

**Bibliography**

# Elekta Unity

## Peer-Reviewed Publications

Total of 457 publications

April 2022

---

# Contents

Abdomen . . . . .	3
Breast . . . . .	4
Central Nervous System . . . . .	5
Brain . . . . .	5
Spine . . . . .	6
Clinical general . . . . .	6
Digestive System . . . . .	7
Esophagus . . . . .	7
Liver . . . . .	8
Liver & Pancreas . . . . .	9
Pancreas . . . . .	9
Genitourinary . . . . .	10
Bladder . . . . .	10
Kidney . . . . .	10
Prostate, Rectum . . . . .	11
Gynecologic . . . . .	11
Cervix . . . . .	11
Other . . . . .	11
Head & Neck . . . . .	12
General . . . . .	12
Oropharynx . . . . .	13
Other . . . . .	14
Heart . . . . .	14
Lymphoid tissues . . . . .	14
Multiple Indications . . . . .	15
Abdomen (general), Pelvis (general) . . . . .	15
Breast, Pancreas, Lung, Head&Neck (general) . . . . .	15
Brain, Esophagus, Lung, Rectum . . . . .	15
Pancreas, Liver, Kidney . . . . .	15
Pancreas, Prostate . . . . .	15
Other, Rectum . . . . .	15
Lymphoid tissues, Prostate, Ovary . . . . .	15
Lymphoid tissues, Oligometas. . . . .	16
Lung, Prostate . . . . .	16
Musculoskeletal . . . . .	16
Oligometastases . . . . .	16
Oligometastases, Lymphoid tissues . . . . .	17
Pediatric . . . . .	17
Pelvis . . . . .	17
Rectum . . . . .	23
Skin . . . . .	24
Thorax/Lung . . . . .	24
Additional Technical Articles . . . . .	25
Clinical Introduction . . . . .	25
Dosimetry . . . . .	26
Electron return effect, dose calculation . . . . .	31
Gating . . . . .	34
General description of MR/RT technology . . . . .	34
MRI . . . . .	37
Planning, adaptation . . . . .	42
QA . . . . .	44
Tracking . . . . .	47

## Abdomen (10)

---

**Reducing MRI-guided radiotherapy planning and delivery times via efficient leaf sequencing and segment shape optimization algorithms.**

**Phys Med Biol.** 2022;67(5):055005.

Snyder JE, St-Aubin J, Yaddanapudi S, Marshall S, Strand S, Kruger S, Flynn RT, Hyer DE.  
PMID: 35130528 DOI: 10.1088/1361-6560/ac5299.

**Online adaptive MR-guided stereotactic radiotherapy for unresectable malignancies in the upper abdomen using a 1.5T MR-linac.**

**Acta Oncol.** 2022;61(1):111–15.

Daamen LA, de Mol van Otterloo SR, van Goor IWJM, Eijkelenkamp H, Erickson BA, Hall WA, Heerkens HD, Meijer GJ, Molenaar IQ, van Santvoort HC, Verkooijen HM, Intven MPW.  
PMID: 34879792 DOI: 10.1080/0284186X.2021.2012593.

**Patterns of care, tolerability, and safety of the first cohort of patients treated on a novel high-field MR-Linac within the MOMENTUM study: Initial results from a prospective multi-institutional registry.**

**Int J Radiat.** 2021;111(4):867–75.

de Mol van Otterloo SR, Christodouleas JP, Blezer ELA, Akhlat H, Brown K, Choudhury A, Eggert D, Erickson BA, Daamen LA, Faivre-Finn C, Fuller CD, Goldwein J, Hafeez S, Hall E, Harrington KJ, van der Heide UA, Huddart RA, Intven MPW, Kirby AM, Lalondrelle S, McCann C, Minsky BD, Mook S, Nowee ME, Oelfke U, Orling K, Philippens MEP, Sahgal A, Schultz CJ, Tersteeg RJHA, Tjssen RHN, Tree AC, van Triest B, Tseng CL, Hall WA, Verkooijen HM.  
PMID: 34265394 DOI: 10.1016/j.ijrobp.2021.07.003.

**DeepDose: A robust deep learning-based dose engine for abdominal tumours in a 1.5 T MRI radiotherapy system.**

**Phys Med Biol.** 2021;66(6):065017.

Tsekas G, Bol GH, Raaymakers BW, Kontaxis C.  
PMID: 33545708 DOI: 10.1088/1361-6560/abe3d1.

**Deep learning-based image reconstruction and motion estimation from undersampled radial k-space for real-time MRI-guided radiotherapy.**

**Phys Med Biol.** 2020;65(15):155015.

Terpstra ML, Maspero M, d'Agata F, Stemkens B, Intven MPW, Lagendijk JJW, van den Berg CAT, Tjssen RHN.  
PMID: 32408295 DOI: 10.1088/1361-6560/ab9358.

**Feasibility of real-time motion tracking using cine MRI during MR-guided radiation therapy for abdominal targets.**

**Med Phys.** 2020;47(8):3554–66.

Keiper TD, Tai A, Chen X, Paulson E, Lathuiliere F, Beriault S, Hebert F, Cooper DT, Lachaine M, Li XA.  
PMID: 32402111 DOI: 10.1002/mp.14230.

**4D-MRI driven MR-guided online adaptive radiotherapy for abdominal stereotactic body radiation therapy on a high field MR-Linac: Implementation and initial clinical experience.**

**Clin Transl Radiat Oncol.** 2020;23:72–9.

Paulson ES, Ahunbay E, Chen X, Mickevicius NJ, Chen GP, Schultz C, Erickson B, Straza M, Hall WA, Li XA.  
PMID: 32490218 DOI: 10.1016/j.ctro.2020.05.002.

**MRI-based upper abdominal organs-at-risk atlas for radiation oncology.**

**Int J Radiat.** 2020;106(4):743–53.

Lukovic J, Henke L, Gani C, Kim TK, Stanescu T, Hosni A, Lindsay P, Erickson B, Khor R, Eccles C, Boon C, Donker M, Jagavkar R, Nowee ME, Hall WA, Parikh P, Dawson LA.  
PMID: 31953061 DOI: 10.1016/j.ijrobp.2019.12.003.

**A preferred patient decubitus positioning for magnetic resonance image guided online adaptive radiation therapy of pancreatic cancer.**

**Phys Imaging Radiat.** 2019;12:22–9.

Chen Y, Chen X, Hall W, Prior P, Zhang Y, Paulson E, Lang J, Erickson B, Li XA.  
PMID: 33458291 DOI: 10.1016/j.phro.2019.11.001.

**Image-driven, model-based 3D abdominal motion estimation for MR-guided radiotherapy.**

**Phys Med Biol.** 2016;61(14):5335–55.

Stemkens B, Tjssen RH, de Senneville BD, Lagendijk JJ, van den Berg CA.  
PMID: 27362636 DOI: 10.1088/0031-9155/61/14/5335.

## Breast (11)

---

### **Prone vs. supine accelerated partial breast irradiation on an MR-Linac: A planning study.**

**Radiother Oncol.** 2021;165:193–9.

Groot Koerkamp ML, van der Leij F, van't Westeinde T, Bol GH, Scholten V, Bouwmans R, Mandija S, Philippens MEP, van den Bongard HJGD, Houweling AC.

PMID: 34774649 DOI: 10.1016/j.radonc.2021.11.001.

### **Use of magnetic resonance image-guided radiotherapy for breast cancer: a scoping review.**

**J Med Radiat Sci.** 2022;69(1):122–33.

Berlangieri A, Elliott S, Wasiak J, Chao M, Foroudi F.

PMID: 34523823 DOI: 10.1002/jmrs.545.

### **Consensus on contouring primary breast tumors on MRI in the setting of neoadjuvant partial breast irradiation in trials.**

**Pract Radiat Oncol.** 2020;10(6):e466–74.

Vasmel JE, Groot Koerkamp ML, Kirby AM, Russell NS, Shaitelman SF, Vesprini D, Anandadas CN, Currey A, Keller BM, Braunstein LZ, Han K, Kotte ANTJ, de Waard SN, Philippens MEP, Houweling AC, Verkooijen HM, van den Bongard HJGD.

PMID: 32315784 DOI: 10.1016/j.prr.2020.03.011.

### **Synthetic CT for single-fraction neoadjuvant partial breast irradiation on an MRI-Linac.**

**Phys Med Biol.** 2021;66(8):085010.

Groot Koerkamp ML, de Hond YJM, M aspero M, Kontaxis C, Mandija S, Vasmel JE, Charaghvandi RK, Philippens MEP, van Asselen B, van den Bongard HJGD, Hackett SS, Houweling AC.

PMID: 33761491 DOI: 10.1088/1361-6560/abf1ba.

### **Analysis of the electron-stream effect in patients treated with partial breast irradiation using the 1.5 T MR-linear accelerator.**

**Clin Transl Radiat Oncol.** 2021;27:103–8.

De-Colle C, Nachbar M, Mönnich D, Boeke S, Gani C, Weidner N, Heinrich V, Winter J, Tsitsekidis S, Dohm O, Zips D, Thorwarth D.

PMID: 33553697 DOI: 10.1016/j.ctro.2020.12.005.

### **Use of magnetic resonance imaging-guided radiotherapy for breast cancer: A scoping review protocol.**

**Sys Rev.** 2021;10(44)

Elliott S, Berlangieri A, Wasiak J, Chao M, Foroudi F

PMID: 33526097 DOI: 10.1186/s13643-021-01594-9

### **Optimizing MR-guided radiotherapy for breast cancer patients.**

**Front Oncol.** 2020;10:1107.

Groot Koerkamp ML, Vasmel JE, Russell NS, Shaitelman SF, Anandadas CN, Currey A, Vesprini D, Keller BM, De-Colle C, Han K, Braunstein LZ, Mahmood F, Lorenzen EL, Philippens MEP, Verkooijen HM, Lagendijk JJW, Houweling AC, van den Bongard HJGD, Kirby AM.

PMID: 32850318 DOI: 10.3389/fonc.2020.01107.

### **Partial breast irradiation with the 1.5 T MR-Linac: First patient treatment and analysis of electron return and stream effects.**

**Radiother Oncol.** 2020;145:30–5.

Nachbar M, Mönnich D, Boeke S, Gani C, Weidner N, Heinrich V, Lo Russo M, Livi L, Winter J, Tsitsekidis S, Dohm O, Thorwarth D, Zips D, De-Colle C.

PMID: 31874347 DOI: 10.1016/j.radonc.2019.11.025.

### **Single dose partial breast irradiation using an MRI linear accelerator in the supine and prone treatment position.**

**Clin Transl Radiat Oncol.** 2019;14:1–7.

Charaghvandi KR, Van't Westeinde T, Yoo S, Houweling AC, Rodrigues A, Verkooijen HM, Philippens MEP, van Asselen B, Horton JK, van den Bongard HJGD.

PMID: 30406210 DOI: 10.1016/j.ctro.2018.09.001.

---

**Magnetic field dose effects on different radiation beam geometries for hypofractionated partial breast irradiation.**

**J Appl Clin Med Phys.** 2017;18(6):62–70.

Kim A, Lim-Reinders S, McCann C, Ahmad SB, Sahgal A, Lee J, Keller BM.

PMID: 28901729 DOI: 10.1002/acm2.12182.

**MR-guided breast radiotherapy: feasibility and magnetic-field impact on skin dose.**

**Phys Med Biol.** 2013;58(17):5917–30.

van Heijst TC, den Hartogh MD, Lagendijk JJ, van den Bongard HJ, van Asselen B.

PMID: 23920343 DOI: 10.1088/0031-9155/58/17/5917.

## Central Nervous System (12)

---

### Brain

**Inter-fraction dynamics during post-operative 5 fraction cavity hypofractionated stereotactic radiotherapy with a MR LINAC: A prospective serial imaging study.**

**J Neurooncol.** 2022;156:569–77.

Tan H, Stewart J, Ruschin M, Wang MH, Myrehaug S, Tseng CL, Detsky J, Husain Z, Chen H, Sahgal A, Soliman H.

PMID: 34981300 DOI: 10.1007/s11060-021-03938-w.

**Accuracy and precision of apparent diffusion coefficient measurements on a 1.5 T MR-Linac in central nervous system tumour patients.**

**Radiother Oncol.** 2021;164:155–62.

Lawrence LSP, Chan RW, Chen H, Keller B, Stewart J, Ruschin M, Chugh B, Campbell M, Theriault A, Stanisz GJ, MacKenzie S, Myrehaug S, Detsky J, Maralani PJ, Tseng CL, Czarnota GJ, Sahgal A, Lau AZ.

PMID: 34592363 DOI: 10.1016/j.radonc.2021.09.020.

**Chemical exchange saturation transfer MRI in central nervous system tumours on a 1.5 T MR-Linac.**

**Radiother Oncol.** 2021;162:140–9.

Chan RW, Lawrence LSP, Oglesby RT, Chen H, Stewart J, Theriault A, Campbell M, Ruschin M, Myrehaug S, Atenafu EG, Keller B, Chugh B, MacKenzie S, Tseng CL, Detsky J, Maralani PJ, Czarnota GJ, Stanisz GJ, Sahgal A, Lau AZ.

PMID: 34280403 DOI: 10.1016/j.radonc.2021.07.010.

**MR-guided radiotherapy for brain and spine tumors.**

**Front Oncol.** 2021;11:626100.

Maziero D, Straza MW, Ford JC, Bovi JA, Diwanji T, Stoyanova R, Paulson ES, Mellon EA.

PMID: 33763361 DOI: 10.3389/fonc.2021.626100.

**Glioma consensus contouring recommendations from a MR-Linac International Consortium Research Group and evaluation of a CT-MRI and MRI-only workflow.**

**J Neurooncol.** 2020;149:305–14.

Tseng CL, Stewart J, Whitfield G, Verhoeff JJC, Bovi J, Soliman H, Chung C, Myrehaug S, Campbell M, Atenafu EG, Heyn C, Das S, Perry J, Ruschin M, Sahgal A.

PMID: 32860571 DOI: 10.1007/s11060-020-03605-6.

**MR-only brain radiation therapy: Dosimetric evaluation of synthetic CTs generated by a dilated convolutional neural network.**

**Int J Radiat.** 2018;102(4):801–12.

Dinkla AM, Wolterink JM, Maspero M, Savenije MHF, Verhoeff JJC, Seravalli E, Isgum I, Seevinck PR, van den Berg CAT.

PMID: 30108005 DOI: 10.1016/j.ijrobp.2018.05.058.

**Dosimetric feasibility of the hybrid magnetic resonance imaging (MRI)-linac system (MRL) for brain metastases: The impact of the magnetic field.**

**Radiother Oncol.** 2017;125(2):273–9.

Tseng CL, Eppinga W, Seravalli E, Hackett S, Brand E, Ruschin M, Lee YK, Atenafu EG, Sahgal A.

PMID: 29079310 DOI: 10.1016/j.radonc.2017.09.036.

---

**The dosimetric impact of gadolinium-based contrast media in GBM brain patient plans for a MRI-Linac.**

**Phys Med Biol.** 2017;62(26):N362–74.

Ahmad SB, Paudel MR, Sarfehnia A, Kim A, Pang G, Ruschin M, Sahgal A, Keller BM.  
PMID: 28635617 DOI: 10.1088/1361-6560/aa7acb.

**MR-guided radiation therapy: transformative technology and its role in the central nervous system.**

**J Neuro-Oncol.** 2017;19(S2:ii16–29.

Cao Y, Tseng CL, Balter JM, Teng F, Parmar HA, Sahgal A.  
PMID: 28380637 DOI: 10.1093/neuonc/nox006.

## Spine

**Feasibility of spinal stereotactic body radiotherapy in Elekta Unity® MR-Linac.**

**J Radiosurgery SBRT.** 2020;7(2):127–34.

Han EY, Aima M, Hughes N, Briere TM, Yeboa DN, Castillo P, Wang J, Yang J, Vedam S.  
PMID: 33282466 PMCID: PMC7717094

**Evaluation of online plan adaptation strategies for the 1.5T MR-linac based on “First-In-Man” treatments.**

**Cureus** 2018;10(4):e2431.

Winkel D, Bol GH, Kiekebosch IH, Van Asselen B, Kroon PS, Jürgenliemk-Schulz IM, Raaymakers BW.  
PMID: 29876153 DOI: 10.7759/cureus.2431.

**First patients treated with a 1.5 T MRI-Linac: clinical proof of concept of a high-precision, high-field MRI guided radiotherapy treatment.**

**Phys Med Biol.** 2017;62(23):L41–59.

Raaymakers BW, Jürgenliemk-Schulz IM, Bol GH, Glitzner M, Kotte ANTJ, van Asselen B, de Boer JCJ, Bluemink JJ, Hackett SL, Moerland MA, Woodings SJ, Wolthaus JWH, van Zijp HM, Philippens MEP, Tijssen R, Kok JGM, de Groot-van Breugel EN, Kiekebosch I, Meijers LTC, Nomden CN, Sikkes GG, Doornaert PAH, Eppinga WSC, Kasperts N, Kerkmeijer LGW, Tersteeg JHA, Brown KJ, Pais B, Woodhead P, Lagendijk JJW.  
PMID: 29135471 DOI: 10.1088/1361-6560/aa9517.

## Clinical general (9)

---

**The MOMENTUM study: An international registry for the evidence-based introduction of MR-guided adaptive therapy.**

**Front Oncol.** 2020;10:1328.

de Mol van Otterloo SR, Christodouleas JP, Blezer ELA, Akhiat H, Brown K, Choudhury A, Eggert D, Erickson BA, Faivre-Finn C, Fuller CD, Goldwein J, Hafeez S, Hall E, Harrington KJ, van der Heide UA, Huddart RA, Intven MPW, Kirby AM, Lalondrelle S, McCann C, Minsky BD, Mook S, Nowee ME, Oelfke U, Orrling K, Sahgal A, Sarmiento JG, Schultz CJ, Tersteeg RJHA, Tijssen RHN, Tree AC, van Triest B, Hall WA, Verkooijen HM.  
PMID: 33014774 DOI: 10.3389/fonc.2020.01328.

**Clinical workflow for treating patients with a metallic hip prosthesis using magnetic resonance imaging-guided radiotherapy.**

**Phys Imaging Radiat.** 2020;15:85–90.

Keesman R, van der Bijl E, Janssen TM, Vijlbrief T, Pos FJ, van der Heide UA.  
PMID: 33458331 DOI: 10.1016/j.phro.2020.07.010.

**“Apres Mois, Le Deluge”: Preparing for the coming data flood in the MRI-guided radiotherapy era.**

**Front Oncol.** 2019;9:983.

Kiser KJ, Smith BD, Wang J, Fuller CD.  
PMID: 31632914 DOI: 10.3389/fonc.2019.00983.

**Feasibility and accuracy of quantitative imaging on a 1.5 T MR-Linear accelerator.**

**Radiother Oncol.** 2019;133:156–62.

Kooreman ES, van Houdt PJ, Nowee ME, van Pelt VWJ, Tijssen RHN, Paulson ES, Gurney-Champion OJ, Wang J, Koetsveld F, van Buuren LD, Ter Beek LC, van der Heide UA.  
PMID: 30935572 DOI: 10.1016/j.radonc.2019.01.011.

**Radiation-induced lung toxicity in mice irradiated in a strong magnetic field.**

**PLoS One** 2018;13:e0205803.

Rubinstein AE, Gay S, Peterson CB, Kingsley CV, Tailor RC, Pollard-Larkin JM, Melancon AD, Followill DS, Court LE.  
PMID: 30444887 DOI: 10.1371/journal.pone.0205803.

---

**R-IDEAL: A framework for systematic clinical evaluation of technical innovations in radiation oncology.**

**Front Oncol. 2017;7:59.**

Verkooijen HM, Kerkmeijer LGW, Fuller CD, Huddart R, Faivre-Finn C, Verheij M, Mook S, Sahgal A, Hall E, Schultz C.  
PMID: 28421162 DOI: 10.3389/fonc.2017.00059.

**Biological responses of human solid tumor cells to x-ray irradiation within a 1.5-Tesla magnetic field generated by a magnetic resonance imaging-linear accelerator.**

**Bioelectromagnetics 2016;37(7):471–80.**

Wang L, Hoogcarspel SJ, Wen Z, van Vulpen M, Molkentine DP, Kok J, Lin SH, Broekhuizen R, Ang KK, Bovenschen N, Raaymakers BW, Frank SJ.  
PMID: 27434783 DOI: 10.1002/bem.21991.

**The development of the MRI linac system for online MRI-guided radiotherapy: a clinical update.**

**J Intern Med. 2016;280(2):203–8.**

Legendijk JJ, van Vulpen M, Raaymakers BW.  
PMID: 27197553 DOI: 10.1111/joim.12516.

**The MRI-linear accelerator consortium: Evidence-based clinical introduction of an innovation in radiation oncology connecting researchers, methodology, data collection, quality assurance, and technical development.**

**Front Oncol. 2016;6:215.**

Kerkmeijer LG, Fuller CD, Verkooijen HM, Verheij M, Choudhury A, Harrington KJ, Schultz C, Sahgal A, Frank SJ, Goldwein J, Brown KJ, Minsky BD, van Vulpen M.  
PMID: 27790408 DOI: 10.3389/fonc.2016.00215.

## Digestive System (28)

---

**On-line MR imaging for dose validation of abdominal radiotherapy.**

**Phys Med Biol. 2015;60(22):8869–83.**

Glitzner M, Crijns SP, de Senneville BD, Kontaxis C, Prins FM, Legendijk JJ, Raaymakers BW.  
PMID: 26531846 DOI: 10.1088/0031-9155/60/22/8869.

