the past two decades.<sup>11-15</sup>

10

There is significant **VARIATION** across Europe in access to radiotherapy treatment, services and trained staff.<sup>1, 19-20</sup>

These facts are summarised from the report *Radiotherapy: seizing the opportunity in cancer care*. For more information visit: [mariecurielegacy.org](http://mariecurielegacy.org)

# More about radiotherapy

Today, radiotherapy is a safe and highly effective cancer treatment, using ionising radiation, predominantly high-energy X-rays. Radiotherapy allows cancer specialists to precisely target and destroy tumour cells by delivering the most appropriate and effective dose possible.

Radiotherapy is recommended as part of treatment for more than 50% of cancer patients.<sup>1 21</sup> It can be used on its own or to complement or enhance the effects of other treatments, for example to shrink or control a cancer before and after surgery.<sup>4 5</sup>

Technological advances allow modern radiotherapy to precisely target each patient's cancer, with all team members working to ensure that the dose and mode of radiotherapy is optimised.

## References

1. Borras JM, Lievens Y, Dunscombe P, et al. 2015. The optimal utilization proportion of external beam radiotherapy in European countries: An ESTRO-HERO analysis. *Radiother Oncol* 116(1): 38-44
2. Borras JM, Lievens Y, Barton M, et al. 2016. How many new cancer patients in Europe will require radiotherapy by 2025? An ESTRO-HERO analysis. *Radiother Oncol* 119(1): 5-11
3. Borras JM, Grau C, Corral J, et al. 2018. Estimating the number of fractions by tumour site for European countries in 2012 and 2025: An ESTRO-HERO analysis. *Radiother Oncol* 126(2): 198-204
4. Atun R, Jaffray DA, Barton MB, et al. 2015. Expanding global access to radiotherapy. *Lancet Oncol* 16(10): 1153-86
5. Thompson MK, Poortmans P, Chalmers AJ, et al. 2018. Practice-changing radiation therapy trials for the treatment of cancer: where are we 150 years after the birth of Marie Curie? *Br J Cancer* 119(4): 389-407
6. Jacob S, Wong K, Delaney GP, et al. 2010. Estimation of an optimal utilisation rate for palliative radiotherapy in newly diagnosed cancer patients. *Clin Oncol (R Coll Radiol)* 22(1): 56-64
7. McDonald R, Ding K, Brundage M, et al. 2017. Effect of radiotherapy on painful bone metastases: A secondary analysis of the nci clinical trials group symptom control trial sc.23. *JAMA Oncol* 3(7): 953-59
8. Westhoff PG, de Graeff A, Monnikhof EM, et al. 2015. Quality of Life in Relation to Pain Response to Radiation Therapy for Painful Bone Metastases. *Int J Radiat Oncol Biol Phys* 93(3): 694-701
9. Mazzola R, Fiorentino A, Ricchetti F, et al. 2018. An update on radiation therapy in head and neck cancers. *Expert Rev Anticancer Ther* 18(4): 359-64
10. Garibaldi C, Jereczek-Fossa BA, Marvaso G, et al. 2017. Recent advances in radiation oncology. *Ecancermedicalscience* 11: 785
11. Owen JR, Ashton A, Bliss JM, et al. 2006. Effect of radiotherapy fraction size on tumour control in patients with early-stage breast cancer after local tumour excision: long-term results of a randomised trial. *Lancet Oncol* 7(6): 467-71
12. Arcangeli S and Greco C. 2016. Hypofractionated radiotherapy for organ-confined prostate cancer: is less more? *Nat Rev Urol* 13(7): 400-8
13. Dearnaley D, Syndikus I, Mossop H, et al. 2016. Conventional versus hypofractionated high-dose intensity-modulated radiotherapy for prostate cancer: 5-year outcomes of the randomised, non-inferiority, phase 3 CHHiP trial. *Lancet Oncol* 17(8): 1047-60
14. Schäfer R, Strnad V, Polgár C, et al. 2018. Quality-of-life results for accelerated partial breast irradiation with interstitial brachytherapy versus whole-breast irradiation in early breast cancer after breast-conserving surgery (GEC-ESTRO): 5-year results of a randomised, phase 3 trial. *Lancet Oncol* 19(6): 834-44
15. Haviland JS, Owen JR, Dewar JA, et al. 2013. The UK Standardisation of Breast Radiotherapy (START) trials of radiotherapy hypofractionation for treatment of early breast cancer: 10-year follow-up results of two randomised controlled trials. *Lancet Oncol* 14(11): 1086-94
16. Tree AC, Khoo VS, Eeles RA, et al. 2013. Stereotactic body radiotherapy for oligometastases. *Lancet Oncol* 14(1): e28-37
17. Rosenzweig K. 2017. Stereotactic Body Radiation Therapy as an Alternative to Surgery in Early-Stage Non-Small-Cell Lung Cancer. *Oncology (Williston Park)* 31(6): 492-8
18. Videtic GM, Stephans K, Reddy C, et al. 2010. Intensity-modulated radiotherapy-based stereotactic body radiotherapy for medically inoperable early-stage lung cancer: excellent local control. *Int J Radiat Oncol Biol Phys* 77(2): 344-9
19. Grau C, Defourny N, Malicki J, et al. 2014. Radiotherapy equipment and departments in the European countries: final results from the ESTRO-HERO survey. *Radiother Oncol* 112(2): 155-64
20. Lievens Y, Defourny N, Coffey M, et al. 2014. Radiotherapy staffing in the European countries: Final results from the ESTRO-HERO survey. *Radiother Oncol* 112(2): 178-86
21. Borras JM, Barton M, Grau C, et al. 2015. The impact of cancer incidence and stage on optimal utilization of radiotherapy: Methodology of a population based analysis by the ESTRO-HERO project. *Radiother Oncol* 116(1): 45-50



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