## Esophagus

**Clinical implementation and feasibility of long-course fractionated MR-guided chemoradiotherapy for patients with esophageal cancer: An R-IDEAL stage 1b/2a evaluation of technical innovation**

**Clin Transl Radiat Oncol. 2022;34:82–89.**

Boekhoff MR, Bouwmans R, Doornaert PAH, Intven MPW, Legendijk JJW, van Lier ALHMMW, Rasing MJA, van de Ven S, Meijer GJ, Mook S.  
PMID: 10000000004 DOI: 10.1016/j.ctro.2022.03.008.

**An in-silico assessment of the dosimetric benefits of MR-guided radiotherapy for esophageal cancer patients.**

**Radiother Oncol. 2021;162:76–84.**

Boekhoff M, Defize I, Borggreve A, van Hillegersberg R, Kotte A, Legendijk J, van Lier A, Ruurda J, Takahashi N, Mook S, Meijer G.  
PMID: 34237345 DOI: 10.1016/j.radonc.2021.06.038.

**Review of MR-guided radiotherapy for esophageal cancer.**

**Front Oncol. 2021;11:628009.**

Lee SL, Bassetti M, Meijer GJ, Mook S.  
PMID: 33828980 DOI: 10.3389/fonc.2021.628009.

**In-air electron streaming effect for esophageal cancer radiotherapy with a 1.5 T perpendicular magnetic field: A treatment planning study.**

**Front Oncol. 2020;19:607061.**

Liu H, Ding S, Wang B, Li Y, Sun Y, Huang X.  
PMID: 33335861 DOI: 10.3389/fonc.2020.607061.

**Comparison of treatment plans for a high-field MRI-Linac and a conventional linac for esophageal cancer.**

**Strahlenther Onkol. 2019;195:327–34.**

Nachbar M, Monnich D, Kalwa P, Zips D, Thorwarth D, Gani C.  
PMID: 30361744 DOI: 10.1007/s00066-018-1386-z.

---

## Liver

### **MRI-guided online adaptive stereotactic body radiation therapy of liver and pancreas tumors on an MR-Linac system.**

**Cancers** 2022;14(3):716.

Stanescu T, Shessel A, Carpino-Rocca C, Taylor E, Semeniuk O, Li W, Barry A, Lukovic J, Dawson L, Hosni A.  
PMID: 35158984 DOI: 10.3390/cancers14030716.

### **Technical feasibility and clinical evaluation of 4D-MRI guided liver SBRT on the MR-Linac.**

**Radiother Oncol.** 2022;167:265–91.

van de Lindt A, Nowee B, Janssen T, Schneider C, Remeijer P, van Pelt VWJ, Betgen A, Jansen EPM, Sonke JJ.  
PMID: 35033603 DOI: 10.1016/j.radonc.2022.01.009.

### **MR-guided radiotherapy for liver malignancies.**

**Front Onco.** 2021;11:616027.

Boldrini L, Corradini S, Gani C, Henke L, Hosni A, Romano A, Dawson L.  
PMID: 33869001 DOI: 10.3389/fonc.2021.616027.

### **Validation of a 4D-MRI guided liver stereotactic body radiation therapy strategy for implementation on the MR-Linac.**

**Phys Med Biol.** 2021;66(10):105010.

van de Lindt TN, Fast MF, van den Wollenberg W, Kaas J, Betgen A, Nowee ME, Jansen EP, Schneider C, van der Heide UA, Sonke JJ.  
PMID: 33887708 DOI: 10.1088/1361-6560/abfada.

### **Magnetic resonance imaging-guided adaptive radiotherapy for colorectal liver metastases.**

**Cancers** 2021;13(7):1636.

Romesser PB, Tyagi N, Crane CH.  
PMID: 33915810 DOI: 10.3390/cancers13071636.

### **Simulated daily plan adaptation for magnetic resonance-guided liver stereotactic body radiotherapy.**

**Acta Oncol.** 2020;60:260–6.

Taylor E, Lukovic J, Velec M, Shessel A, Stanescu T, Dawson L, Letourneau D, Lindsay P.  
PMID: 33170058 DOI: 10.1080/0284186X.2020.1840625.

### **Investigating the impact of patient arm position in an MR-linac on liver SBRT treatment plans.**

**Med Phys.** 2019;46(11):5144–41.

van den Wollenberg W, de Ruiter P, Nowee ME, Jansen EPM, Sonke JJ, Fast MF.  
PMID: 31529694 DOI: 10.1002/mp.13826.

### **MRI-guided mid-position liver radiotherapy: Validation of image processing and registration steps.**

**Radiother Oncol.** 2019;138:132–40.

van de Lindt TN, Fast MF, van Kranen SR, Nowee ME, Jansen EPM, van der Heide UA, Sonke JJ.  
PMID: 31252295 DOI: 10.1016/j.radonc.2019.06.007.

### **Tumor trailing for liver SBRT on the MR-Linac.**

**Int J Radiat.** 2018;103:468–78.

Fast M, van de Schoot A, van de Lindt T, Carbaat C, van der Heide U, Sonke JJ.  
PMID: 30243573 DOI: 10.1016/j.ijrobp.2018.09.011.

### **A self-sorting coronal 4D-MRI method for daily image guidance of liver lesions on an MR-Linac.**

**Int J Radiat.** 2018;102:875–84.

van de Lindt T, Sonke JJ, Nowee M, Jansen E, van Pelt V, van der Heide U, Fast M.  
PMID: 30054104 DOI: 10.1016/j.ijrobp.2018.05.029.

### **Retrospective self-sorted 4D-MRI for the liver.**

**Radiother Oncol.** 2018;127:474–80.

van de Lindt TN, Fast MF, van der Heide UA, Sonke JJ.  
PMID: 29804801 DOI: 10.1016/j.radonc.2018.05.006.

### **An MRI-based mid-ventilation approach for radiotherapy of the liver.**

**Radiother Oncol.** 2016;121:276–80.

van de Lindt TN, Schubert G, van der Heide UA, Sonke JJ.  
PMID: 27825795 DOI: 10.1016/j.radonc.2016.10.020.



---

## Liver & Pancreas

**Initial clinical experience of stereotactic body radiation therapy (SBRT) for liver metastases, primary liver malignancy, and pancreatic cancer with 4D-MRI based online adaptation and real-time MRI monitoring using a 1.5 Tesla MR-Linac.**

**PLoS One 2020;15:e0236570.**

Hall WA, Straza MW, Chen X, Mickevicius N, Erickson B, Schultz C, Awan M, Ahunbay E, Li XA, Paulson ES.  
PMID: 32764748 DOI: 10.1371/journal.pone.0236570.

## Pancreas

**Inter- and intrafraction motion assessment and accumulated dose quantification of upper gastrointestinal organs during magnetic resonance-guided ablative radiation therapy of pancreas patients.**

**Phys Imaging Radiat Oncol. 2022;21:54–61.**

Alam S, Veerarahavan H, Tringale K, Amoateng E, Subashi E, Wu AJ, Crane CH, Tyagi N.  
PMID: 35243032 DOI: 10.1016/j.phro.2022.02.007.

**MRI-Guided Online Adaptive Stereotactic Body Radiation Therapy of Liver and Pancreas Tumors on an MR-Linac System.**

**Cancers 2022;14(3):716.**

Stanescu T, Shessel A, Carpino-Rocca C, Taylor E, Semeniuk O, Li W, Barry A, Lukovic J, Dawson L, Hosni A.  
PMID: 35158984 DOI: 10.3390/cancers14030716.

**Intrafraction pancreatic tumor motion patterns during ungated magnetic resonance guided radiotherapy with an abdominal corset.**

**Phys Imaging Radiat Oncol. 2021;21:1–5.**

Grimbergen G, Eijkelenkamp H, Heerkens Hanne D, Raaymakers Bas W, Intven Martijn PW, Meijer Gert J.  
PMID: 10000000009 DOI: 10.1016/j.phro.2021.12.001.

**Pancreatic gross tumor volume contouring on computed tomography (CT) compared with magnetic resonance imaging (MRI): Results of an international contouring conference.**

**Pract Radiat Oncol. 2017;8(2):107–15.**

Hall WA, Heerkens HD, Paulson ES, Meijer GJ, Kotte AN, Knechtges P, Parikh PJ, Bassetti MF, Lee P, Aitken KL, Palta M, Myrehaug S, Koay EJ, Portelance L, Ben-Josef E, Erickson BA.  
PMID: 29426692 DOI: 10.1016/j.prro.2017.11.005.

**Dose-escalated radiation therapy for pancreatic cancer: A simultaneous integrated boost approach.**

**Pract Radiat Oncol. 2020;19(6):e495–507.**

Koay EJ, Hanania AN, Hall WA, Taniguchi CM, Rebuena N, Myrehaug S, Aitken KL, Dawson LA, Crane CH, Herman JM, Erickson B.  
PMID: 32061993 DOI: 10.1016/j.prro.2020.01.012.

**Recommendations for MRI-based contouring of gross tumor volume and organs at risk for radiation therapy of pancreatic cancer.**

**Pract Radiat Oncol. 2017;7(2):126–36.**

Heerkens HD, Hall WA, Li XA, Knechtges P, Dalah E, Paulson ES, van den Berg CAT, Meijer GJ, Koay EJ, Crane CH, Aitken K, van Vulpen M, Erickson.  
BAPMID: 28089481 DOI: 10.1016/j.prro.2016.10.006.

**Feasibility of ablative stereotactic body radiation therapy of pancreas cancer patients on a 1.5 Tesla magnetic resonance-linac system using abdominal compression.**

**Phys Imaging Radiat Oncol. 2021;19:53–9.**

Tyagi N, Liang J, Burlison S, Subashi E, Godoy Scribes P, Tringale KR, Romesser PB, Reyngold M, Crane CH.  
PMID: 34307919 DOI: 10.1016/j.phro.2021.07.006.

**Magnetic resonance guided radiation therapy for pancreatic adenocarcinoma, advantages, challenges, current approaches, and future directions.**

**Front Oncol. 2021;11:628155.**

Hall WA, Small C, Paulson E, Koay EJ, Crane C, Intven M, Daamen LA, Meijer GJ, Heerkens HD, Bassetti M, Rosenberg SA, Aitken K, Myrehaug S, Dawson LA, Lee P, Gani C, Chuong MD, Parikh PJ, Erickson BA.  
PMID: 34046339 DOI: 10.3389/fonc.2021.628155.

---

**Auto-segmentation of pancreatic tumor in multi-parametric MRI using deep convolutional neural networks.**  
**Radiother Oncol.** 2020;145:193–200.

Liang Y, Schott D, Zhang Y, Wang Z, Nasief H, Paulson E, Hall W, Knechtges P, Erickson B, Li XA.  
PMID: 32045787 DOI: 10.1016/j.radonc.2020.01.021.

## Genitourinary (13)

---

### Bladder

**Comparison of Library of Plans with two daily adaptive strategies for whole bladder radiotherapy.**

**Phys Imaging Radiat Oncol.** 2021;20:82–7.

den Boer D, den Hartogh MD, Kotte ANTJ, van der Voort van Zyp JRN, Noteboom JL, Bol GH, Willigenburg T, Werensteijn-Honingh AM, Jurgenliemk-Schulz IM, van Lier ALHMMW, Kroon PS.

PMID: 34849413 DOI: 10.1016/j.phro.2021.11.002.

**MR-guided adaptive radiotherapy for bladder cancer.**

**Front Oncol.** 2021;11:637591.

Hijab A, Tocco B, Hanson I, Meijer H, Nyborg CJ, Bertelsen AS, Smeenk RJ, Smith G, Michalski J, Baumann BC, Hafeez S.

PMID: 33718230 DOI: 10.3389/fonc.2021.637591.

**Feasibility of magnetic resonance guided radiotherapy for the treatment of bladder cancer.**

**Clin Transl Radiat Oncol.** 2020;25:46–71.

Hunt A, Hanson I, Dunlop A, Barnes H, Bower L, Chick J, Cruickshank C, Hall E, Herbert T, Lawes R, McQuaid D, McNair H, Mitchell A, Mohajer J, Morgan T, Oelfke U, Smith G, Nill S, Huddart R, Hafeez S.

PMID: 33015380 DOI: 10.1016/j.ctro.2020.09.002.

**The potential of MRI-guided online adaptive re-optimisation in radiotherapy of urinary bladder cancer.**

**Radiother Oncol.** 2015;118(1):154–9.

Vestergaard A, Hafeez S, Muren LP, Nill S, Hoyer M, Hansen VN, Gronborg C, Pedersen EM, Petersen JB, Huddart R, Oelfke U.

PMID: 26631646 DOI: 10.1016/j.radonc.2015.11.003.

### Kidney

**A case study of DIBH to spare abdominal organs at risk for renal cell carcinoma MR-guided radiotherapy.**

**Med Dosim.** 2022

Yorio SD, Lenards N, Hunzeker A.

PMID: 35216879 DOI: 10.1016/j.meddos.2022.01.002.

**Adaptive magnetic resonance-guided stereotactic body radiotherapy: The next step in the treatment of renal cell carcinoma.**

**Front Oncol.** 2021;11:634830.

Keller B, Bruynzeel AME, Tang C, Swaminath A, Kerkmeijer L, Chu W.

PMID: 34046341 DOI: 10.3389/fonc.2021.634830.

**Intrafraction motion management of renal cell carcinoma with magnetic resonance imaging-guided stereotactic body radiation therapy.**

**Pract Radiat Oncol.** 2018;9(1):e55–61.

Prins FM, Stemkens B, Kerkmeijer LGW, Barendrecht MM, de Boer HJ, Voncken EPA, Lagendijk JJW, Tijssen RHN.

PMID: 30261329 DOI: 10.1016/j.prro.2018.09.002.

**Effect of intra-fraction motion on the accumulated dose for free-breathing MR-guided stereotactic body radiation therapy of renal-cell carcinoma.**

**Phys Med Biol.** 2017;62(18):7407–24.

Stemkens B, Glitzner M, Kontaxis C, de Senneville BD, Prins FM, Crijns SPM, Kerkmeijer LGW, Lagendijk JJW, van den Berg CAT, Tijssen RHN.

PMID: 28771144 DOI: 10.1088/1361-6560/aa83f7.

---

**A new methodology for inter- and intrafraction plan adaptation for the MR-Linac.**

**Phys Med Biol.** 2015;60:7485–97.

Kontaxis C, Bol GH, Lagendijk JJ, Raaymakers BW.  
PMID: 26371425 DOI: 10.1088/0031-9155/60/19/7485.

**Dosimetric feasibility of MRI-guided external beam radiotherapy of the kidney.**

**Phys Med Biol.** 2013;58:4933–41.

Stam MK, van Vulpen M, Barendrecht MM, Zonnenberg BA, Crijs SP, Lagendijk JJ, Raaymakers BW.  
PMID: 23798643 DOI: 10.1088/0031-9155/58/14/4933.

**Kidney motion during free breathing and breath hold for MR-guided radiotherapy.**

**Phys Med Biol.** 2013;58(7):2235–45.

Stam MK, van Vulpen M, Barendrecht MM, Zonnenberg BA, Intven M, Crijs SP, Lagendijk JJ, Raaymakers BW.  
PMID: 23475278 DOI: 10.1088/0031-9155/58/7/2235.

**A new concept for non-invasive renal tumour ablation using real-time MRI-guided radiation therapy.**

**BJU Int.** 2010;107(1):63–8.

Kerkhof EM, Raaymakers BW, van Vulpen M, Zonnenberg BA, Bosch JL, van Moorselaar RJ, Lagendijk JJ.  
PMID: 20560949 DOI: 10.1111/j.1464-410X.2010.09458.x.

## Prostate, Rectum

**Evaluation of plan quality in radiotherapy planning with an MR-Linac.**

**Phys Imaging Radiat Oncol.** 2019;10:19–24.

van de Schoot AJAJ, van den Wollenberg W, Carbaat C, de Ruiter P, Nowee ME, Pos F, van Triest B, Sonke JJ, Janssen TM.  
PMID: 33458263 DOI: 10.1016/j.phro.2019.04.004.

## Gynecologic (4)

---

### Cervix

**Assessment of dose accuracy for online MR-guided radiotherapy for cervical carcinoma.**

**J Radiat Res.** 2021;14:159–70.

Shouliang D, Hongdong L, Yongbao L, Bin W, Rui L, Biaoshui L, Yi O, Dehua W, Xiaoyan H.  
PMID: 10000000004 DOI: 10.1080/16878507.2021.1888243.

**The potential value of MRI in external-beam radiotherapy for cervical cancer.**

**Clin Oncol (R Coll Radiol).** 2018;30:737–50.

Cree A, Livsey J, Barraclough L, Dubec M, Hambrook T, Van Herk M, Choudhury A, McWilliam A.  
PMID: 30209010 DOI: 10.1016/j.clon.2018.08.002.

**Online MRI guidance for healthy tissue sparing in patients with cervical cancer: An IMRT planning study.**

**Radiother Oncol.** 2008;88(2):241–9.

Kerkhof EM, Raaymakers BW, van der Heide UA, van de Bunt L, Jurgenliemk-Schulz IM, Lagendijk JJ.  
PMID: 18490068 DOI: 10.1016/j.radonc.2008.04.009.

### Other

**Online magnetic resonance-guided radiotherapy (oMRgRT) for gynecological cancers.**

**Front Oncol.** 2021;11:628131.

Portelance L, Corradini S, Erickson B, Lalondrelle S, Padgett K, van der Leij F, van Lier A, Jürgenliemk-Schulz I.  
PMID: 10000000007 DOI: 10.3389/fonc.2021.628131.

# Head & Neck (21)

---

## General

**Dose accumulation of daily adaptive plans to decide optimal plan adaptation strategy for head-and-neck patients treated with MR-Linac.**

**Med Dosim. 2022;47(1):103–09.**

Lim SY, Tran A, Tran ANK, Sobremonte A, Fuller CD, Simmons L, Yang J.  
PMID: 34756493 DOI: 10.1016/j.meddos.2021.08.005.

**Online adaptive radiotherapy for head and neck cancers on the MR linear accelerator: Introducing a novel modified adapt-to-shape approach.**

**Clin Transl Radiat Oncol. 2022;32:48–51.**

Gupta A, Dunlop A, Mitchell A, McQuaid D, Nill S, Barnes H, Newbold K, Nutting C, Bhide S, Oelfke U, Harrington KJ, Wong KH.  
PMID: 34849412 DOI: 10.1016/j.ctro.2021.11.001.

**Comprehensive Quantitative Evaluation of Inter-observer Delineation Performance of MR-guided Delineation of Oropharyngeal Gross Tumor Volumes and High-risk Clinical Target Volumes: An R-IDEAL Stage 0 Prospective Study.**

Cardenas CE, Blinde SE, Ng SP, Mohamed ASR, Pameijer FA, Kotte ANTJ, Raaijmakers C, McDonald BA, Al-Mamgani AA, Navran A, Hamming-Vrieze O, Kasperts N, Doornaert P, Dehnad H, Smid EJ, Sykes AJ, Thomson D, Lee LW, McPartlin Andrew, Robbins J, Newbold K, Nutting CM, Karam I, Poon I, Philippens M, Elhalawani H, Kamal M, Meheissen M, Garden AS, Morrison WH, Phan J, Gunn GB, Frank SJ, Rosenthal DI, Blanchard P, Bahig H, Fuller CD, Terhaard CHJ.  
PMID: 10000000010 DOI: 10.1101/2022.01.24.22269596.

**Patterns of care, tolerability, and safety of the first cohort of patients treated on a novel high-field MR-Linac within the MOMENTUM study: Initial results from a prospective multi-institutional registry.**

**Int J Radiat. 2021;111(4):867–75.**

de Mol van Otterloo SR, Christodouleas JP, Blezer ELA, Akhlat H, Brown K, Choudhury A, Eggert D, Erickson BA, Daamen LA, Faivre-Finn C, Fuller CD, Goldwein J, Hafeez S, Hall E, Harrington KJ, van der Heide UA, Huddart RA, Intven MPW, Kirby AM, Lalondrelle S, McCann C, Minsky BD, Mook S, Nowee ME, Oelfke U, Orlling K, Philippens MEP, Sahgal A, Schultz CJ, Tersteeg RJHA, Tijssen RHN, Tree AC, van Triest B, Tseng CL, Hall WA, Verkooijen HM.  
PMID: 34265394 DOI: 10.1016/j.ijrobp.2021.07.003.

**MR-guided radiotherapy for head and neck cancer: Current developments, perspectives, and challenges.**

**Front Oncol. 2021;11:616156.**

Boeke S, Mönnich D, van Timmeren JE, Balermipas P.  
PMID: 33816247 DOI: 10.3389/fonc.2021.616156.

**Accuracy of automatic structure propagation for daily magnetic resonance image-guided head and neck radiotherapy.**

**Acta Oncol. 2021;60:589–97.**

Christiansen RL, Johansen J, Zukauskaite R, Hansen CR, Bertelsen AS, Hansen O, Mahmood F, Brink C, Bernchou U.  
PMID: 33688793 DOI: 10.1080/0284186X.2021.1891282.

**An evaluation of MR-based deep learning auto-contouring for planning head and neck radiotherapy.**

**Radiother Oncol. 2021;158:112–7.**

Hague C, McPartlin A, Lee LW, Hughes C, Mullan D, Beasley W, Green A, Price G, Whitehurst P, Slevin N, van Herk M, West C, Chuter R.  
PMID: 33636229 DOI: 10.1016/j.radonc.2021.02.018.

**Initial feasibility and clinical implementation of daily MR-guided adaptive head and neck cancer radiation therapy on a 1.5T MR-Linac system: Prospective R-IDEAL 2a/2b systematic clinical evaluation of technical innovation.**

**Int J Radiat. 2020;109(5):1606–18.**

McDonald BA, Vedam S, Yang J, Wang J, Castillo P, Lee B, Sobremonte A, Ahmed S, Ding Y, Mohamed ASR, Balter P, Hughes N, Thorwarth D, Nachbar M, Philippens MEP, Terhaard CHJ, Zips D, Boke S, Awan MJ, Christodouleas J, Fuller CD.  
PMID: 33340604 DOI: 10.1016/j.ijrobp.2020.12.015.

**The impact of restricted length of treatment field and anthropometric factors on selection of head and neck cancer patients for treatment on the MR-Linac.**

**Br J Radiol. 2020;193(1111):20200023.**

Ng-Cheng-Hin B, Nutting C, Newbold K, Bhide S, McQuaid D, Dunlop A, Harrington K, Wong KH.  
PMID: 32436787 DOI: 10.1259/bjr.20200023.

---

**Impact of magnetic field on dose distribution in MR-guided radiotherapy of head and neck cancer.**

**Front Oncol.** 2020;10:01739.

Xia W, Zhang K, Li M, Tian Y, Men K, Wang J, Yi J, Li Y, Dai J.  
PMID: 33014859 DOI: 10.3389/fonc.2020.01739.

**Repetitive MRI of organs at risk in head and neck cancer patients undergoing radiotherapy.**

**Clin Transl Radiat Oncol.** 2019;18:131–9.

Stieb S, Elgohari B, Fuller CD.  
PMID: 31341989 DOI: 10.1016/j.ctro.2019.04.014.

**Dosimetric evaluation of synthetic CT for head and neck radiotherapy generated by a patch-based three-dimensional convolutional neural network.**

**Med Phys.** 2019;46(9):4095–104.

Dinkla AM, Florkow MC, Maspero M, Savenije MHF, Zijlstra F, Doornaert PAH, van Stralen M, Philippens MEP, van den Berg CAT, Seevinck PR.  
PMID: 31206701 DOI: 10.1002/mp.13663.

**Prospective quantitative quality assurance and deformation estimation of MRI-CT image registration in simulation of head and neck radiotherapy patients.**

**Clin Transl Radiat Oncol.** 2019;18:120–7.

Kiser K, Meheissen MAM, Mohamed ASR, Kamal M, Ng SP, Elhalawani H, Jethanandani A, He R, Ding Y, Rostom Y, Hegazy N, Bahig H, Garden A, Lai S, Phan J, Gunn GB, Rosenthal D, Frank S, Brock KK, Wang J, Fuller CD.  
PMID: 31341987 DOI: 10.1016/j.ctro.2019.04.018.

**Geometric and dosimetric evaluations of atlas-based segmentation methods of MR images in the head and neck region.**

**Phys Med Biol.** 2018;63(12):125020.

Kieselmann JP, Kamerling CP, Burgos N, Menten MJ, Fuller CD, Nill S, Cardoso MJ, Oelfke U.  
PMID: 29882749 DOI: 10.1088/1361-6560/aac665.

**Assessing MR-Linac radiotherapy robustness for anatomical changes in head and neck cancer.**

**Phys Med Biol.** 2018;63:125020.

Chuter RW, Pollitt A, Whitehurst P, MacKay RI, van Herk M, McWilliam A.  
PMID: 29790861 DOI: 10.1088/1361-6560/aac749.

**Target volume delineation using diffusion-weighted imaging for MR-guided radiotherapy: A case series of laryngeal cancer validated by pathology.**

**Cureus** 2018;10(4):e2465.

Ligtenberg H, Schakel T, Dankbaar JW, Ruiter LN, Peltenburg B, Willems SM, Kasperts N, Terhaard CHJ, Raaijmakers CPJ, Philippens MEP.  
PMID: 29900085 DOI: 10.7759/cureus.2465.

**The emerging potential of magnetic resonance imaging in personalizing radiotherapy for head and neck cancer: An oncologist's perspective.**

**Br J Radiol.** 2017;90(1071):20160768.

Wong KH, Panek R, Bhide SA, Nutting CM, Harrington KJ, Newbold KL.  
PMID: 28256151 DOI: 10.1259/bjr.20160768.

## Oropharynx

**The impact of gadolinium-based MR contrast on radiotherapy planning for oropharyngeal treatment on the MR Linac.**

**Med Phys.** 2022;49(1):510–20.

Hales RB, Chuter R, McWilliam A, Salah A, Dubec M, Freear L, McDaid L, Aznar M, van Herk M, McPartlin A, Eccles CL.  
PMID: 34741308 DOI: 10.1002/mp.15325.

---

**Magnetic resonance-based response assessment and dose adaptation in human papilloma virus positive tumors of the oropharynx treated with radiotherapy (MR-ADAPTOR): An R-IDEAL stage 2a-2b/Bayesian phase II trial.**

**Clin Transl Radiat Oncol.** 2018;13:19–23.

Bahig H, Yuan Y, Mohamed ASR, Brock KK, Ng SP, Wang J, Ding Y, Hutcheson K, McCulloch M, Balter PA, Lai SY, Al-Mamgani A, Sonke JJ, van der Heide UA, Nutting C, Li XA, Robbins J, Awan M, Karam I, Newbold K, Harrington K, Oelfke U, Bhide S, Philippens MEP, Terhaard CHJ, McPartlin AJ, Blanchard P, Garden AS, Rosenthal DI, Gunn GB, Phan J, Cazoulat G, Aristophanous M, McSpadden KK, Garcia JA, van den Berg CAT, Raaijmakers CPJ, Kerkmeijer L, Doornaert P, Blinde S, Frank SJ, Fuller CD.

PMID: 30386824 DOI: 10.1016/j.ctro.2018.08.003.

**Prospective in silico study of the feasibility and dosimetric advantages of MRI-guided dose adaptation for human papillomavirus positive oropharyngeal cancer patients compared with standard IMRT.**

**Clin Transl Radiat Oncol.** 2018;11:11–8.

Mohamed ASR, Bahig H, Aristophanous M, Blanchard P, Kamal M, Ding Y, Cardenas CE, Brock KK, Lai SY, Hutcheson KA, Phan J, Wang J, Ibbott G, Gabr RE, Narayana PA, Garden AS, Rosenthal DI, Gunn GB, Fuller CD.

PMID: 30014042 DOI: 10.1016/j.ctro.2018.04.005.

## Other

**MRIGRT head and neck anthropomorphic QA phantom: Design, development, reproducibility, and feasibility study.**

**Med Phys.** 2020;47(2):604–13.

Steinmann A, Alvarez P, Lee H, Court L, Stafford R, Sawakuchi G, Wen Z, Fuller CD, Followill D.

PMID: 31808949 DOI: 10.1002/mp.13951.

## Heart (3)

---

**First experimental exploration of real-time cardiorespiratory motion management for future stereotactic arrhythmia radioablation treatments on the MR-Linac.**

**Phys Med Biol.** 2022;67(6).

Akdag O, Borman PTS, Woodhead PL, Uijtewaal P, Mandija S, van Asselen B, Verhoeff JJC, Raaymakers BW, Fast MF.

PMID: 35189610 DOI: 10.1088/1361-6560/ac5717.

**Feasibility of cardiac-synchronized quantitative T1 and T2 mapping on a hybrid 1.5 Tesla magnetic resonance imaging and linear accelerator system.**

**Phys Imaging Radiat Oncol.** 2022;21:153–50.

Akdag O, Mandija S, van Lier ALHMW, Borman PTS, Schakel T, Alberts E, van der Heide O, Hassink RJ, Verhoeff JJC, Mohamed Hoesein FAA, Raaymakers BW, Fast MF.

PMID: 35287380 DOI: 10.1016/j.phro.2022.02.017.

**Sarcoma of the heart treated with stereotactic MR-guided online adaptive radiation therapy.**

**Case Rep Oncol.** 2021;14(1):453–8.

Pomp J, van Asselen B, Tersteeg RHA, Vink A, Hassink RJ, van der Kaaij NP, van Aarnhem GEEHL, Verhoeff JJC.

PMID: 33790766 DOI: 10.1159/000513623.

## Lymphoid tissues (2)

---

**A convolutional neural network for contouring metastatic lymph nodes on diffusion-weighted magnetic resonance images for assessment of radiotherapy response.**

**Phys Imaging Radiat Oncol.** 2020;15:1–7.

Gurney-Champion OJ, Kieselmann JP, Wong KH, Ng-Cheng-Hin B, Harrington K, Oelfke U.

PMID: 33043156 DOI: 10.1016/j.phro.2020.06.002.

**Individual lymph nodes: “See it and zap it”.**

**Clin Transl Radiat Oncol.** 2019;18:46–53.

Winkel D, Werensteijn-Honingh AM, Kroon PS, Eppinga WSC, Bol GH, Intven MPW, de Boer HCJ, Snoeren LMW, Hes J, Raaymakers BW, Jürgenliemk-Schulz IM.

PMID: 31341975 DOI: 10.1016/j.ctro.2019.03.004.

## Multiple Indications (9)

---

### Abdomen (general), Pelvis (general)

**Tumor-site specific geometric distortions in high field integrated magnetic resonance linear accelerator radiotherapy.**

**Phys Imaging Radiat Oncol. 2020;15:100–4.**

Hasler SW, Bernchou U, Bertelsen A, van Veldhuizen E, Schytte T, Hansen VN, Brink C, Mahmood F.  
PMID: 33458333 DOI: 10.1016/j.phro.2020.07.007.

### Breast, Pancreas, Lung, Head&Neck (general)

**Technical Note: Dose effects of 1.5 T transverse magnetic field on tissue interfaces in MRI-guided radiotherapy.**

**Med Phys. 2016;43(8):4797–802.**

Chen X, Prior P, Chen GP, Schultz CJ, Li XA.  
PMID: 27487897 DOI: 10.1118/1.4959534.

### Brain, Esophagus, Lung, Rectum

**Comparison of intensity modulated radiotherapy treatment plans between 1.5T MR-Linac and conventional linac.**

**Technol Cancer Res Treat. 2021;20:1.53303382098587E+15.**

Ding S, Li Y, Liu H, Li R, Wang B, Zhang J, Chen Y, Huang X.  
PMID: 33472549 DOI: 10.1177/1533033820985871.

### Pancreas, Liver, Kidney

**The radiobiological impact of motion tracking of liver, pancreas and kidney SBRT tumors in a MR-Linac.**

**Phys Med Biol. 2018;63:215022.**

Al-Ward S, Wronski M, Ahmad SB, Myrehaug S, Chu W, Sahgal A, Keller BM.  
PMID: 30375365 DOI: 10.1088/1361-6560/aae7fd.

### Pancreas, Prostate

**MRI-based IMRT planning for MR-linac: comparison between CT- and MRI-based plans for pancreatic and prostate cancers.**

**Phys Med Biol. 2016;61:3819–42.**

Prior P, Chen X, Botros M, Paulson ES, Lawton C, Erickson B, Li XA.  
PMID: 27089554 DOI: 10.1088/0031-9155/61/10/3819.

### Other, Rectum

**Realizing the potential of magnetic resonance image guided radiotherapy in gynaecological and rectal cancer.**

**Br J Radiol. 2019;92(1098):200180670.**

White IM, Scurr E, Wetscherek A, Brown G, Sohaib A, Nill S, Oelfke U, Dearnaley D, Lalondrelle S, Bhide S.  
PMID: 30933550 DOI: 10.1259/bjr.20180670.

### Lymphoid tissues, Prostate, Ovary

**First clinical experiences with a high field 1.5 T MR-Linac.**

**Acta Oncol. 2019;58(10):1352–7.**

Bertelsen AS, Schytte T, Moller PK, Mahmood F, Riis HL, Gottlieb KL, Agergaard SN, Dysager L, Hansen O, Gornitzka J, Veldhuizen E, ODwyer DB, Christiansen RL, Nielsen M, Jensen HR, Brink C, Bernchou U.  
PMID: 31241387 DOI: 10.1080/0284186X.2019.1627417.

---

## Lymphoid tissues, Oligometas

**Feasibility of stereotactic radiotherapy using a 1.5T MR-Linac: Multi-fraction treatment of pelvic lymph node oligometastases.**

**Radiother Oncol. 2019;134:50–4.**

Werensteijn-Honingh AM, Kroon PS, Winkel D, Aalbers EM, van Asselen B, Bol GH, Brown KJ, Eppinga WSC, van Es CA, Glitznier M, de Groot-van Breugel EN, Hackett SL, Intven M, Kok JGM, Kontaxis C, Kotte AN, Lagendijk JJW, Philippens MEP, Tijssen RHN, Wolthaus JWH, Woodings SJ, Raaymakers BW, Jurgenliemk-Schulz IM.

PMID: 31005224 DOI: 10.1016/j.radonc.2019.01.024.

## Lung, Prostate

**Using the Malthus programme to predict the recruitment of patients to MR-Linac research trials in prostate and lung cancer.**

**Radiother Oncol. 2016;122(2):159–62.**

Sanderson B, McWilliam A, Faivre-Finn C, Kirkby NF, Jena R, Mee T, Choudhury A.

PMID: 27939554 DOI: 10.1016/j.radonc.2016.11.014.

## Musculoskeletal (1)

**The feasibility of utilizing pseudo CT-data for online MRI-based treatment plan adaptation for a stereotactic radiotherapy treatment of spinal bone metastases.**

**Phys Med Biol. 2014;59(23):7383–91.**

Hoogcarspel SJ, Van der Velden JM, Lagendijk JJ, van Vulpen M, Raaymakers BW.

PMID: 25386792 DOI: 10.1088/0031-9155/59/23/7383.

## Oligometastases (3)

**Dosimetric feasibility of hypofractionation for SBRT treatment of lymph node oligometastases on the 1.5T MR-Linac.**

**Radiother Oncol. 2021;154:243–8.**

Winkel D, Werensteijn-Honingh AM, Eppinga WSC, Intven MPW, Hes J, Snoeren LMW, Visser SA, Bol GH, Raaymakers BW, Jurgenliemk-Schulz IM, Kroon PS.

PMID: 32949691 DOI: 10.1016/j.radonc.2020.09.020.

**Impact of a vacuum cushion on intrafraction motion during online adaptive MR-guided SBRT for pelvic and para-aortic lymph node oligometastases.**

**Radiother Oncol. 2021;154:110–7.**

Werensteijn-Honingh AM, Jürgenliemk-Schulz IM, Gadellaa-Van Hooijdonk CG, Sikkes GG, Vissers NGPM, Winkel D, Eppinga WSC, Intven M, Raaymakers BW, Kroon PS.

PMID: 32950531 DOI: 10.1016/j.radonc.2020.09.021.

**Evaluation of plan adaptation strategies for stereotactic radiotherapy of lymph node oligometastases using online magnetic resonance image guidance.**

**Phys Imaging Radiat Oncol. 2019;9:58–64.**

Winkel D, Bol GH, Werensteijn-Honingh AM, Kiekebosch IH, van Asselen B, Intven MPW, Eppinga WSC, Raaymakers BW, Jurgenliemk-Schulz IM, Kroon PS.

PMID: 33458426 DOI: 10.1016/j.phro.2019.02.003.



## Oligometastases, Lymphoid tissues (1)

---

**Target coverage and dose criteria based evaluation of the first clinical 1.5T MR-Linac SBRT treatments of lymph node oligometastases compared with conventional CBCT-linac treatment.**

**Radiother Oncol.** 2020;146:118–25.

Winkel D, Bol GH, Werensteijn-Honingh AM, Intven MPW, Eppinga WSC, Hes J, Snoeren LMW, Sikkes GG, Gadellaa-van Hooijdonk CGM, Raaymakers BW, Jurgenliemk-Schulz IM, Kroon PS.

PMID: 32146257 DOI: 10.1016/j.radonc.2020.02.011.

## Pediatric (1)

---

**The potential role of MR-guided adaptive radiotherapy in pediatric oncology: Results from a SIOPE-COG survey.**

**Clin Transl Radiat Oncol.** 2021;29:71–8.

Seravalli E, Kroon PS, Buatti JM, Hall MD, Mandeville HC, Marcus KJ, Onal C, Ozyar E, Paulino AC, Paulsen F, Saunders D, Tsang DS, Wolden SL, Janssens GO.

PMID: 34159265 DOI: 10.1016/j.ctro.2021.05.008.

## Pelvis (65)

---

**Reducing MRI-guided radiotherapy planning and delivery times via efficient leaf sequencing and segment shape optimization algorithms.**

**Phys Med Biol.** 2022;67(5).

Snyder JE, St-Aubin J, Yaddanapudi S, Marshall S, Strand S, Kruger S, Flynn RT, Hyer DE.

PMID: 35130528 DOI: 10.1088/1361-6560/ac5299.

**Feasibility, usability and acceptance of weekly electronic patient-reported outcomes among patients receiving pelvic CT- or online MR-guided radiotherapy: A prospective pilot study.**

**Tech Innov Patient Support Radiat Oncol.** 2021;21:8–15.

Møller PK, Pappot H, Bernchou U, Schytte T, Mortensen ZV, Brúnni MFÁ, Dieperink KB.

PMID: 10000000007 DOI: 10.1016/j.tipsro.2021.12.001.

**Patterns of care, tolerability, and safety of the first cohort of patients treated on a novel high-field MR-Linac within the MOMENTUM study: Initial results from a prospective multi-institutional registry.**

**Int J Radiat.** 2021;111(4):867–75.

de Mol van Otterloo SR, Christodouleas JP, Blezer ELA, Akhlat H, Brown K, Choudhury A, Eggert D, Erickson BA, Daamen LA, Faivre-Finn C, Fuller CD, Goldwein J, Hafeez S, Hall E, Harrington KJ, van der Heide UA, Huddart RA, Intven MPW, Kirby AM, Lalondrelle S, McCann C, Minsky BD, Mook S, Nowee ME, Oelfke U, Orrling K, Philippens MEP, Sahgal A, Schultz CJ, Tersteeg RJHA, Tijssen RHN, Tree AC, van Triest B, Tseng CL, Hall WA, Verkooijen HM.

PMID: 34265394 DOI: 10.1016/j.ijrobp.2021.07.003.

**Mitigation on bowel loops daily variations by 1.5-T MR-guided daily-adaptive SBRT for abdomino-pelvic lymph-nodal oligometastases.**

**J Cancer Res Clin Oncol.** 2021;147:3269–77.

Cuccia F, Rigo M, Gurrera D, Nicosia L, Mazzola R, Figlia V, Giaj-Levra N, Ricchetti F, Attina G, Pastorello E, De Simone A, Naccarato S, Sicignano G, Ruggieri R, Alongi F.

PMID: 34268583 DOI: 10.1007/s00432-021-03739-8.

**Inter- and intra-fractional stability of rectal gas in pelvic cancer patients during MRIGRT.**

**Med Phys.** 2021;48(1):414–26.

Shortall J, Vasquez Osorio E, Cree A, Song Y, Dubec M, Chuter R, Price G, McWilliam A, Kirkby K, Mackay R, van Herk M.

PMID: 33164217 DOI: 10.1002/mp.14586.

**Laser-free pelvic alignment in an online adaptive radiotherapy environment.**

**Tech Innov Patient Support Radiat Oncol.** 2020;13:21–23.

Barnes H, Mohajer J, Dunlop A, Adair Smith G, Herbert T, Lawes R, Tree A, McNair H.

PMID: 32128459 DOI: 10.1016/j.tipsro.2020.01.001.

---

**Assessing localized dosimetric effects due to unplanned gas cavities during pelvic MR-guided radiotherapy using Monte Carlo simulations.**

**Med Phys.** 2019;46(12):5807–15.

Shortall J, Vasquez Osorio E, Chuter R, McWilliam A, Choudhury A, Kirkby K, Mackay R, van Herk M.  
PMID: 31600837 DOI: 10.1002/mp.13857.

**Dose evaluation of fast synthetic-CT generation using a generative adversarial network for general pelvis MR-only radiotherapy.**

**Phys Med Biol.** 2018;63:185001.

Maspero M, Savenije MHF, Dinkla AM, Seevinck PR, Intven MPW, Jurgenliemk-Schulz IM, Kerkmeijer LGW, van den Berg CAT.  
PMID: 30109989 DOI: 10.1088/1361-6560/aada6d.

**Automated planning for prostate stereotactic body radiation therapy on the 1.5 T MR-Linac.**

**Adv Radiat Oncol.** 2022;7(3):100865.

Naccarato S, Rigo M, Pellegrini R, Voet P, Akhiat H, Gurrera D, De Simone A, Sicignano G, Mazzola R, Figlia V, Ricchetti F, Nicosia L, Giaj-Levra N, Cuccia F, Stavreva N, Pressyanov DS, Stavrev P, Alongi F, Ruggieri R.  
PMID: 35198836 DOI: 10.1016/j.adro.2021.100865.

**Bladder filling in patients undergoing prostate radiotherapy on a MR-Linac: The dosimetric impact.**

**Tech Innov Patient Support Radiat Oncol.** 2022;21:41–45.

Smith GA, Dunlop A, Barnes H, Herbert T, Lawes R, Mohajer J, Tree AC, McNair HA.  
PMID: 35243043 DOI: 10.1016/j.tipsro.2022.02.002.

**Dosimetric comparison of MR-guided adaptive IMRT versus 3DOF-VMAT for prostate stereotactic radiotherapy.**

**Tech Innov Patient Support Radiat Oncol.** 2022;21:64–70.

Kong VC, Dang J, Li W, Navarro I, Padayachee J, Malkov V, Winter J, Raman S, Berlin A, Catton C, Warde P, Chung P.  
PMID: 35252598 DOI: 10.1016/j.tipsro.2022.02.003.

**Clinical evaluation of autonomous, unsupervised planning integrated in MR-guided radiotherapy for prostate cancer.**

**Radiother Oncol.** 2022;168:229–33.

Kunzel LA, Nachbar M, Hagmuller M, Gani C, Boeke S, Wegener D, Paulsen F, Zips D, Thorwarth D.  
PMID: 35134447 DOI: 10.1016/j.radonc.2022.01.036.

**Interrater agreement of contouring of the neurovascular bundles and internal pudendal arteries in neurovascular-sparing magnetic resonance-guided radiotherapy for localized prostate cancer.**

**Clin Transl Radiat Oncol.** 2021;32:29–34.

Teunissen FR, Wortel RC, Wessels FJ, Claes A, van de Pol SMG, Rasing MJA, Meijer RP, van Melick HHE, de Boer JCJ, Verkooijen HM, van der Voort van Zyp JRN.  
PMID: 10000000001 DOI: 10.1016/j.ctro.2021.11.005.

**Fast and accurate deformable contour propagation for intra-fraction adaptive magnetic resonance-guided prostate radiotherapy.**

**Phys Imaging Radiat Oncol.** 2022;21:62–65.

Willigenburg T, Zachiu C, Lagendijk JJW, van der Voort van Zyp JRN, de Boer HCJ, Raaymakers BW.  
PMID: 35243033 DOI: 10.1016/j.phro.2022.02.008.

**Online adaptive radiotherapy potentially reduces toxicity for high-risk prostate cancer treatment.**

**Radiother Oncol.** 2021;167:165–71.

Lubeck Christiansen R, Dysager L, Ronn Hansen C, Robenhagen Jensen H, Schytte T, Junker Nyborg C, Smedegaard Bertelsen A, Nielsen Agergaard S, Mahmood F, Hansen S, Hansen O, Brink C, Bernchou U.  
PMID: 34923034 DOI: 10.1016/j.radonc.2021.12.013.

**Adaptive magnetic resonance-guided neurovascular-sparing radiotherapy for preservation of erectile function in prostate cancer patients.**

**Phys Imaging Radiat Oncol.** 2021;20:5–10.

Teunissen FR, Wortel RC, Hes J, Willigenburg T, de Groot-van Breugel EN, de Boer JCJ, van Melick HHE, Verkooijen HM, van der Voort van Zyp JRN.  
PMID: 34604553 DOI: 10.1016/j.phro.2021.09.002.

**Vas deferens metastasis from prostate adenocarcinoma treated with daily-adaptive MR-guided SBRT on 1.5T MR-Linac.**

**Reports of Practical Oncology and Radiotherapy.**

Claudio V, Luca N, Edoardo P, Michele R, Joniada D, Matteo S, Filippo A.  
PMID: 10000000003 DOI:

---

**Analysis of online plan adaptation for 1.5T magnetic resonance-guided stereotactic body radiotherapy (MRgSBRT) of prostate cancer.**

**J Cancer Res Clin Oncol.** 2022 Feb 24:1–10.

Poon DMC, Yang B, Geng H, Wong OL, Chiu ST, Cheung KY, Yu SK, Chiu G, Yuan J.  
PMID: 35199189 DOI: 10.1007/s00432-022-03950-1.

**HERMES: Delivery of a Speedy Prostate Cancer Treatment.**

**Clin Oncol (R Coll Radiol).** 2022.

Westley R, Hall E, Tree A.  
PMID: 35093251 DOI: 10.1016/j.clon.2022.01.003.

**1.5T Magnetic Resonance-Guided Stereotactic Body Radiotherapy for Localized Prostate Cancer: Preliminary Clinical Results of Clinician- and Patient-Reported Outcomes.**

**Cancers** 2021;13(19)

Poon DMC, Yuan J, Wong OL, Yang B, Chiu ST, Cheung KY, Chiu G, Yu SK.  
PMID: 34638348 DOI: 10.3390/cancers13194866.

**Intrafractional motion models based on principal components in Magnetic Resonance guided prostate radiotherapy.**

**Phys Imaging Radiat Oncol.** 2021;20:17–22.

Fransson S, Tilly D, Ahnesjo A, Nyholm T, Strand R.  
PMID: 34660917 DOI: 10.1016/j.phro.2021.09.004.

**A narrative review of MRI acquisition for MR-guided-radiotherapy in prostate cancer.**

**Quant Imaging Med Surg.** 2022;12(2):1585–1607.

Yuan J, Poon DMC, Lo G, Wong OL, Cheung KY, Yu SK.  
PMID: 35111651 DOI: 10.21037/qims-21-697.

**MR-guided radiotherapy for prostate cancer: state of the art and future perspectives.**

**Br J Radiol.** 2022;95(1131):20210800.

Sritharan K, Tree A.  
PMID: 35073158 DOI: 10.1259/bjr.20210800.

**Reliability of MRI radiomics features in MR-guided radiotherapy for prostate cancer: Repeatability, reproducibility, and within-subject agreement.**

**Med Phys.** 2021;48(11):6976–86.

Xue C, Yuan J, Poon DM, Zhou Y, Yang B, Yu SK, Cheung YK.  
PMID: 34562286 DOI: 10.1002/mp.15232.

**[Primary treatment of prostate cancer using 1.5 T MR-linear accelerator.]**

**Radiologe.** 2021;61(9):839–45.

Wegener D, Zips D, Gani C, Boeke S, Nikolaou K, Othman AE, Almansour H, Paulsen F, Muller AC.  
PMID: 34297139 DOI: 10.1007/s00117-021-00882-8.

**Impact of hydrogel peri-rectal spacer insertion on seminal vesicles intrafraction motion during 1.5 T-MRI-guided adaptive stereotactic body radiotherapy for localized prostate cancer.**

**Br J Radiol.** 2021;94(1126):20210521.

Mazzola R, Sicignano G, Cuccia F, Vitale C, Rigo M, Giaj-Levra N, Nicosia L, Figlia V, Ricchetti F, Attina G, Pastorello E, De Simone A, Gurrera D, Naccarato S, Ruggieri R, Alongi F.  
PMID: 34283646 DOI: 10.1259/bjr.20210521.

**Seminal vesicle intrafraction motion during the delivery of radiotherapy sessions on a 1.5 T MR-Linac.**

**Radiother Oncol.** 2021;162:162–9.

Muinck Keizer DM de, Willigenburg T, der Voort van Zyp JRN van, Raaymakers BW, Lagendijk JJW, Boer JCJ de.  
PMID: 34293410 DOI: 10.1016/j.radonc.2021.07.014.

**Geometrical imaging accuracy and imaging and plan quality for prostate cancer on a 1.5T MR-Linac in patients with a unilateral hip implant.**

**Phys Med Biol.** 2021;66:205013.

van Lier ALHMW, Meijers LTC, Philippens MEP, Hes J, Raaymakers BW, van der Voort van Zyp JRN, de Boer JCJ.  
PMID: 34243173 DOI: 10.1088/1361-6560/ac1302.

---

**Stereotactic body radiotherapy for oligometastatic castration sensitive prostate cancer using 1.5 T MRI-Linac: preliminary data on feasibility and acute patient-reported outcomes.**

**Radiol Med. 2021;126:989–97.**

Mazzola R, Cuccia F, Figlia V, Rigo M, Nicosia L, Giaj-Levra N, Ricchetti F, Vitale C, Mantoan B, Di Paola G, De Simone A, Gurrera D, Sicignano G, Naccarato S, Ruggieri R, Alongi F.

PMID: 33835309 DOI: 10.1007/s11547-021-01352-w.

**The impact of image acquisition time on registration, delineation and image quality for magnetic resonance guided radiotherapy of prostate cancer patients.**

**Phys Imaging Radiat Oncol. 2021;19:85–9.**

Nowee ME, van Pelt VWJ, Walraven I, Simoes R, Liskamp CP, Lambregts DMJ, Heijmink S, Schaake E, van der Heide UA, Janssen TM.

PMID: 34355071 DOI: 10.1016/j.phro.2021.07.002.

**On-line daily plan optimization combined with a virtual couch shift procedure to address intrafraction motion in prostate magnetic resonance guided radiotherapy.**

**Phys Imaging Radiat Oncol. 2021;19:90–5.**

de Muinck Keizer DM, van der Voort van Zyp JRN, de Groot-van Breugel EN, Raaymakers BW, Lagendijk JJW, de Boer HCJ.

PMID: 34377842 DOI: 10.1016/j.phro.2021.07.010.

**Daily intravoxel incoherent motion (IVIM) in prostate cancer patients during MR-guided radiotherapy-A multicenter study.**

**Front Oncol. 2021;11:705964.**

Kooreman ES, van Houdt PJ, Keesman R, van Pelt VWJ, Nowee ME, Pos F, Sikorska K, Wetscherek A, Muller AC, Thorwarth D, Tree AC, van der Heide UA.

PMID: 34485138 DOI: 10.3389/fonc.2021.705964.

**Development of patient-reported outcomes item set to evaluate acute treatment toxicity to pelvic online magnetic resonance-guided radiotherapy.**

**J Patient-Rep Outcomes. 2021;5:47.**

Moller PK, Pappot H, Bernchou U, Schytte T, Dieperink KB.

PMID: 34160732 DOI: 10.1186/s41687-021-00326-w.

**First experience of autonomous, un-supervised treatment planning integrated in adaptive MR-guided radiotherapy and delivered to a patient with prostate cancer.**

**Radiother Oncol. 2021;159:197–201.**

Kunzel LA, Nachbar M, Hagmuller M, Gani C, Boeke S, Zips D, Thorwarth D.

PMID: 33812912 DOI: 10.1016/j.radonc.2021.03.032.

**Prospective image quality and lesion assessment in the setting of MR-guided radiation therapy of prostate cancer on an MR-Linac at 1.5 T: A comparison to a standard 3 T MRI.**

**Cancers 2021;13(7):1533.**

Almansour H, Afat S, Fritz V, Schick F, Nachbar M, Thorwarth D, Zips D, Muller AC, Nikolaou K, Othman AE, Wegener D.

PMID: 33810410 DOI: 10.3390/cancers13071533.

**An unusual case of oedematous prostate volumetric changes observed over the course of radiotherapy on the MR linear accelerator.**

**J Med Imaging Radiat Sci. 2020;52(1):147–51.**

Clough A, Bridge P, Hales R, McDaid L, Choudhury A, Eccles CL.

PMID: 33342695 DOI: 10.1016/j.jmir.2020.11.019.

**Evaluation of daily online contour adaptation by radiation therapists for prostate cancer treatment on an MRI-guided linear accelerator.**

**Clin Transl Radiat Oncol. 2021;27:50–6.**

Willigenburg T, de Muinck Keizer DM, Peters M, Claes A, Lagendijk JJW, de Boer HCJ, van der Voort van Zyp JRN.

PMID: 33532630 DOI: 10.1016/j.ctro.2021.01.002.

**Online adaptive planning for prostate stereotactic body radiotherapy using a 1.5 Tesla magnetic resonance imaging-guided linear accelerator.**

**Phys Imaging Radiat Oncol. 2020;17:20–4.**

Yang J, Vedam S, Lee B, Castillo P, Sobremonte A, Hughes N, Mohammedsaid M, Wang J, Choi S.

PMID: 33898773 DOI: 10.1016/j.phro.2020.12.001.

---

**Rectal spacer hydrogel in 1.5T MR-guided and daily adapted SBRT for prostate cancer: Dosimetric analysis and preliminary patient-reported outcomes.**

**Br J Radiol. 2020;94:20200848.**

Alongi F, Rigo M, Figlia V, Cuccia F, Giaj-Levra N, Nicosia L, Ricchetti F, Vitale C, Sicignano G, De Simone A, Naccarato S, Ruggieri R, Mazzola R.

PMID: 33095659 DOI: 10.1259/bjr.20200848.

**Adaptive SBRT by 1.5 T MR-Linac for prostate cancer: On the accuracy of dose delivery in view of the prolonged session time.**

**Phys Med. 2020;80:34–41.**

Ruggieri R, Rigo M, Naccarato S, Gurrera D, Figlia V, Mazzola R, Ricchetti F, Nicosia L, Giaj-Levra N, Cuccia F, Vitale C, Stavreva N, Pressyanov DS, Stavrev P, Pellegrini R, Alongi F.

PMID: 33091796 DOI: 10.1016/j.ejmp.2020.09.026.

**Prostate intrafraction motion during the preparation and delivery of MR-guided radiotherapy sessions on a 1.5T MR-Linac.**

**Radiother Oncol. 2020;151:88–94.**

de Muinck Keizer DM, Kerkmeijer LGW, Willigenburg T, van Lier ALHMW, Hartogh MDD, van der Voort van Zyp JRN, de Groot-van Breugel EN, Raaymakers BW, Lagendijk JJW, de Boer JCJ.

PMID: 32622779 DOI: 10.1016/j.radonc.2020.06.044.

**Feasibility and safety of 1.5 T MR-guided and daily adapted abdominal-pelvic SBRT for elderly cancer patients: geriatric assessment tools and preliminary patient-reported outcomes.**

**J Cancer Res Clin Oncol. 2020;146:2379–97.**

Mazzola R, Figlia V, Rigo M, Cuccia F, Ricchetti F, Giaj-Levra N, Nicosia L, Vitale C, Sicignano G, De Simone A, Naccarato S, Ruggieri R, Alongi F.

PMID: 32372146 DOI: 10.1007/s00432-020-03230-w.

**Impact of hydrogel peri-rectal spacer insertion on prostate gland intra-fraction motion during 1.5 T MR-guided stereotactic body radiotherapy.**

**Radiat Oncol. 2020;23:35–42.**

Cuccia F, Mazzola R, Nicosia L, Figlia V, Giaj-Levra N, Ricchetti F, Rigo M, Vitale C, Mantoan B, De Simone A, Sicignano G, Ruggieri R, Cavalleri S, Alongi F.

PMID: 32698843 DOI: 10.1186/s13014-020-01622-3.

**Dosimetric effects of adaptive prostate cancer radiotherapy in an MR-Linac workflow.**

**Radiat Oncol. 2020;15:168.**

Mannerberg A, Persson E, Jonsson J, Gustafsson CJ, Gunnlaugsson A, Olsson LE, Ceberg S.

PMID: 32650811 DOI: 10.1186/s13014-020-01604-5.

**Daily adaptive radiotherapy for patients with prostate cancer using a high field MR-Linac: Initial clinical experiences and assessment of delivered doses compared to a C-arm linac.**

**Clin Transl Radiat Oncol. 2020;23:35–42.**

Dunlop A, Mitchell A, Tree A, Barnes H, Bower L, Chick J, Goodwin E, Herbert T, Lawes R, McNair H, McQuaid D, Mohajer J, Nilawar R, Pathmanathan A, Smith G, Hanson I, Nill S, Oelfke U.

PMID: 32395640 DOI: 10.1016/j.ctro.2020.04.011.

**Focal salvage treatment for radiorecurrent prostate cancer: A magnetic resonance-guided stereotactic body radiotherapy versus high-dose-rate brachytherapy planning study.**

**Phys Imaging Radiat Oncol. 2020;15:60–65.**

Willigenburg T, Beld E, Hes J, Lagendijk JJW, de Boer HCJ, Moerland MA, van der Voort van Zyp JRN.

PMID: 33458327 DOI: 10.1016/j.phro.2020.07.006.

**Delivered dose quantification in prostate radiotherapy using online 3D cine imaging and treatment log files on a combined 1.5T magnetic resonance imaging and linear accelerator system.**

**Phys imaging Radiat Oncol. 2020;15:23–9.**

Kontaxis C, de Muinck Keizer DM, Kerkmeijer LGW, Willigenburg T, den Hartogh MD, van der Voort van Zyp JRN, de Groot-van Breugel EN, Hes J, Raaymakers BW, Lagendijk JJW, de Boer HCJ.

PMID: 33458322 DOI: 10.1016/j.phro.2020.06.005.

---

**Problems and promises of introducing the magnetic resonance imaging linear accelerator into routine care: The case of prostate cancer.**

**Front Oncol. 2020;10:01741.**

Hehakaya C, Van der Voort van Zyp JR, Lagendijk JJW, Grobbee DE, Verkooijen HM, Moors EHM.  
PMID: 32984058 DOI: 10.3389/fonc.2020.01741.

**MR-guided radiotherapy for prostate cancer.**

**Front Oncol. 2020;10:616291.**

Tocco BR, Kishan AU, Ma TM, Kerkmeijer LGW, Tree AC.  
PMID: 33363041 DOI: 10.3389/fonc.2020.616291.

**Automatic reconstruction of the delivered dose of the day using MR-Linac treatment log files and online MR imaging.**

**Radiother Oncol. 2019;145:88–94.**

Menten MJ, Mohajer JK, Nilawar R, Bertholet J, Dunlop A, Pathmanathan AU, Moreau M, Marshall S, Wetscherek A, Nill S, Tree AC, Oelfke U.  
PMID: 31931291 DOI: 10.1016/j.radonc.2019.12.010.

**1.5 T MR-guided and daily adapted SBRT for prostate cancer: Feasibility, preliminary clinical tolerability, quality of life and patient-reported outcomes during treatment.**

**Radiat Oncol. 2020;15:69.**

Alongi F, Rigo M, Figlia V, Cuccia F, Giaj-Levra N, Nicosia L, Ricchetti F, Sicignano G, De Simone A, Naccarato S, Ruggieri R, Mazzola R.  
PMID: 32248826 DOI: 10.1186/s13014-020-01510-w.

**Fast contour propagation for MR-guided prostate radiotherapy using convolutional neural networks.**

**Med Phys. 2019;47:1238–48.**

Eppenhof KAJ, Maspero M, Savenije MHF, de Boer JCJ, van der Voort van Zyp JRN, Raaymakers BW, Raaijmakers AJE, Veta M, van den Berg CAT, Pluim JPW.  
PMID: 31876300 DOI: 10.1002/mp.13994.

**Accuracy of automatic deformable structure propagation for high-field MRI-guided prostate radiotherapy.**

**Radiat Oncol. 2020;15:32.**

Christiansen RL, Dysager L, Bertelsen AS, Hansen O, Brink C, Bernchou U.  
PMID: 32033574 DOI: 10.1186/s13014-020-1482-y.

**Soft-tissue prostate intrafraction motion tracking in 3D cine-MR for MR-guided radiotherapy.**

**Phys Med Biol. 2019;64:235008.**

de Muinck Keizer DM, Kerkmeijer LGW, Maspero M, Andreychenko A, van der Voort van Zyp JRN, van den Berg CAT, Raaymakers BW, Lagendijk JJW, de Boer JCJ.  
PMID: 31698351 DOI: 10.1088/1361-6560/ab5539.

**Prostate cancer—Advantages and disadvantages of MR-guided RT.**

**Clin Transl Radiat Oncol. 2019;18:68–73.**

Murray J, Tree AC.  
PMID: 31341979 DOI: 10.1016/j.ctro.2019.03.006.

**Planning feasibility of extremely hypofractionated prostate radiotherapy on a 1.5T magnetic resonance imaging guided linear accelerator.**

**Phys Imaging Radiat Oncol. 2019;11:16–20.**

den Hartogh MD, de Boer HCJ, de Groot-van Breugel EN, van der Voort van Zyp JRN, Hes J, van der Heide UA, Pos F, Haustermans K, Depuydt T, Jan Smeenk R, Kunze-Busch M, Raaymakers BW, Kerkmeijer LGW.  
PMID: 33458271 DOI: 10.1016/j.phro.2019.07.002.

**Serial T2-weighted magnetic resonance images acquired on a 1.5 Tesla magnetic resonance linear accelerator reveal radiomic feature variation in organs at risk: An exploratory analysis of novel metrics of tissue response in prostate cancer.**

**Cureus 2019;11(4)e4510.**

Lorenz JW, Schott D, Rein L, Mostafaei F, Noid G, Lawton C, Bedi M, Li XA, Schultz CJ, Paulson E, Hall WA.  
PMID: 31259119 DOI: 10.7759/cureus.4510.

**Fiducial marker based intra-fraction motion assessment on cine-MR for MR-Linac treatment of prostate cancer.**

**Phys Med Biol. 2019;64(7):07NT02.**

de Muinck Keizer DM, Pathmanathan AU, Andreychenko A, Kerkmeijer LGW, van der Voort van Zyp JRN, Tree AC, van den Berg CAT, de Boer JCJ.  
PMID: 30794995 DOI: 10.1088/1361-6560/ab09a6.

---

**Comparison of prostate delineation on multimodality imaging for MR-guided radiotherapy.**

**Br J Radiol.** 2019;**92(1096):20180948.**

Pathmanathan AU, McNair HA, Schmidt MA, Brand DH, Delacroix L, Eccles CL, Gordon A, Herbert T, van As NJ, Huddart RA, Tree AC.  
PMID: 30676772 DOI: 10.1259/bjr.20180948.

**Magnetic resonance imaging only workflow for radiotherapy simulation and planning in prostate cancer.**

**Clin Oncol (R Coll Radiol).** 2018;**30(11):692–701.**

Kerkmeijer LGW, Maspero M, Meijer GJ, van der Voort van Zyp JRN, de Boer HCJ, van den Berg CAT.  
PMID: 30244830 DOI: 10.1016/j.clon.2018.08.009.

**Plan quality for high-risk prostate cancer treated with high field magnetic resonance imaging guided radiotherapy.**

**Phys Imaging Radiat Oncol.** 2018;**7;1–8.**

Christiansen RL, Hansen CR, Dahlrot RH, Bertelsen AS, Hansen O, Brink C, Bernchou U.  
PMID: 33458398 DOI: 10.1016/j.phro.2018.06.006.

**Magnetic resonance imaging-guided adaptive radiation therapy: A “game changer” for prostate treatment?**

**Int J Radiat.** 2017;**100(2):361–73.**

Pathmanathan AU, van As NJ, Kerkmeijer LGW, Christodouleas J, Lawton CAF, Vesprini D, van der Heide UA, Frank SJ, Nill S, Oelfke U, van Herk M, Li XA, Mittauer K, Ritter M, Choudhury A, Tree AC.  
PMID: 29353654 DOI: 10.1016/j.ijrobp.2017.10.020.

**Fast online replanning for interfraction rotation correction in prostate radiotherapy.**

**Med Phys.** 2017;**44(10):5034–42.**

Kontaxis C, Bol GH, Kerkmeijer LGW, Lagendijk JJW, Raaymakers BW.  
PMID: 28703497 DOI: 10.1002/mp.12467.

**Development and clinical introduction of automated radiotherapy treatment planning for prostate cancer.**

**Phys Med Biol.** 2016;**61:8587–95.**

Winkel D, Bol GH, van Asselen B, Hes J, Scholten V, Kerkmeijer LG, Raaymakers BW.  
PMID: 27880737 DOI: 10.1088/1361-6560/61/24/8587.

**MRI-guided prostate adaptive radiotherapy—A systematic review.**

**Radiother Oncol.** 2016;**119:371–80.**

McPartlin AJ, Li XA, Kershaw LE, Heide U, Kerkmeijer L, Lawton C, Mahmood U, Pos F, van As N, van Herk M, Vesprini D, van der Voort van Zyp J, Tree A, Choudhury A.  
PMID: 27162159 DOI: 10.1016/j.radonc.2016.04.014.

---

## Rectum (10)

**Interobserver variability in target volume delineation for CT/MRI simulation and MRI guided adaptive radiotherapy in rectal cancer.**

**Br J Radiol.** 2021;**94(1128):20210350.**

White I, Hunt A, Bird T, Settattree S, Soliman H, Mcquaid D, Dearnaley D, Lalondrelle S, Bhide S.  
PMID: 34723622 DOI: 10.1259/bjr.20210350.

**A novel approach for radiotherapy dose escalation in rectal cancer using online MR-guidance and rectal ultrasound gel filling: Rationale and first in human.**

**Radiother Oncol.** 2021;**164:37–42**

Gani C, Lo Russo M, Boeke S, Wegener D, Gatidis S, Butzer S, Boldt J, Monnich D, Thorwarth D, Nikolaou K, Zips D, Nachbar M.  
PMID: 34534612 DOI: 10.1016/j.radonc.2021.09.002.

**Planning target volume margin assessment for online adaptive MR-guided dose-escalation in rectal cancer on a 1.5 T MR-Linac.**

**Radiother Oncol.** 2018;**63(18):185001.**

Eijkelenkamp H, Boekhoff MR, Verweij ME, Peters FP, Meijer GJ, Intven MPW.  
PMID: 34280404 DOI: 10.1016/j.radonc.2021.07.011.

**MR-guided radiotherapy for rectal cancer: Current perspective on organ preservation.**

**Front Oncol.** 2021;**30:619852.**

Boldrini L, Intven M, Bassetti M, Valentini V, Gani C.  
PMID: 33859937 DOI: 10.3389/fonc.2021.619852.



---

**Online adaptive MR-guided radiotherapy for rectal cancer; feasibility of the workflow on a 1.5T MR-linac: clinical implementation and initial experience.**

**Radiother Oncol.** 2021;154:172–8.

Intven MPW, de Mol van Otterloo SR, Mook S, Doornaert PAH, de Groot-van Breugel EN, Sikkes GG, Willemsen-Bosman ME, van Zijp HM, Tijssen RHN.

PMID: 32976875 DOI: 10.1016/j.radonc.2020.09.024.

**1.5 T MR-Linac planning study to compare two different strategies of rectal boost irradiation.**

**Clin Transl Radiat Oncol.** 2020;26:86–91.

Bonomo P, Lo Russo M, Nachbar M, Boeke S, Gatidis S, Zips D, Thorwarth D, Gani C.

PMID: 33336086 DOI: 10.1016/j.ctro.2020.11.016.

**First system for fully-automated multi-criterial treatment planning for a high-magnetic field MR-Linac applied to rectal cancer.**

**Acta Oncol.** 2020;59(8):926–32.

Bijman R, Rossi L, Janssen T, de Ruiter P, Carbaat C, van Triest B, Breedveld S, Sonke JJ, Heijmen B.

PMID: 32436450 DOI: 10.1080/0284186X.2020.1766697.

**Impact of varying air cavity on planning dosimetry for rectum patients treated on a 1.5 T hybrid MR-Linac system.**

**J Appl Clin Med Phys.** 2020;21(7):144–52.

Godoy Scripes P, Subashi E, Burlison S, Liang J, Romesser P, Crane C, Mechalakos J, Hunt M, Tyagi N.

PMID: 32445292 DOI: 10.1002/acm2.12903.

**Evolution of motion uncertainty in rectal cancer: Implications for adaptive radiotherapy.**

**Phys Med Biol.** 2016;61(1).

Kleijnen JP, van Asselen B, Burbach JP, Intven M, Philippens ME, Reerink O, Lagendijk JJ, Raaymakers BW.

PMID: 26605518 DOI: 10.1088/0031-9155/61/1/1.

**A 1.5 T transverse magnetic field in radiotherapy of rectal cancer: Impact on the dose distribution.**

**Med Phys.** 2015;42(12):7182–9.

Uilkema S, van der Heide U, Sonke JJ, Moreau M, van Triest B, Nijkamp J.

PMID: 26632072 DOI: 10.1118/1.4936097.

## Skin (2)

---

**Effects on skin dose from unwanted air gaps under bolus in an MR-guided linear accelerator (MR-Linac) system.**

**Phys Med Biol.** 2021;66(6):065021.

Huang CY, Yang B, Lam WW, Tang KK, Li TC, Law WK, Cheung KY, Yu SK.

PMID: 33607641 DOI: 10.1088/1361-6560/abe837.

**Measurement of electron return effect and skin dose reduction by a bolus in an anthropomorphic physical phantom under a magnetic resonance guided linear accelerator (MR-Linac) system.**

**Int J Med Phys Clin Eng.** 2018;7(3):339–46.

Han EY, Wen Z, Lee HJ, Paulino AD, Lee C.

PMID: 1000000022 DOI: 10.4236/ijmpcero.2018.73028.

## Thorax/Lung (10)

---

**Real-time 3D motion estimation from undersampled MRI using multi-resolution neural networks.**

**Med Phys.** 2021;48(11):6597–6613.

Terpstra ML, Maspero M, Bruijnen T, Verhoeff JJC, Lagendijk JJW, van den Berg CAT.

PMID: 34525223 DOI: 10.1002/mp.15217.

**Initial clinical experience of MR-guided radiotherapy for non-small cell lung cancer.**

**Front Oncol.** 2021;11:617681.

Crockett CB, Samson P, Chuter R, Dubec M, Faivre-Finn C, Green OL, Hackett SL, McDonald F, Robinson C, Shiarli AM, Straza MW, Verhoeff JJC, Werner-Wasik M, Vlacich G, Cobben D.

PMID: 33777759 DOI: 10.3389/fonc.2021.617681.



---

**Impact of field number and beam angle on ERE for lung stereotactic body radiotherapy with 1.5T MR-Linac.**

**Cancer Radiother.** 2021;25(4):366–72.

Ding S, Liu H, Wang B, Li Y, Li R, Liu B, Xia Y, Huang X.  
PMID: 33622638 DOI: 10.1016/j.canrad.2021.01.006.

**The development of a 4D treatment planning methodology to simulate the tracking of central lung tumors in an MRI-Linac.**

**J Appl Clin Med Phys.** 2018;19(1):145–55.

Al-Ward SM, Kim A, McCann C, Ruschin M, Cheung P, Sahgal A, Keller BM.  
PMID: 29194940 DOI: 10.1002/acm2.12233.

**MRI-guided lung SBRT: Present and future developments.**

**Phys Med.** 2017;44:139–49.

Menten MJ, Wetscherek A, Fast MF.  
PMID: 28242140 DOI: 10.1016/j.ejmp.2017.02.003.

**Magnetic resonance imaging in precision radiation therapy for lung cancer.**

**Transl Lung Cancer Res.** 2017;6(6):689–707.

Bainbridge H, Salem A, Tijssen RHN, Dubec M, Wetscherek A, Van Es C, Belderbos J, Faivre-Finn C, McDonald F  
PMID: 29218271 DOI: 10.21037/tlcr.2017.09.02

**Tumour auto-contouring on 2d cine MRI for locally advanced lung cancer: A comparative study.**

**Radiother Oncol.** 2017;125(3):485–91.

Fast MF, Eiben B, Menten MJ, Wetscherek A, Hawkes DJ, McClelland JR, Oelfke U.  
PMID: 29029832 DOI: 10.1016/j.radonc.2017.09.013.

**Treating locally advanced lung cancer with a 1.5T MR-Linac—Effects of the magnetic field and irradiation geometry on conventionally fractionated and isotoxic dose-escalated radiotherapy.**

**Radiother Oncol.** 2017;125(2):280–5.

Bainbridge HE, Menten MJ, Fast MF, Nill S, Oelfke U, McDonald F.  
PMID: 28987747 DOI: 10.1016/j.radonc.2017.09.009.

**Real-time 4D dose reconstruction for tracked dynamic MLC deliveries for lung SBRT.**

**Med Phys.** 2016;43(11):6072–81.

Kamerling CP, Fast MF, Ziegenhein P, Menten MJ, Nill S, Oelfke U.  
PMID: 27806589 DOI: 10.1118/1.4965045.

**Lung stereotactic body radiotherapy with an MR-Linac—Quantifying the impact of the magnetic field and real-time tumor tracking.**

**Radiother Oncol.** 2016;119(3):461–6.

Menten MJ, Fast MF, Nill S, Kamerling CP, McDonald F, Oelfke U.  
PMID: 27165615 DOI: 10.1016/j.radonc.2016.04.019.

## Additional Technical Articles (250)

---

### Clinical Introduction

**Clinical implementational and site-specific workflows for a 1.5T MR-Linac.**

**J Clin Med.** 2-22;11(6):1662

Dunkerley DAP, Hyer DE, Snyder JE, St-Aubin JJ, Anderson CM, Caster JM, Smith MC, Buatti JM, Yaddanapudi S.  
PMID: 35329988 DOI: 10.3390/jcm11061662

**Early experience with MR-guided adaptive radiotherapy using a 1.5 T MR-Linac: First 6 months of operation using adapt to shape workflow.**

**J Med Imaging Radiat Oncol.** 2021;66:138–45.

de Leon J, Crawford D, Moutrie Z, Alvares S, Hogan L, Pagulayan C, Jelen U, Loo C, Aylward JD, Condon K, Dunkerley N, Heinke MY, Sampaio S, Simon K, Twentyman T, Jameson MG.  
PMID: 34643065 DOI: 10.1111/1754-9485.13336.

---

**Evaluation of the palliative radiotherapy pathway in a single institute: Can an MR Linac improve efficiency?**

**J Med Imaging Radiat Sci. 2021;51939-8654(21)00298-8.**

Benson R, Clough A, Nelder C, Pitt E, Portner R, Vassiliou M, McDaid L, Choudhury A, Rembielak A, Eccles C.  
PMID: 34922879 DOI: 10.1016/j.jmir.2021.11.010.

**Implementation of MR-Linac and proton therapy in two radiotherapy departments in the Netherlands: Recommendations based on lessons learned.**

**Radiother Oncol. 2022;167:14-24.**

Jacobs M, Kerkmeijer L, de Ruyscher D, Brunenberg E, Boersma L, Verheij M.  
PMID: 34915064 DOI: 10.1016/j.radonc.2021.12.007.

**Master protocol trial design for technical feasibility of MR-guided radiotherapy.**

**Radiother Oncol. 2022;166:33-36.**

Couwenberg AM, van der Heide UA, Janssen T, van Triest B, Remeijer P, Marijnen CAM, Sonke JJ, Nowee ME.  
PMID: 34785244 DOI: 10.1016/j.radonc.2021.11.009.

**Analysis of data to advance personalised therapy with MR-Linac (ADAPT-MRL).**

**Clin Transl Radiat Oncol. 2021;31:64-70.**

de Leon J, Woods A, Twentyman T, Meade M, Sproule V, Chandran S, Christiansen J, Kennedy N, Marney M, Barooshian K, Plit M, Lynch J, Jagavkar R, Ormandy H, Christodouleas J, Pietzsch F, Chan M, Jameson MG.  
PMID: 34646950 DOI: 10.1016/j.ctro.2021.09.004

**Patient positioning and immobilization procedures for hybrid MR-Linac systems.**

**Radiat Oncol. 2021;16:183.**

Cuccia F, Alongi F, Belka C, Boldrini L, Horner-Rieber J, McNair H, Rigo M, Schoenmakers M, Niyazi M, Slagter J, Votta C, Corradini S.  
PMID: 34544481 DOI: 10.1186/s13014-021-01910-6.

## Dosimetry

**Absolute dosimetry for the MRI-linac: The magnetic field correction factor.**

**White Paper.**

K Smit, B van Asselen, JGM Kok, JJW Lagendijk, BW Raaymakers.  
PMID: 10000000000.

**Dosimetric evaluation of irradiation geometry and potential air gaps in an acrylic miniphantom used for external audit of absolute dose calibration for a hybrid 1.5 T MR-linac system.**

**J Appl Clin Med Phys. 2022;23(2):e13503.**

Tyagi N, Subashi E, Michael Lovelock D, Kry S, Alvarez PE, Hunt MA, Lim SB.  
PMID: 34914175 DOI: 10.1002/acm2.13503.

**Out-of-field dose and its constituent components for a 1.5 T MR-Linac.**

**Phys Med Biol. 2021;66(22).**

Yang B, Tang KK, Huang CY, Geng H, Lam WW, Wong YS, Tse MY, Lau KK, Cheung KY, Yu SK.  
PMID: 34700308 DOI: 10.1088/1361-6560/ac3346.

**Out-of-field dose assessment for a 1.5 T MR-Linac with optically stimulated luminescence dosimeters.**

**Med Phys. 2021;48(7):4027-37.**

Zhang Y, Yan S, Cui Z, Wang Y, Li Z, Yin Y, Li B, Quan H, Zhu J.  
PMID: 33714229 DOI: 10.1002/mp.14839.

**Traceable reference dosimetry in MRI-guided radiotherapy using alanine: Calibration and magnetic field correction factors of ionisation chambers.**

**Phys Med Biol. 2021;66(16):165006.**

Billas I, Bouchard H, Oelfke U, Duane S.  
PMID: 34049290 DOI: 10.1088/1361-6560/ac0680.

**Automatic dosimetric verification of online adapted plans on the Unity MR-Linac using 3D EPID dosimetry.**

**Radiother Oncol. 2021;157:241-6.**

Olaciregui-Ruiz I, Vivas-Maiques B, van der Velden S, Nowee ME, Mijnheer B, Mans A.  
PMID: 33582193 DOI: 10.1016/j.radonc.2021.01.037.

---

**Reference dosimetry in MRI-linacs: Evaluation of available protocols and data to establish a Code of Practice.**

**Phys Med Biol.** 2021;66(5):05TR02.

de Pooter J, Billas I, de Prez L, Duane S, Kapsch RP, Karger CP, van Asselen B, Wolthaus J.  
PMID: 32570225 DOI: 10.1088/1361-6560/ab9efe.

**An end-to-end assessment on the accuracy of adaptive radiotherapy in an MR-Linac.**

**Phys Med Biol.** 2021;66(5):055021.

Axford A, Dikaios N, Roberts DA, Clark CH, Evans PM.  
PMID: 33503604 DOI: 10.1088/1361-6560/abe053.

**End-to-end validation of the geometric dose delivery performance of MR-Linac adaptive radiotherapy.**

**Phys Med Biol.** 2021;66(4):045034.

Bernchou U, Christiansen RL, Bertelsen A, Tilly D, Riis HL, Jensen HR, Mahmood F, Hansen CR, Hansen VN, Schytte T, Brink C.  
PMID: 33321475 DOI: 10.1088/1361-6560/abd3ed.

**Experimental determination of magnetic field correction factors for ionization chambers in parallel and perpendicular orientations.**

**Phys Med Biol.** 2020;65(24):245044.

Pojtinger S, Nachbar M, Ghandour S, Pisaturo O, Pachoud M, Kapsch RP, Thorwarth D.  
PMID: 33181493 DOI: 10.1088/1361-6560/abca06.

**Water calorimetry in MR-Linac: Direct measurement of absorbed dose and determination of chamber k<sub>Q</sub> mag.**

**Med Phys.** 2020;47(12):6458–69.

D'Souza M, Nusrat H, Iakovenko V, Keller B, Sahgal A, Renaud J, Sarfehnia A.  
PMID: 32970325 DOI: 10.1002/mp.14468.

**First-stage validation of a portable imageable MR-compatible water calorimeter.**

**Med Phys.** 2020;47(10):5312–23.

D'Souza M, Nusrat H, Renaud J, Peterson G, Sarfehnia A.  
PMID: 32786081 DOI: 10.1002/mp.14448.

**Influence of beam quality on reference dosimetry correction factors in magnetic resonance guided radiation therapy.**

**Phys Imaging Radiat Oncol.** 2020;16:95–98.

Pojtinger S, Nachbar M, Kapsch RP, Thorwarth D.  
PMID: 33458350 DOI: 10.1016/j.phro.2020.10.005.

**Measurement of surface dose in an MR-Linac with optically stimulated luminescence dosimeters for IMRT beam geometries.**

**Med Phys.** 2020;47(7):3133–42.

Lim-Reinders S, Keller BM, Sahgal A, Chugh B, Kim A.  
PMID: 32302010 DOI: 10.1002/mp.14185.

**Alanine dosimetry in strong magnetic fields: Use as a transfer standard in MRI-guided radiotherapy.**

**Phys Med Biol.** 2020;65(11):115001.

Billas I, Bouchard H, Oelfke U, Shipley D, Gouldstone C, Duane S.  
PMID: 32191920 DOI: 10.1088/1361-6560/ab8148.

**Edge effects in 3D dosimetry: Characterisation and correction of the non-uniform dose response of PRESAGE®.**

**Phys Med Biol.** 2020;65(9):095003.

Costa F, Doran SJ, Hanson IM, Adamovics J, Nill S, Oelfke U.  
PMID: 32143198 DOI: 10.1088/1361-6560/ab7d52.

**Experimental measurement of ionization chamber angular response and associated magnetic field correction factors in MR-Linac.**

**Med Phys.** 2020;47(4):1940–8.

Iakovenko V, Keller B, Sahgal A, Sarfehnia A.  
PMID: 31955432 DOI: 10.1002/mp.14025.

**Surface and near-surface dose measurements at beam entry and exit in a 1.5 T MR-Linac using optically stimulated luminescence dosimeters.**

**Phys Med Biol.** 2020;65(4):045012.

Kim A, Lim-Reinders S, Ahmad SB, Sahgal A, Keller BM.  
PMID: 31860896 DOI: 10.1088/1361-6560/ab64b6.

---

**Commissioning and performance evaluation of RadCalc for the Elekta Unity MRI-Linac.**

**J Appl Clin Med Phys. 2019;20(12):54–62.**

Graves SA, Snyder JE, Boczkowski A, St-Aubin J, Wang D, Yaddanapudi S, Hyer DE.  
PMID: 31722133 DOI: 10.1002/acm2.12760.

**Dosimetric performance of the Elekta Unity MR-Linac system: 2D and 3D dosimetry in anthropomorphic inhomogeneous geometry.**

**Phys Med Biol. 2019;64:225009.**

Pappas E, Kalaitzakis G, Boursianis T, Zoros E, Zourari K, Pappas EP, Makris D, Seimenis I, Efstathopoulos E, Maris TG.  
PMID: 31665709 DOI: 10.1088/1361-6560/ab52ce.

**MRIGRT dynamic lung motion thorax anthropomorphic QA phantom: Design, development, reproducibility, and feasibility study.**

**Med Phys. 2019;46(11):5124–33.**

Steinmann A, Alvarez P, Lee H, Court L, Stafford R, Sawakuchi G, Wen Z, Fuller C, Followill D.  
PMID: 31506963 DOI: 10.1002/mp.13757.

**Low-density gel dosimeter for measurement of the electron return effect in an MR-Linac.**

**Phys Med Biol. 2019;64:205016.**

McDonald BA, Lee HJ, Ibbott GS.  
PMID: 31505483 DOI: 10.1088/1361-6560/ab4321.

**Two-dimensional EPID dosimetry for an MR-Linac: Proof of concept.**

**Med Phys. 2019;46(9):4193–203.**

Torres-Xirau I, Olaciregui-Ruiz I, van der Heide UA, Mans A.  
PMID: 31199521 DOI: 10.1002/mp.13664.

**Evaluation of a lung-equivalent gel dosimeter for MR image-guided radiation therapy.**

**J Phys: Conf Ser. 2019;1305:012012.**

McDonald BA, Lee HJ, Ibbott GS.  
PMID: 10000000005 DOI: 10.1088/1742-6596/1305/1/012012.

**The MD Anderson experience with 3D dosimetry and an MR-Linac.**

**J Phys: Conf Ser. 2019;1305:012011.**

Ibbott GS, Le Hannah J, Roe Y.  
PMID: 10000000006 DOI: 10.1088/1742-6596/1305/1/012011.

**Radiotherapy in the presence of magnetic fields: A brief review of detector response characteristics and the contribution of 3-D measurements to the study of dose distributions at interfaces.**

**J Phys: Conf Ser. 2019;1305:012006.**

Doran SJ.  
PMID: 10000000016 DOI: 10.1088/1742-6596/1305/1/012006.

**Technical Note: Consistency of PTW30013 and FC65-G ion chamber magnetic field correction factors.**

**Med Phys. 2019;46(8):3739–45.**

Woodings SJ, van Asselen B, van Soest TL, de Prez LA, Lagendijk JJW, Raaymakers BW, Wolthaus JWH.  
PMID: 31131902 DOI: 10.1002/mp.13623.

**Dose rate and fractionation dependence of methacrylic acid based polymer gels using optical and MRI techniques.**

**J Phys: Conf Ser. 2019;1305:012008.**

Lee HJ, Roed Y, Ibbott GS.  
PMID: 10000000018 DOI: 10.1088/1742-6596/1305/1/012008.

**Characterization of small PRESAGE™ samples for measurements near the dosimeter edges.**

**J Phys: Conf Ser. 2019;1305:012009.**

Costa F, Doran S, Adamovics J, Nill S, Hanson IM, Oelfke U.  
PMID: 10000000023 DOI: 10.1088/1742-6596/1305/1/012009.

**Polymer gel dosimetry in the presence of a strong magnetic field.**

**J Phys: Conf Ser. 2019;1305:012014.**

Roed Y, Pinsky L, Ibbott G.  
PMID: 10000000024 DOI: 10.1088/1742-6596/1305/1/012014.

---

**A finite element method for the determination of the relative response of ionization chambers in MR-linacs: Simulation and experimental validation up to 1.5 T.**

**Phys Med Biol.** 2019;64:135011.

Pojtinger S, Kapsch RP, Dohm OS, Thorwarth D.  
PMID: 31181560 DOI: 10.1088/1361-6560/ab2837.

**Investigation of TLD and EBT3 performance under the presence of 1.5T, 0.35T, and 0T magnetic field strengths in MR/CT visible materials.**

**Med Phys.** 2019;46:3217–26.

Steinmann A, O'Brien D, Stafford R, Sawakuchi G, Wen Z, Court L, Fuller C, Followill D.  
PMID: 30950071 DOI: 10.1002/mp.13527.

**Measurement validation of treatment planning for a MR-Linac.**

**J Appl Clin Med Phys.** 2019;20(7): 28–38.

Chen X, Paulson ES, Ahunbay E, Sanli A, Klawikowski S, Li XA.  
PMID: 31254376 DOI: 10.1002/acm2.12651.

**Direct measurement of ion chamber correction factors, k<sub>Q</sub> and k<sub>B</sub>, in a 7 MV MRI-Linac.**

**Phys Med Biol.** 2019;64(10):105025.

de Prez L, Woodings S, de Pooter J, van Asselen B, Wolthaus J, Jansen B, Raaymakers B.  
PMID: 30933939 DOI: 10.1088/1361-6560/ab1511.

**Commissioning of a water calorimeter as a primary standard for absorbed dose to water in magnetic fields.**

**Phys Med Biol.** 2019;64(3):035013.

de Prez L, de Pooter J, Jansen B, Woodings S, Wolthaus J, van Asselen B, van Soest T, Kok J, Raaymakers B.  
PMID: 30561378 DOI: 10.1088/1361-6560/aaf975.

**Simultaneous motion monitoring and truth-in-delivery analysis imaging framework for MR-guided radiotherapy.**

**Phys Med Biol.** 2018;63(23):235014.

Mickevicius NJ, Chen X, Boyd Z, Lee HJ, Ibbott GS, Paulson ES.  
PMID: 30474614 DOI: 10.1088/1361-6560/aaec91.

**The characterization of a large multi-axis ionization chamber array in a 1.5 T MRI-Linac.**

**Phys Med Biol.** 2019;63(22):225007.

Perik TJ, Kaas JJ, Greilich S, Wolthaus JWH, Wittkamper FW.  
PMID: 30412476 DOI: 10.1088/1361-6560/aae90a.

**Effect of magnetic field strength on plastic scintillation detector response.**

**Radiat Meas.** 2018;116:10–13.

Therriault-Proulx F, Wen Z, Ibbott G, Beddar S.  
PMID: 30559600 DOI: 10.1016/j.radmeas.2018.06.011.

**A formalism for reference dosimetry in photon beams in the presence of a magnetic field.**

**Phys Med Biol.** 2018;63:125008.

van Asselen B, Woodings SJ, Hackett SL, van Soest TL, Kok JGM, Raaymakers BW, Wolthaus JWH.  
PMID: 29786612 DOI: 10.1088/1361-6560/aac70e.

**Ionization chamber correction factors for MR-Linacs.**

**Phys Med Biol.** 2019;63:11NT03.

Pojtinger S, Dohm OS, Kapsch RP, Thorwarth D.  
PMID: 29762130 DOI: 10.1088/1361-6560/aac4f2.

**Beam characterisation of the 1.5 T MRI-Linac.**

**Phys Med Biol.** 2019;63:11NT03.

Woodings SJ, Bluemink JJ, de Vries JHW, Niatsetski Y, van Veelen B, Schillings J, Kok JGM, Wolthaus JWH, Hackett SL, van Asselen B, van Zijp HM, Pencea S, Roberts DA, Lagendijk JJW, Raaymakers BW.  
PMID: 29521280 DOI: 10.1088/1361-6560/aab566.

**Performance of a PTW 60019 microDiamond detector in a 1.5 T MRI-Linac.**

**Phys Med Biol.** 2018;63(5):05NT04.

Woodings SJ, Wolthaus JWH, van Asselen B, de Vries JHW, Kok JGM, Lagendijk JJW, Raaymakers BW.  
PMID: 29239857 DOI: 10.1088/1361-6560/aaa1c6.

---

**Assessment of image quality and scatter and leakage radiation of an integrated MR-Linac system.**

**Med Phys. 2018;45(3):1204–9.**

Wang J, Yung J, Kadbi M, Hwang K, Ding Y, Ibbott GS.  
PMID: 29363770 DOI: 10.1002/mp.12767.

**Investigating the effect of a magnetic field on dose distributions at phantom-air interfaces using PRESAGE® 3D dosimeter and Monte Carlo simulations.**

**Phys Med Biol. 2018;63:05NT01.**

Costa F, Doran SJ, Hanson IM, Nill S, Billas I, Shipley D, Duane S, Adamovics J, Oelfke U.  
PMID: 29393066 DOI: 10.1088/1361-6560/aaaca2.

**Real-time volumetric relative dosimetry for magnetic resonance-image-guided radiation therapy (MR-IGRT).Phys Med Biol. 2018;63:045021.**

Lee HJ, Kadbi M, Bosco G, Ibbott GS.  
PMID: 29384731 DOI: 10.1088/1361-6560/aaac22.

**Relative dosimetry with an MR-Linac: Response of ion chambers, diamond, and diode detectors for off-axis, depth dose, and output factor measurements.**

**Med Phys. 2018;45(2):884097.**

O'Brien DJ, Dolan J, Pencea S, Schupp N, Sawakuchi GO.  
PMID: 29178457 DOI: 10.1002/mp.12699.

**Characterization of the a-Si EPID in the unity MR-Linac for dosimetric applications.**

**Phys Med Biol. 2018;63(2):025006.**

Torres-Xirau I, Olaciregui-Ruiz I, Baldivinsson G, Mijnheer BJ, van der Heide UA, Mans A.  
PMID: 29182153 DOI: 10.1088/1361-6560/aa9dbf.

**Investigation of magnetic field effects on the dose-response of 3D dosimeters for magnetic resonance—image guided radiation therapy applications.**

**Radiother Oncol. 2017;125(3):426–32.**

Lee HJ, Roed Y, Venkataraman S, Carroll M, Ibbott GS.  
PMID: 28964533 DOI: 10.1016/j.radonc.2017.08.027.

**The impact of a 1.5T MRI linac fringe field on neighbouring linear accelerators.**

**Phys Imaging Radiat Oncol. 2017;4:16/12/2021.**

Perik T, Kaas J, Wittkämper F.  
PMID: 10000000026 DOI: 10.1016/j.phro.2017.10.002.

**Optimal orientation for ionization chambers in MRgRT reference dosimetry.**

**Curr Dir Biomed Eng. 2017;3(2):273–5.**

Pojtinger S, Dohm OS, Thorwarth D.  
PMID: 10000000003 DOI: 10.1515/cdbme-2017-0056.

**Experimental analysis of correction factors for reference dosimetry in a magnetic field.**

**Curr Dir Biomed Eng. 2017;3(2):803–5.**

Brand N, Pojtinger S, Tsitsekidis S, Thorwarth D, Dohm OS.  
PMID: 10000000014 DOI: 10.1515/cdbme-2017-0170.

**Monte Carlo study of the chamber-phantom air gap effect in a magnetic field.**

**Med Phys. 2017;44(7):3830–8.**

O'Brien DJ, Sawakuchi GO.  
PMID: 28432792 DOI: 10.1002/mp.12290.

**Using 3D dosimetry to quantify the electron return effect (ERE) for MR-image-guided radiation therapy (MR-IGRT) applications.**

**J Phys: Conf Ser. 2017;847:012057.**

Lee HJ, Won CG, Alqathami M, Kadbi M, Ibbott G.  
PMID: 10000000002 DOI: 10.1088/1742-6596/847/1/012057.

**Dosimetry in the presence of strong magnetic fields.**

**J Phys: Conf Ser. 2017;847:012055.**

O'Brien D J, Schupp N, Pencea S, Dolan J, Sawakuchi GO.  
PMID: 10000000015 DOI: 10.1088/1742-6596/847/1/012055.

---

**Quantification of static magnetic field effects on radiotherapy ionization chambers.**

**Phys Med Biol.** 2017;62(5):1731–43.

Agnew J, O'Grady F, Young R, Duane S, Budgell GJ.  
PMID: 28072396 DOI: 10.1088/1361-6560/aa5876.

**International Conference on Recent Trends in Physics 2016 (ICRTP2016).**

**J Phys: Conf Ser.** 2016;755:011001.

PMID: 10000000001 DOI: 10.1088/1742-6596/755/1/011001.

**Reference dosimetry in magnetic fields: Formalism and ionization chamber correction factors.**

**Med Phys.** 2016;43(8):4915–27.

O'Brien DJ, Roberts DA, Ibbott GS, Sawakuchi GO.  
PMID: 27487908 DOI: 10.1118/1.4959785.

**Consequences of air around an ionization chamber: Are existing solid phantoms suitable for reference dosimetry on an MR-Linac?**

**Med Phys.** 2016;43(7):3961–8.

Hackett SL, van Asselen B, Wolthaus JW, Kok JG, Woodings SJ, Lagendijk JJ, Raaymakers BW.  
PMID: 27370114 DOI: 10.1118/1.4952727.

**Performance of a cylindrical diode array for use in a 1.5 T MR-Linac.**

**Phys Med Biol.** 2016;61:N80–9.

Houweling AC, de Vries JH, Wolthaus J, Woodings S, Kok JG, van Asselen B, Smit K, Bel A, Lagendijk JJ, Raaymakers BW.  
PMID: 26767389 DOI: 10.1088/0031-9155/61/3/N80.

**Gel dosimetry enables volumetric evaluation of dose distributions from an MR-guided linac**

**AIP Conference Proceedings.** 2016;1747(1):040002.

Ibbott GS, Roed Y, Lee H, Alqathami M, Wang J, Pinsky L, Blencowe A.  
PMID: 10000000013 DOI: 10.1063/1.4954102.

**Relative dosimetry in a 1.5 T magnetic field: An MR-Linac compatible prototype scanning water phantom.**

**Phys Med Biol.** 2014;59(15):4099–109.

Smit K, Sjöholm J, Kok JG, Lagendijk JJ, Raaymakers BW.  
PMID: 24989159 DOI: 10.1088/0031-9155/59/15/4099.

**Performance of a multi-axis ionization chamber array in a 1.5 T magnetic field.**

**Phys Med Biol.** 2014;59(7):1845–44.

Smit K, Kok JG, Lagendijk JJ, Raaymakers BW.  
PMID: 24625540 DOI: 10.1088/0031-9155/59/7/1845.

**Installation of the 1.5 T MRI accelerator next to clinical accelerators: Impact of the fringe field.**

**Phys Med Biol.** 2009;54:N409–15.

Kok JG, Raaymakers BW, Lagendijk JJ, Overweg J, de Graaff CH, Brown KJ.  
PMID: 19687566 DOI: 10.1088/0031-9155/54/18/N02.

**Dosimetry for the MRI accelerator: The impact of a magnetic field on the response of a Farmer NE2571 ionization chamber.**

**Phys Med Biol.** 2009;54(10):2993–3002.

Meijsing I, Raaymakers BW, Raaijmakers AJ, Kok JG, Hogeweg L, Liu B, Lagendijk JJ.  
PMID: 19387100 DOI: 10.1088/0031-9155/54/10/002.

## Electron return effect, dose calculation

**Investigating magnetic field dose effects in small animals: A Monte Carlo study.**

**Int J Cancer Ther Oncol.** 20214;2(2):020233.

Rubinstein A, Guindani M, Hazle J, Court L.  
PMID: 10000000027 DOI: 10.14319/ijcto.0202.33.

---

**Experimental verification the electron return effect around spherical air cavities for the MR-Linac using Monte Carlo calculation.**

**Med Phys. 2020;47(6):2506–15.**

Shortall J, Vasquez Osorio E, Aitkenhead A, Berresford J, Agnew J, Budgell G, Chuter R, McWilliam A, Kirkby K, Mackay R, van Herk M.

PMID: 32145087 DOI: 10.1002/mp.14123.

**Monte Carlo simulations of out-of-field surface doses due to the electron streaming effect in orthogonal magnetic fields.**

**Phys Med Biol. 2019;64:115029.**

Malkov VN, Hackett SL, Wolthaus JWH, Raaymakers BW, van Asselen B.

PMID: 30808017 DOI: 10.1088/1361-6560/ab0aa0.

**Monte Carlo simulations of out-of-field skin dose due to spiralling contaminant electrons in a perpendicular magnetic field.**

**Med Phys. 2019;46(3):1467–77.**

Malkov VN, Hackett SL, van Asselen B, Raaymakers BW, Wolthaus JWH.

PMID: 30666678 DOI: 10.1002/mp.13392.

**Comparison of intensity modulated radiotherapy plan optimisation methods for a 1.5 T MR-Linac.**

**J Appl Clin Med Phys. 2019;20(1):43–9.**

Chuter R, van Herk M, Akhiat H, Voet P, MacKay R, Choudhury A, McWilliam A.

PMID: 30371972 DOI: 10.1002/acm2.12475.

**Spiralling contaminant electrons increase doses to surfaces outside the photon beam of an MRI-Linac with a perpendicular magnetic field.**

**Phys Med Biol. 2018;63:095001.**

Hackett SL, van Asselen B, Wolthaus JWH, Bluemink JJ, Ishakoglu K, Kok J, Lagendijk JJW, Raaymakers BW.

PMID: 29595150 DOI: 10.1088/1361-6560/aaba8f.

**A methodology to investigate the impact of image distortions on the radiation dose when using magnetic resonance images for planning.**

**Phys Med Biol. 2018;63(8):085005.**

Yan Y, Yang J, Beddar S, Ibbott G, Wen Z, Court LE, Hwang KP, Kadbi M, Krishnan S, Fuller CD, Frank SJ, Yang J, Balter P, Kudchadker RJ, Wang J.

PMID: 29528037 DOI: 10.1088/1361-6560/aab5c3.

**Influence of a transverse magnetic field on the dose deposited by a 6 MV linear accelerator.**

**Curr Dir Biomed Eng. 2017;3(2):281–5.**

Richter S, Pojtinger S, Mönnich D, Dohm OS, Thorwarth D.

PMID: 10000000025 DOI: 10.1515/cdbme-2017-0058.

**Experimental evaluation of a GPU-based Monte Carlo dose calculation algorithm in the Monaco treatment planning system.**

**J Appl Clin Med Phys. 2016;17(6):230–41.**

Paudel MR, Kim A, Sarfehnia A, Ahmad SB, Beachey DJ, Sahgal A, Keller BM.

PMID: 27929496 DOI: 10.1120/jacmp.v17i6.6455.

**Backscatter dose effects for high atomic number materials being irradiated in the presence of a magnetic field: A Monte Carlo study for the MRI-Linac.**

**Med Phys. 2016;43(8):4665–73.**

Ahmad SB, Sarfehnia A, Kim A, Wronski M, Sahgal A, Keller BM.

PMID: 27487883 DOI: 10.1118/1.4955175.

**Minimizing the magnetic field effect in MR-linac specific QA-tests: The use of electron dense materials.**

**Phys Med Biol. 2016;61(3):N50.**

van Zijp HM, van Asselen B, Wolthaus JW, Kok JM, de Vries JH, Ishakoglu K, Beld E, Lagendijk JJ, Raaymakers BW.

PMID: 26758570 DOI: 10.1088/0031-9155/61/3/N50.



---

**Evaluation of a commercial MRI Linac based Monte Carlo dose calculation algorithm with GEANT4.**

**Med Phys.** 2016;43(2):894–907.

Ahmad SB, Sarfehnia A, Paudel MR, Kim A, Hissoiny S, Sahgal A, Keller B.  
PMID: 26843250 DOI: 10.1118/1.4939808.

**Technical Note: A Monte Carlo study of magnetic-field-induced radiation dose effects in mice.**

**Med Phys.** 2015;42(9):5510–16.

Rubinstein AE, Liao Z, Melancon AD, Guindani M, Followill DS, Taylor RC, Hazle JD, Court LE.  
PMID: 26328998 DOI: 10.1118/1.4928600.

**Compensating for the impact of non-stationary spherical air cavities on IMRT dose delivery in transverse magnetic fields.**

**Phys Med Biol.** 2015;60(2):755–68.

Bol GH, Lagendijk JJ, Raaymakers BW.  
PMID: 25559321 DOI: 10.1088/0031-9155/60/2/755.

**Fast online Monte Carlo-based IMRT planning for the MRI linear accelerator.**

**Phys Med Biol.** 2012;57(5):1375–85.

Bol GH, Hissoiny S, Lagendijk JJ, Raaymakers BW.  
PMID: 22349450 DOI: 10.1088/0031-9155/57/5/1375.

**Fast dose calculation in magnetic fields with GPUMCD.**

**Phys Med Biol.** 2011;56(16):5119–29.

Hissoiny S, Raaijmakers AJ, Ozell B, Despres P, Raaymakers BW.  
PMID: 21775790 DOI: 10.1088/0031-9155/56/16/003.

**Magnetic-field-induced dose effects in MR-guided radiotherapy systems: Dependence on the magnetic field strength.**

**Phys Med Biol.** 2008;53(4):909–23.

Raaijmakers AJ, Raaymakers BW, Lagendijk JJ.  
PMID: 18263948 DOI: 10.1088/0031-9155/53/4/006.

**Dose optimization for the MRI-accelerator: IMRT in the presence of a magnetic field.**

**Phys Med Biol.** 2007;52(23):7045–54.

Raaijmakers AJ, Hardemark B, Raaymakers BW, Raaijmakers CP, Lagendijk JJ.  
PMID: 18029992 DOI: 10.1088/0031-9155/52/23/018.

**Experimental verification of magnetic field dose effects for the MRI-accelerator.**

**Phys Med Biol.** 52(14):4283–91.

Raaijmakers AJ, Raaymakers BW, Lagendijk JJ.  
PMID: 17664608 DOI: 10.1088/0031-9155/52/14/017.

**Integrating a MRI scanner with a 6 MV radiotherapy accelerator: Impact of the surface orientation on the entrance and exit dose due to the transverse magnetic field.**

**Phys Med Biol.** 2007;52:929–39.

Raaijmakers AJ, Raaymakers BW, van der Meer S, Lagendijk JJ.  
PMID: 17264362 DOI: 10.1088/0031-9155/52/4/005.

**Integrating a MRI scanner with a 6 MV radiotherapy accelerator: Dose increase at tissue-air interfaces in a lateral magnetic field due to returning electrons.**

**Phys Med Biol.** 2005;50(7):1363.

Raaijmakers AJ, Raaymakers BW, Lagendijk JJ.  
PMID: 15798329 DOI: 10.1088/0031-9155/50/7/002.

**Integrating a MRI scanner with a 6 MV radiotherapy accelerator: Dose deposition in a transverse magnetic field.**

**Phys Med Biol.** 2004;49(17):4109–18.

Raaymakers BW, Raaijmakers AJ, Kotte AN, Jette D, Lagendijk JJ.  
PMID: 15470926 DOI: 10.1088/0031-9155/49/17/019.

---

## Gating

**Real-time non-rigid 3D respiratory motion estimation for MR-guided radiotherapy using MR-MOTUS.** *IEEE Transactions On Medical Imaging, Volume:PP.*

Huttinga NRF, Bruijnen T, Van den Berg CAT, Sbrizzi A.  
PMID: 34520351 DOI: 10.1109/TMI.2021.3112818.

## General description of MR/RT technology

**MR-Guided online adaptive therapy.**

*Oncology Times 2017;39(8):13–4.*

Christodouleas J.  
PMID: 10000000021 DOI: 10.1097/01.COT.0000516143.51689.1e.

**Integrating a MRI scanner with a radiotherapy accelerator: A new concept of precise on line radiotherapy guidance and treatment monitoring.**

*ICCR Proceedings.*

Raaymakers BW, Lagendijk JJW, van der Heide UA, Overweg J, Brown K, Topolnjak R, Dehnad H, Jürgenliemk-Schulz IM, Welleweerd J, Bakker CJG.  
PMID: 10000000020.

**Technical radiotherapy advances: The role of magnetic resonance imaging-guided radiation in the delivery of hypofractionation.**

*Clin Oncol (R Coll Radiol). 2022;32(5):301–12.*

Gough J, Hall W, Good J, Nash A, Aitken K.  
PMID: 35305888 DOI: 10.1016/j.clon.2022.02.020.

**Magnetic resonance linear accelerator technology and adaptive radiation therapy: An overview for clinicians.**

*CA Cancer J Clin. 2022;72(1):34–56.*

Hall WA, Paulson E, Li XA, Erickson B, Schultz C, Tree A, Awan M, Low DA, McDonald BA, Salzillo T, Glide-Hurst CK, Kishan AU, Fuller CD.  
PMID: 34792808 DOI: 10.3322/caac.21707.

**MRI guided radiotherapy: a MRI-based linear accelerator.**

*Radiother Oncol. 2000;56(s1).*

Lagendijk JJ, Bakker C J.  
PMID: 10000000011.

**Early health economic analysis of 1.5 T MRI-guided radiotherapy for localized prostate cancer: Decision analytic modelling.**

*Radiother Oncol. 2021;161:74–82.*

Hehakaya C, van der Voort van Zyp JRN, Vanneste BGL, Grutters JPC, Grobbee DE, Verkooijen HM, Frederix GWJ.  
PMID: 34089754 DOI: 10.1016/j.radonc.2021.05.022.

**Variations in demand across England for the magnetic resonance-linac technology, simulated utilising local-level demographic and cancer data in the Malthus Project.**

*Clin Oncol. 2021;33(7):e285–94.*

Mee T, Vickers AJ, Jena R, Kirkby KJ, Choudhury A, Kirkby NF.  
PMID: 33775495 DOI: 10.1016/j.clon.2021.03.004.

**Sensible introduction of MR-guided radiotherapy: A warm plea for the RCT.**

*Front Oncol. 2021;11:652889.*

Verkooijen HM, Henke LE.  
PMID: 33816308 DOI: 10.3389/fonc.2021.652889.

**Technical challenges of real-time adaptive MR-guided radiotherapy.**

*Front Oncol. 2021;11:634507.*

Thorwarth D, Low DA.  
PMID: 33763369 DOI: 10.3389/fonc.2021.634507.

---

**MRI-guided radiation therapy.**

**Advances in Oncology 2021;1:29–39.**

Lee SL, Hall WA, Morris ZS, Christensen L, Bassetti M.  
PMID: 10000000010 DOI: 10.1016/j.yao.2021.02.003.

**Artificial intelligence in magnetic resonance guided radiotherapy: Medical and physical considerations on state of art and future perspectives.**

**Phys Med. 2021;85:175–91.**

Cusumano D, Boldrini L, Dhont J, Fiorino C, Green O, Gungor G, Jornet N, Kluter S, Landry G, Mattiucci GC, Placidi L, Reynaert N, Ruggieri R, Tanadini-Lang S, Thorwarth D, Yadav P, Yang Y, Valentini V, Verellen D, Indovina L.  
PMID: 34022660 DOI: 10.1016/j.ejmp.2021.05.010.

**MRI-guided radiation therapy: An emerging paradigm in adaptive radiation oncology.**

**Radiology 2020;298(2):248–60.**

Otazo R, Lambin P, Pignol JP, Ladd ME, Schlemmer HP, Baumann M, Hricak H.  
PMID: 33350894 DOI: 10.1148/radiol.2020202747.

**International survey; current practice in on-line adaptive radiotherapy (ART) delivered using magnetic resonance image (MRI) guidance.**

**Technical Innovations & Patient Support in Radiation Oncology 2020;16:1–9.**

McNair HA, Wiseman T, Joyce E, Peet B, Huddart RA.  
PMID: 32995576 DOI: 10.1016/j.tipsro.2020.08.002.

**Image guidance in radiation therapy for better cure of cancer.**

**Mol Oncol. 2020;14(7):1470–91.**

Gregoire V, Guckenberger M, Haustermans K, Lagendijk JJW, Menard C, Potter R, S lotman BJ, Tanderup K, Thorwarth D, van Herk M, Zips D.  
PMID: 32536001 DOI: 10.1002/1878-0261.12751.

**MR-guided radiotherapy: The perfect partner for immunotherapy?**

**Front Oncol. 2021;10:615697.**

Horner-Rieber J, Kluter S, Debus J, Adema G, Ansems M, Verheij M.  
PMID: 33604296 DOI: 10.3389/fonc.2020.615697.

**Single-fraction magnetic resonance guided stereotactic radiotherapy—A game changer?**

**Phys Imaging Radiat Oncol. 15:95–6.**

Kron T, Thorwarth D.  
PMID: 32566765 DOI: 10.1016/j.phro.2020.06.003.

**Magnetic resonance-guided radiation therapy: A review.**

**J Med Imaging Radiat Oncol. 2020;64(1):163–77.**

Chin S, Eccles CL, McWilliam A, Chuter R, Walker E, Whitehurst P, Berresford J, Van Herk M, Hoskin PJ, Choudhury A.  
PMID: 31646742 DOI: 10.1111/1754-9485.12968.

**Image guided radiotherapy moving towards real time adaptive radiotherapy; global positioning system for radiotherapy?**

**Technical Innovations & Patient Support in Radiation Oncology 2019;12:1–2.**

McNair H, Buijs M.  
PMID: 32095548 DOI: 10.1016/j.tipsro.2019.10.006.

**The transformation of radiation oncology using real-time magnetic resonance guidance: A review.**

**Eur J Cancer. 2019;122:42–52.**

Hall WA, Paulson ES, van der Heide UA, Fuller CD, Raaymakers BW, Lagendijk JJW, Li XA, Jaffray DA, Dawson LA, Erickson B, Verheij M, Harrington KJ, Sahgal A, Lee P, Parikh PJ, Bassetti MF, Robinson CG, Minsky BD, Choudhury A, Tersteeg RJHA, Schultz CJ.  
PMID: 31614288 DOI: 10.1016/j.ejca.2019.07.021.

**MR-guidance in clinical reality: Current treatment challenges and future perspectives.**

**Radiat Oncol. 2019;14:92.**

Corradini S, Alongi F, Andratschke N, Belka C, Boldrini L, Cellini F, Debus J, Guckenberger M, Horner-Rieber J, Lagerwaard FJ, Mazzola R, Palacios MA, Philippens MEP, Raaijmakers CPJ, Terhaard CHJ, Valentini V, Niyazi M.  
PMID: 31167658 DOI: 10.1186/s13014-019-1308-y.

---

**Magnetic resonance-guided radiotherapy—Can we justify more expensive technology?**

**Clin Oncol (R Coll Radiol).** 2018;30(11):677–9.

Tree AC, Huddart R, Choudhury A.

PMID: 30217480 DOI: 10.1016/j.clon.2018.08.013.

**Adaptive radiotherapy enabled by MRI guidance.**

**Clin Oncol (R Coll Radiol).** 2018;30(11):6711–9.

Hunt A, Hansen VN, Oelfke U, Nill S, Hafeez S.

PMID: 30201276 DOI: 10.1016/j.clon.2018.08.001.

**The challenges of using MRI during radiotherapy.**

**Clin Oncol (R Coll Radiol).** 2018;30(11):680–5.

McWilliam A, Rowland B, van Herk M.

PMID: 30197096 DOI: 10.1016/j.clon.2018.08.004.

**The need for, and implementation of, image guidance in radiation therapy.**

**Annals of The ICRP** 2018;47(3–4):160–76.

Ibbott GS.

PMID: 29676166 DOI: 10.1177/0146645318764092.

**Magnetic resonance imaging-guided radiation therapy: A short strengths, weaknesses, opportunities, and threats analysis.**

**Int J Radiat.** 2018;101(5):1057–60.

van Herk M, McWilliam A, Dubec M, Faivre-Finn C, Choudhury A.

PMID: 30012525 DOI: 10.1016/j.ijrobp.2017.11.009.

**Online adaptive radiation therapy.**

**Int J Radiat.** 2017;99(4):994–1003.

Lim-Reinders S, Keller BM, Al-Ward S, Sahgal A, Kim A.

PMID: 28916139 DOI: 10.1016/j.ijrobp.2017.04.023.

**The Future of image-guided radiotherapy.**

**Clin Oncol (R Coll Radiol).** 2017;29(10):662–6.

Choudhury A, Budgell G, MacKay R, Falk S, Faivre-Finn C, Dubec M, van Herk M, McWilliam A.

PMID: 28511968 DOI: 10.1016/j.clon.2017.04.036.

**The future of image-guided radiotherapy will be MR-guided.**

**Br J Radiol.** 2017;90:1073.

Pollard JM, Wen Z, Sadagopan R, Wang J, Ibbott GS.

PMID: 28256898 DOI: 10.1259/bjr.20160667.

**MR-guided radiation therapy.**

**Phys Med.** 2016;suppl 3):175.

van der Heide Uulke A.

PMID: 10000000008 DOI: 10.1016/j.ejmp.2016.07.284.

**Magnetic resonance imaging-guided radiation therapy: Technological innovation provides a new vision of radiation oncology practice.**

**Brit J Radiol.** 2015;27(9):495–7.

Oelfke U.

PMID: 25960321 DOI: 10.1016/j.clon.2015.04.004.

**MR guidance in radiotherapy.**

**Phys Med Biol.** 2014;59:R349.

Legendijk JJ, Raaymakers BW, Van den Berg CA, Moerland MA, Philippens ME, van Vulpen M.

PMID: 25322150 DOI: 10.1088/0031-9155/59/21/R349.

**The magnetic resonance imaging-linac system.**

**Semin Radiat Oncol.** 2014;24(3):207–9.

Legendijk JJ, Raaymakers BW, van Vulpen M.

PMID: 24931095 DOI: 10.1016/j.semradonc.2014.02.009.

---

**Introduction: Systems for magnetic resonance image guided radiation therapy.**

**Semin Radiat Oncol. 2014;24(3):192.**

Menard C, van der Heide U.

PMID: 24931090 DOI: 10.1016/j.semradonc.2014.02.010.

**Integrating a 1.5 T MRI scanner with a 6 MV accelerator: Proof of concept.**

**Phys Med Biol. 2009;54(12):N229.**

Raaymakers BW, Lagendijk JJ, Overweg J, Kok JG, Raaijmakers AJ, Kerkhof EM, van der Put RW, Meijnsing I, Crijns SP, Benedosso F, van Vulpen M, de Graaff CH, Allen J, Brown KJ.

PMID: 19451689 DOI: 10.1088/0031-9155/54/12/N01.

**MRI/linac integration.**

**Radiother Oncol. 20025–9.**

Lagendijk JJ, Raaymakers BW, Raaijmakers AJ, Overweg J, Brown KJ, Kerkhof EM, van der Put RW, Hardemark B, van Vulpen M, van der Heide UA.

PMID: 18023488 DOI: 10.1016/j.radonc.2007.10.034.

**Invited MRI guided radiotherapy: MRI as position verification system for IMRT.**

**Radiother Oncol. 2002;64(suppl 1):S75–6.**

Abstract Symposia.

PMID: 10000000012 DOI: 10.1016/s0167-8140(02)82541-5.

**Therapeutic radiographers at the helm: Moving towards radiographer-led MR-guided radiotherapy.**

**J Med Imaging Radiat Sci. 2020;51(3):364–72.**

Hales RB, Rodgers J, Whiteside L, McDaid L, Berresford J, Budgell G, Choudhury A, Eccles CL.

PMID: 32600981 DOI: 10.1016/j.jmir.2020.05.001.

## MRI

**Application of a k-Space interpolating artificial neural network to in-plane accelerated simultaneous multislice imaging.**

**arXiv:1902.08589 [physics.med-ph].**

Mickevicius NJ, Paulson ES, Muftuler LT.

Bibcode: 2019arXiv190208589M.

**Longitudinal assessment of quality assurance measurements in a 1.5 T MR-linac: Part II-Magnetic resonance imaging.**

**J Appl Clin Med Phys. 2021;22(10):190–201.**

Subashi E, Dresner A, Tyagi N.

PMID: 35332990 DOI: 10.1002/acm2.13586.

**Robustness and reproducibility of radiomics in T2 weighted images from magnetic resonance image guided linear accelerator in a phantom study.**

**Phys Med. 2022;96:130–39.**

Sun M, Baiyasi A, Liu X, Shi X, Li X, Zhu J, Yin Y, Hu J, Li Z, Li B.

PMID: 35287100 DOI: 10.1016/j.ejmp.2022.03.002.

**Safety of gadolinium based contrast agents in magnetic resonance imaging-guided radiotherapy - An investigation of chelate stability using relaxometry.**

**Phys Imaging Radiat Oncol. 2022;21:96–100.**

Mahmood F, Nielsen UG, Jorgensen CB, Brink C, Thomsen HS, Hansen RH.

PMID: 35243039 DOI: 10.1016/j.phro.2022.02.015.

**MR SIGnature MATching (MRSIGMA) with retrospective self-evaluation for real-time volumetric motion imaging.**

**Phys Med Biol. 2021;66(21).**

Kim N, Tringale KR, Crane C, Tyagi N, Otazo R.

PMID: 34619666 DOI: 10.1088/1361-6560/ac2dd2.

---

**Integration of quantitative imaging biomarkers in clinical trials for MR-guided radiotherapy: Conceptual guidance for multicentre studies from the MR-Linac Consortium Imaging Biomarker Working Group.**

**Eur J Cancer. 2021;153:64–71.**

van Houdt PJ, Saeed H, Thorwarth D, Fuller CD, Hall WA, McDonald BA, Shukla-Dave A, Kooreman ES, Philippens MEP, van Lier ALHMW, Keesman R, Mahmood F, Coolens C, Stanescu T, Wang J, Tyagi N, Wetscherek A, van der Heide UA. PMID: 34144436 DOI: 10.1016/j.ejca.2021.04.041.

**Stability of MRI contrast agents in high-energy radiation of a 1.5T MR-Linac.**

**Radiother Oncol. 2021;161:55–64.**

Wang J, Salzillo T, Jiang Y, Mackeyev Y, Fuller CD, Chung C, Choi S, Hughes N, Ding Y, Yang J, Vedam S, Krishnan S. PMID: 34089753 DOI: 10.1016/j.radonc.2021.05.023.

**Quantification of magnetic susceptibility fingerprint of a 3D linearity medical device.**

**Phys Med. 2021;87:39–48.**

Stanescu T, Mousavi SH, Cole M, Barberi E, Wachowicz K. PMID: 34116316 DOI: 10.1016/j.ejmp.2021.05.023.

**A Comparison of the distortion in the same field MRI and MR-Linac system with a 3D printed phantom.**

**Front Oncol. 2021;11:579451.**

Liu X, Li Z, Rong Y, Cao M, Li H, Jia C, Shi L, Lu W, Gong G, Yin Y, Qiu J. PMID: 34150605 DOI: 10.3389/fonc.2021.579451.

**Technical Note: Four-dimensional deformable digital phantom for MRI sequence development.**

**Med Phys. 2021;48(9):5406–13.**

Hanson HM, Eiben B, McClelland JR, van Herk M, Rowland BC. PMID: 34101858 DOI: 10.1002/mp.15036.

**On the use of low-dimensional temporal subspace constraints to reduce reconstruction time and improve image quality of accelerated 4D-MRI.**

**Radiother Oncol. 2021;158:215–23.**

Mickevicius NJ, Paulson ES. PMID: 33412207 DOI: 10.1016/j.radonc.2020.12.032.

**Simultaneous multi-slice accelerated 4D-MRI for radiotherapy guidance.**

**Phys Med Biol. 2021;66(9):095014.**

Keijjnemans K, Borman PTS, van Lier ALHMW, Verhoeff JJC, Raaymakers BW, Fast MF. PMID: 33827065 DOI: 10.1088/1361-6560/abf591.

**Nonrigid 3D motion estimation at high temporal resolution from prospectively undersampled k-space data using low-rank MR-MOTUS.**

**Magn Reson Med. 2020;85(4):2309–26.**

Huttinga NRF, Bruijnen T, van den Berg CAT, Sbrizzi A. PMID: 33169888 DOI: 10.1002/mrm.28562.

**Feasibility of MR-guided radiotherapy using beam-eye-view 2D-cine with tumor-volume projection.**

**Phys Med Biol. 2021;66(4):045020.**

Nie X, Rimner A, Li G. PMID: 33361569 DOI: 10.1088/1361-6560/abd66a.

**ADC measurements on the Unity MR-linac—A recommendation on behalf of the Elekta Unity MR-Linac consortium.**

**Radiother Oncol. 2020;153:106–13.**

Kooreman ES, van Houdt PJ, Keesman R, Pos FJ, van Pelt VWJ, Nowee ME, Wetscherek A, Tijssen RHN, Philippens MEP, Thorwarth D, Wang J, Shukla-Dave A, Hall WA, Paulson ES, van der Heide UA. PMID: 33017604 DOI: 10.1016/j.radonc.2020.09.046.

**Technical feasibility of magnetic resonance fingerprinting on a 1.5T MRI-Linac.**

**Phys Med Biol. 2020;65(22):22NT01.**

Bruijnen T, van der Heide O, Intven MPW, Mook S, Lagendijk JJW, van den Berg CAT, Tijssen RHN. PMID: 32977318 DOI: 10.1088/1361-6560/abbb9d.

---

**Quantitative magnetic resonance imaging on hybrid magnetic resonance linear accelerators: Perspective on technical and clinical validation.**

**Phys Imaging Radiat Oncol.** 2020;16:69–73.

Thorwarth D, Ege M, Nachbar M, Mönnich D, Gani C, Zips D, Boeke S.

PMID: 33458346 DOI: 10.1016/j.phro.2020.09.007.

**A modular phantom and software to characterize 3D geometric distortion in MRI.**

**Phys Med Biol.** 2020;65(19):195008.

Slagowski JM, Ding Y, Aima M, Wen Z, Fuller CD, Chung C, Debnam JM, Hwang KP, Kadbi M, Szklaruk J, Wang J.

PMID: 32531763 DOI: 10.1088/1361-6560/ab9c64.

**Quantitative magnetic resonance imaging for biological image-guided adaptive radiotherapy.**

**Front Oncol.** 2021;10:615643.

van Houdt PJ, Yang Y, van der Heide UA.

PMID: 33585242 DOI: 10.3389/fonc.2020.615643.

**Multi-sequence MR image-based synthetic CT generation using a generative adversarial network for head and neck MRI-only radiotherapy.**

**Med Phys.** 2020;47(4):1880–94.

Qi M, Li Y, Wu A, Jia Q, Li B, Sun W, Dai Z, Lu X, Zhou L, Deng X, Song T.

PMID: 32027027 DOI: 10.1002/mp.14075.

**The noise navigator: a surrogate for respiratory-correlated 4D-MRI for motion characterization in radiotherapy.**

**Phys Med Biol.** 2020;65:01NT02.

Navest RJM, Mandija S, Bruijnen T, Stemkens B, Tijssen RHN, Andreychenko A, Lagendijk JJW, van den Berg CAT.

PMID: 31775130 DOI: 10.1088/1361-6560/ab5c62.

**MR-MOTUS: model-based non-rigid motion estimation for MR-guided radiotherapy using a reference image and minimal k-space data.**

**Phys Med Biol.** 2020;65:015004.

Huttinga NRF, van den Berg CAT, Luijten PR, Sbrizzi A.

PMID: 31698354 DOI: 10.1088/1361-6560/ab554a.

**Magnetic resonance imaging sequence evaluation of an MR-Linac system; early clinical experience.**

**Technical Innovations & Patient Support in Radiation Oncology** 2019;12:56–63.

Eccles CL, Adair Smith G, Bower L, Hafeez S, Herbert T, Hunt A, McNair HA, Ofuya M, Oelfke U, Nill S, Huddart RA.

PMID: 32095556 DOI: 10.1016/j.tipsro.2019.11.004.

**ReconSocket: A low-latency raw data streaming interface for real-time MRI-guided radiotherapy.**

**Phys Med Biol.** 2019;64(18):185008.

Borman PTS, Raaymakers BW, Glitzner M.

PMID: 31461412 DOI: 10.1088/1361-6560/ab3e99.

**Design and feasibility of a flexible, on-body, high impedance coil receive array for a 1.5 T MR-Linac.**

**Phys Med Biol.** 2019;64:185004.

Zijlema SE, Tijssen RHN, Malkov VN, van Dijk L, Hackett SL, Kok JGM, Lagendijk JJW, van den Berg CAT.

PMID: 31370043 DOI: 10.1088/1361-6560/ab37a8.

**Correcting geometric image distortions in slice-based 4D-MRI on the MR-Linac.**

**Med Phys.** 2019;46(7):3044–54.

Keesman R, van de Lindt TN, Juan-Cruz C, van den Wollenberg W, van der Bijl E, Nowee ME, Sonke JJ, van der Heide UA, Fast MF.

PMID: 31111494 DOI: 10.1002/mp.13602.

**A fast volumetric 4D-MRI with sub-second frame rate for abdominal motion monitoring and characterization in MRI-guided radiotherapy.**

**Quant Imaging Med Surg.** 2019;9(7):1303–14.

Yuan J, Wong OL, Zhou Y, Chueng KY, Yu SK.

PMID: 31448215 DOI: 10.21037/qims.2019.06.23.

---

**Simultaneous acquisition of orthogonal plane cine imaging and isotropic 4D-MRI using super-resolution.**

**Radiother Oncol. 2019;136:121–9.**

Mickevicius NJ, Paulson ES.

PMID: 31015113 DOI: 10.1016/j.radonc.2019.04.005.

**MRI B 0 homogeneity and geometric distortion with continuous linac gantry rotation on an Elekta Unity MR-Linac.**

**Phys Med Biol. 2019;64(12):12NT01.**

Jackson S, Glitzner M, Tijssen RHN, Raaymakers BW.

PMID: 31108467 DOI: 10.1088/1361-6560/ab231a.

**Synthetic 4D-CT of the thorax for treatment plan adaptation on MR-guided radiotherapy systems.**

**Phys Med Biol. 2019;64(11):115005.**

Freedman JN, Bainbridge HE, Nill S, Collins DJ, Kachelriess M, Leach MO, McDonald F, Oelfke U, Wetscherek A.

PMID: 30844775 DOI: 10.1088/1361-6560/ab0dbb.

**Assessment of 3D motion modeling performance for dose accumulation mapping on the MR-Linac by simultaneous multislice MRI.**

**Phys Med Biol. 2019;64(9):095004.**

Borman PTS, Bos C, Stemkens B, Moonen CTW, Raaymakers BW, Tijssen RHN.

PMID: 30917353 DOI: 10.1088/1361-6560/ab13e3.

**MRI commissioning of 1.5T MR-Linac systems—a multi-institutional study.**

**Radiother Oncol. 2018;132:114–20.**

Tijssen RHN, Philippens MEP, Paulson ES, Glitzner M, Chugh B, Wetscherek A, Dubec M, Wang J, van der Heide UA.

PMID: 30825959 DOI: 10.1016/j.radonc.2018.12.011.

**Multiresolution radial MRI to reduce IDLE time in pre-beam imaging on an MR-Linac (MR-RIDDLE).**

**Phys Med Biol. 2019;64(5):055011.**

Bruijnen T, Stemkens B, Lagendijk JJW, van den Berg CAT, Tijssen RHN.

PMID: 30630156 DOI: 10.1088/1361-6560/aafd6b.

**Super-resolution T2-weighted 4D MRI for image guided radiotherapy.**

**Radiother Oncol. 2018;129(3):466–93.**

Freedman JN, Collins DJ, Gurney-Champion OJ, McClelland JR, Nill S, Oelfke U, Leach MO, Wetscherek A.

PMID: 29871813 DOI: 10.1016/j.radonc.2018.05.015.

**Delivering functional imaging on the MRI-Linac: Current challenges and potential solutions.**

**Clin Oncol (R Coll Radiol). 2018;30(11):702–10.**

Datta A, Aznar MC, Dubec M, Parker GJM, O'Connor JPB.

PMID: 30224203 DOI: 10.1016/j.clon.2018.08.005.

**Nuts and bolts of 4D-MRI for radiotherapy.**

**Phys Med Biol. 2018;63(21):21TR01.**

Stemkens B, Paulson ES, Tijssen RHN.

PMID: 30272573 DOI: 10.1088/1361-6560/aae56d.

**Characterization of imaging latency for real-time MRI-guided radiotherapy.**

**Phys Med Biol. 2018;63(15):155023.**

Borman PTS, Tijssen RHN, Bos C, Moonen CTW, Raaymakers BW, Glitzner M.

PMID: 29995645 DOI: 10.1088/1361-6560/aad2b7.

**Emerging magnetic resonance imaging technologies for radiation therapy planning and response assessment.**

**Int J Radiat. 2018;101(5):1046–56.**

Jones KM, Michel KA, Bankson JA, Fuller CD, Klopp AH, Venkatesan AM.

PMID: 30012524 DOI: 10.1016/j.ijrobp.2018.03.028.

**Simultaneous orthogonal plane cine imaging with balanced steady-state free-precession contrast using k-t GRAPPA.**

**Phys Med Biol. 2018;63(15):15NT02.**

Mickevicius NJ, Paulson ES.

PMID: 29956676 DOI: 10.1088/1361-6560/aad008.



---

**Characterization of the first RF coil dedicated to 1.5 T MR-guided radiotherapy.**

**Phys Med Biol.** 2018;63(2):025014.

Hoogcarspel SJ, Zijlema SE, Tijssen RHN, Kerkmeijer LGW, Jurgenliemk-Schulz IM, Lagendijk JJW, Raaymakers BW.  
PMID: 29260729 DOI: 10.1088/1361-6560/aaa303.

**Simultaneous orthogonal plane imaging.**

**Magn Reson Med.** 2017;78(5):1700–10.

Mickevicius NJ, Paulson ES.  
PMID: 27917527 DOI: 10.1002/mrm.26555.

**T2-weighted 4D magnetic resonance imaging for application in magnetic resonance-guided radiotherapy treatment planning.**

**Invest Radiol.** 2017;52(10):563–73.

Freedman JN, Collins DJ, Bainbridge H, Rank CM, Nill S, Kachelriess M, Oelfke U, Leach MO, Wetscherek A.  
PMID: 28459800 DOI: 10.1097/RLI.0000000000000381.

**Investigation of undersampling and reconstruction algorithm dependence on respiratory correlated 4D-MRI for online MR-guided radiation therapy.**

**Phys Med Biol.** 2017;62(8):2910–21.

Mickevicius NJ, Paulson ES.  
PMID: 27997382 DOI: 10.1088/1361-6560/aa54f2.

**Consensus opinion on MRI simulation for external beam radiation treatment planning.**

**Radiother Oncol.** 2016;121(2):1887–92.

Paulson ES, Crijns SP, Keller BM, Wang J, Schmidt MA, Coutts G, van der Heide UA.  
PMID: 27838146 DOI: 10.1016/j.radonc.2016.09.018.

**Spatial precision in magnetic resonance imaging-guided radiation therapy: The role of geometric distortion.**

**Int J Radiat.** 2016;95(4):1304–16.

Weygand J, Fuller CD, Ibbott GS, Mohamed AS, Ding Y, Yang J, Hwang KP, Wang J.  
PMID: 27354136 DOI: 10.1016/j.ijrobp.2016.02.059.

**On-line 3D motion estimation using low resolution MRI.**

**Phys Med Biol.** 2015; 60(16):N301–10.

Glitzner M, de Senneville BD, Lagendijk JJ, Raaymakers BW, Crijns SP.  
PMID: 26247427 DOI: 10.1088/0031-9155/60/16/N301.

**From static to dynamic 1.5T MRI-linac prototype: Impact of gantry position related magnetic field variation on image fidelity.**

**Phys Med Biol.** 2014;59(13):3241–7.

Crijns S, Raaymakers B.  
PMID: 24874027 DOI: 10.1088/0031-9155/59/13/3241.

**The feasibility of using a conventional flexible RF coil for an online MR-guided radiotherapy treatment.**

**Phys Med Biol.** 2013;58(6):1925–32.

Hoogcarspel SJ, Crijns SP, Lagendijk JJ, van Vulpen M, Raaymakers BW.  
PMID: 23442765 DOI: 10.1088/0031-9155/58/6/1925.

**Towards inherently distortion-free MR images for image-guided radiotherapy on an MRI accelerator.**

**Phys Med Biol.** 2012;57(5):1349–58.

Crijns SP, Bakker CJ, Seevinck PR, de Leeuw H, Lagendijk JJ, Raaymakers BW.  
PMID: 22349351 DOI: 10.1088/0031-9155/57/5/1349.

**Real-time correction of magnetic field inhomogeneity-induced image distortions for MRI-guided conventional and proton radiotherapy.**

**Phys Med Biol.** 2010;56(1):289.

Crijns SP, Raaymakers BW, Lagendijk JJ.  
PMID: 21149949 DOI: 10.1088/0031-9155/56/1/017.

**Treatment plan adaptation for MRI-guided radiotherapy using solely MRI data: A CT-based simulation study.**

**Phys Med Biol.** 2010;55(16):N433–40.

Kerckhof EM, Balter JM, Vineberg K, Raaymakers BW.  
PMID: 20679696 DOI: 10.1088/0031-9155/55/16/N01.

---

## Planning, adaptation

**Application of a k-space interpolating artificial neural network to in-plane accelerated simultaneous multislice imaging.**

**arXiv:1902.08589 [physics.med-ph].**

Mickevicius NJ, Paulson ES, Muftuler LT.

PMID: 10000000017.

**Indications of online adaptive replanning based on organ deformation.**

**Pract Radiat Oncol. 2019;10(2):e95–102.**

Lim SN, Ahunbay EE, Nasief H, Zheng C, Lawton C, Li XA.

PMID: 31446149 DOI: 10.1016/j.prro.2019.08.007.

**Treatment plan adaptation for MRI-guided radiotherapy using solely MRI data: A CT-based simulation study.**

**Phys Med Biol. 2010;55(16):N433–40.**

Kerkhof EM, Balter JM, Vineberg K, Raaymakers BW.

PMID: 20679696 DOI: 10.1088/0031-9155/55/16/N01.

**Fast dose calculation in magnetic fields with GPUMCD.**

**Phys Med Biol. 2011;56(16):5119–29.**

Hissoiny S, Raaijmakers AJ, Ozell B, Despres P, Raaymakers BW.

PMID: 21775790 DOI: 10.1088/0031-9155/56/16/003.

**Fast online Monte Carlo-based IMRT planning for the MRI linear accelerator.**

**Phys Med Biol. 2012;57:1375–85.**

Bol GH, Hissoiny S, Lagendijk JJ, Raaymakers BW.

PMID: 22349450 DOI: 10.1088/0031-9155/57/5/1375.

**Virtual couch shift (VCS): accounting for patient translation and rotation by online IMRT re-optimization.**

**Phys Med Biol. 2013;58(9):2989–3000.**

Bol GH, Lagendijk JJ, Raaymakers BW.

PMID: 23588253 DOI: 10.1088/0031-9155/58/9/2989.

**Towards adaptive IMRT sequencing for the MR-Linac.**

**Phys Med Biol. 2015;60(6):2493–509.**

Kontaxis C, Bol GH, Lagendijk JJ, Raaymakers BW.

PMID: 25749856 DOI: 10.1088/0031-9155/60/6/2493.

**Evaluation of a commercial MRI-Linac based Monte Carlo dose calculation algorithm with GEANT4.**

**Med Phys. 2016;43(2):894–907.**

Ahmad SB, Sarfehnia A, Paudel MR, Kim A, Hissoiny S, Sahgal A, Keller B.

PMID: 26843250 DOI: 10.1118/1.4939808.

**Technical Note: A Monte Carlo study of magnetic-field-induced radiation dose effects in mice.**

**Med Phys. 2015;42(9):5510–6.**

Rubinstein AE, Liao Z, Melancon AD, Guindani M, Followill DS, Taylor RC, Hazle JD, Court LE.

PMID: 26328998 DOI: 10.1118/1.4928600.

**Indications of online adaptive replanning based on organ deformation.**

**Pract Radiat Oncol. 2020;10(2):e95–102.**

Lim SN, Ahunbay EE, Nasief H, Zheng C, Lawton C, Li XA.

PMID: 31446149 DOI: 10.1016/j.prro.2019.08.007.

**Proof-of-concept delivery of intensity modulated arc therapy on the Elekta Unity 1.5 T MR-Linac.**

**Phys Med Biol. 2012;66:04LT01.**

Kontaxis C, Woodhead PL, Bol GH, Lagendijk JJW, Raaymakers BW.

PMID: 33361560 DOI: 10.1088/1361-6560/abd66d.

**A patient-specific autosegmentation strategy using multi-input deformable image registration for magnetic resonance imaging-guided online adaptive radiation therapy: A feasibility study.**

**Adv Radiat Oncol. 2020;5(6):1350–8.**

Zhang Y, Paulson E, Lim S, Hall WA, Ahunbay E, Mickevicius NJ, Straza MW, Erickson B, Li XA.

PMID: 33305098 DOI: 10.1016/j.adro.2020.04.027.

---

**A fast online replanning algorithm based on intensity field projection for adaptive radiotherapy.**

**Front Oncol. 2020;10:287.**

Liu X, Liang Y, Zhu J, Yu G, Yu Y, Cao Q, Li XA, Li B.  
PMID: 32195188 DOI: 10.3389/fonc.2020.00287.

**DeepDose: Towards a fast dose calculation engine for radiation therapy using deep learning.**

**Phys Med Biol. 2020;65(7):075013.**

Kontaxis C, Bol GH, Lagendijk JJW, Raaymakers BW.  
PMID: 32053803 DOI: 10.1088/1361-6560/ab7630.

**Adaptive radiotherapy: The Elekta Unity MR-Linac concept.**

**Clin Transl Radiat Oncol. 2019;18:54–9.**

Winkel D, Bol GH, Kroon PS, van Asselen B, Hackett SS, Werensteijn-Honingh AM, Intven MPW, Eppinga WSC, Tijssen RHN, Kerkmeijer LGW, de Boer HCJ, Mook S, Meijer GJ, Hes J, Willemsen-Bosman M, de Groot-van Breugel EN, Jurgenliemk-Schulz IM, Raaymakers BW.  
PMID: 31341976 DOI: 10.1016/j.ctro.2019.04.001.

**A technique to rapidly generate synthetic computed tomography for magnetic resonance imaging-guided online adaptive replanning: An exploratory study.**

**Int J Radiat. 2018;103(5):1261–70.**

Ahunbay EE, Thapa R, Chen X, Paulson E, Li XA.  
PMID: 30550817 DOI: 10.1016/j.ijrobp.2018.12.008.

**Technical Note: Acceleration of online adaptive replanning with automation and parallel operations.**

**Med Phys. 2018;45(10):4370–6.**

Zhang J, Ahunbay E, Li XA.  
PMID: 30053325 DOI: 10.1002/mp.13106.

**Technical Note: Investigating the impact of field size on patient selection for the 1.5T MR-Linac.**

**Med Phys. 2017;44(11):5667–71.**

Chuter RW, Whitehurst P, Choudhury A, van Herk M, McWilliam A.  
PMID: 28869651 DOI: 10.1002/mp.12557.

**Towards fast online intrafraction replanning for free-breathing stereotactic body radiation therapy with the MR-Linac.**

**Phys Med Biol. 2017;62(18):7233–48.**

Kontaxis C, Bol GH, Stemkens B, Glitzner M, Prins FM, Kerkmeijer LGW, Lagendijk JJW, Raaymakers BW.  
PMID: 28749375 DOI: 10.1088/1361-6560/aa82ae.

**Dosimetric impact of using a virtual couch shift for online correction of setup errors for brain patients on an integrated high-field magnetic resonance imaging linear accelerator.**

**Int J Radiat. 2017;98(3):699–708.**

Ruschin M, Sahgal A, Tseng CL, Sonier M, Keller B, Lee Y.  
PMID: 28581412 DOI: 10.1016/j.ijrobp.2017.03.004.

**An online replanning method using warm start optimization and aperture morphing for flattening-filter-free beams.**

**Int J Radiat. 2016;43(8):4575–84.**

Ahunbay EE, Ates O, Li XA.  
PMID: 27487874 DOI: 10.1118/1.4955439.

**Physically constrained voxel-based penalty adaptation for ultra-fast IMRT planning.**

**J Appl Clin Med Phys. 2016;17(4):172–89.**

Wahl N, Bangert M, Kamerling CP, Ziegenhein P, Bol GH, Raaymakers BW, Oelfke U.  
PMID: 27455484 DOI: 10.1120/jacmp.v17i4.6117.

**Towards adaptive IMRT sequencing for the MR-Linac.**

**Phys Med Biol. 2015;60(6):2493–509.**

Kontaxis C, Bol GH, Lagendijk JJ, Raaymakers BW.  
PMID: 25749856 DOI: 10.1088/0031-9155/60/6/2493.

**Virtual couch shift (VCS): accounting for patient translation and rotation by online IMRT re-optimization.**

**Phys Med Biol. 2013;58(9):2989–3000.**

Bol GH, Lagendijk JJ, Raaymakers BW.  
PMID: 23588253 DOI: 10.1088/0031-9155/58/9/2989.

---

## QA

**Brain stereotactic radiosurgery using MR-guided online adaptive planning for daily setup variation: An end-to-end test.**

**J Appl Clin Med Phys. 2022;23(3):e13518.**

Han EY, Wang H, Briere TM, Yeboa DN, Boursianis T, Kalaitzakis G, Pappas E, Castillo P, Yang J.

PMID: 34994101 DOI: 10.1002/acm2.13518.

**An evaluation of the use of EBT-XD film for SRS/SBRT commissioning of a 1.5 Tesla MR-Linac system.**

**Phys Med. 2022;96:9–17.**

Boh Lim S, Tyagi N, Subashi E, Liang J, Chan M.

PMID: 35189431 DOI: 10.1016/j.ejmp.2022.02.012.

**Magnetic resonance-guided radiation therapy of patients with cardiovascular implantable electronic device on a 1.5 T Magnetic Resonance-Linac.**

**Pract Radiat Oncol. 2022;12(1):e56–e61.**

Yang B, Yuan J, Cheung KY, Huang CY, Poon DMC, Yu SK.

PMID: 34520872 DOI: 10.1016/j.prro.2021.08.011.

**Variation in isocentre location of an Elekta Unity MR-linac through full gantry rotation.**

**Phys Med Biol. 2022;17;67(1).**

Hunt JR, Ebert MA, Rowshanfarzad P, Riis HL.

PMID: 34933298 DOI: 10.1088/1361-6560/ac4564.

**Sources of out-of-field dose in MRgRT: An inter-comparison of measured and Monaco treatment planning system doses for the Elekta Unity MR-Linac.**

**2021;44(4):1049–59.**

Baines J, Powers M, Newman G.

PMID: 34374946 DOI: 10.1007/s13246-021-01039-6.

**Deep learning-based 3D in vivo dose reconstruction with EPID for MR-Linacs: A proof of concept study.**

**Phys Med Biol. 2021;66(23):1361–6560/ac3b66.**

Li Y, Xiao F, Liu B, Qi M, Lu X, Cai J, Zhou L, Song T.

PMID: 34798623 DOI: 10.1088/1361-6560/ac3b66.

**Extension and validation of a GPU-Monte Carlo dose engine gDPM for 1.5 T MR-Linac online independent dose verification.**

**Med Phys. 2021;48(10):6174–83.**

Li Y, Ding S, Wang B, Liu H, Huang X, Song T.

PMID: 34387872 DOI: 10.1002/mp.15165.

**Longitudinal assessment of quality assurance measurements in a 1.5T MR-Linac: Part I-Linear accelerator.**

**J Appl Clin Med Phys. 2021;22(10):190–201.**

Subashi E, Lim SB, Gonzalez X, Tyagi N.

PMID: 34505349 DOI: 10.1002/acm2.13418.

**An investigation of using log-file analysis for automated patient-specific quality assurance in MRgRT.**

**J Appl Clin Med Phys. 2021;22:183–88.**

Lim SB, Godoy Sripes P, Napolitano M, Subashi E, Tyagi N, Cervino Arriba L, Lovelock DM.

PMID: 34278711 DOI: 10.1002/acm2.13361.

**Longitudinal assessment of quality assurance measurements in a 1.5T MR-Linac: Part I-Linear accelerator.**

**J Appl Clin Med Phys. 2021;22(10):190–201.**

Subashi E, Lim SB, Gonzalez X, Tyagi N.

PMID: 34505349 DOI: 10.1002/acm2.13418.

**MR guided radiation therapy of patients with cardiovascular implantable electronic device on a 1.5 T MR-Linac.**

**Pract Radiat Oncol. 2021; Sep 11:S1879-8300(21)00227-7.**

Bin Y, Jing Y, Cheung KY, Huang CY, Poon DMC, Yu SK.

PMID: 34520872 DOI: 10.1016/j.prro.2021.08.011.

---

**Extension and validation of a GPU-Monte Carlo dose engine gDPM for 1.5 T MR-Linac online independent dose verification.**

**Med Phys. 2021 Aug 13; online pre print.**

Li Y, Ding S, Wang B, Liu H, Huang X, Song T.  
PMID: 34387872 DOI: 10.1002/mp.15165.

**Acceptance procedure for the linear accelerator component of the 1.5 T MRI-Linac.**

**J Appl Clin Med Phys. 2021;22(8):45–59.**

Woodings SJ, de Vries JHW, Kok JMG, Hackett SL, van Asselen B, Bluemink JJ, van Zijp HM, van Soest TL, Roberts DA, Legendijk JJW, Raaymakers BW, Wolthaus JWH.  
PMID: 34275176 DOI: 10.1002/acm2.13068.

**Automatic 3D Monte-Carlo-based secondary dose calculation for online verification of 1.5T magnetic resonance imaging guided radiotherapy.**

**Phys. Imaging Radiat Oncol. 2021;19:6–12.**

Nachbar M, Mönnich D, Dohm O, Friedlein M, Zips D, Thorwarth D.  
PMID: 34307914 DOI: 10.1016/j.phro.2021.05.002.

**Technical Note: End-to-end verification of an MR-Linac using a dynamic motion phantom.**

**Med Phys. 2021;48(9):5479–89.**

Liu X, Li C, Zhu J, Gong G, Sun H, Li X, Sun M, Zhang Z, Li B, Yin Y, Li Z.  
PMID: 34174099 DOI: 10.1002/mp.15057.

**Machine QA for the Elekta Unity system: A report from the Elekta MR-Linac consortium.**

**Med Phys. 2021;48(5):e67–85.**

Roberts DA, Sandin C, Vesanen PT, Lee H, Hanson IM, Nill S, Perik T, Lim SB, Vedam S, Yang J, Woodings SW, Wolthaus JWH, Keller B, Budgell G, Chen X, Li XA.  
PMID: 33577091 DOI: 10.1002/mp.14764.

**Initial clinical experience of patient-specific QA of treatment delivery in online adaptive radiotherapy using a 1.5 T MR-Linac.**

**Biomed Phys Eng Express. 2021;7(3):035022.**

Yang B, Wong YS, Lam WW, Geng H, Huang CY, Tang KK, Law WK, Ho CC, Nam PH, Cheung KY, Yu SK.  
PMID: 33882471 DOI: 10.1088/2057-1976/abfa80.

**Analysis of patient-specific quality assurance for Elekta Unity adaptive plans using statistical process control methodology.**

**J Appl Clin Med Phys. 2021;22(4):99–107.**

Strand S, Boczkowski A, Smith B, Snyder JE, Hyer DE, Yaddanapudi S, Dunkerley DAP, St-Aubin J.  
PMID: 33756059 DOI: 10.1002/acm2.13219.

**Performance of a multileaf collimator system for a 1.5T MR-Linac.**

**Med Phys. 2020;48(2):546–55.**

Zhang K, Tian Y, Li M, Men K, Dai J.  
PMID: 33219549 DOI: 10.1002/mp.14608.

**Feasibility of using a commercial collapsed cone dose engine for 1.5T MR-Linac online independent dose verification.**

**Phys Med. 2020;80:288–96.**

Li Y, Wang B, Ding S, Liu H, Liu B, Xia Y, Song T, Huang X.  
PMID: 33246188 DOI: 10.1016/j.ejmp.2020.11.014.

**Quality assurance of IMRT treatment plans for a 1.5 T MR-Linac using a 2D ionization chamber array and a static solid phantom.**

**Phys Med Biol. 2020;65(16):16NT01.**

Mönnich D, Winter J, Nachbar M, Kunzel L, Boeke S, Gani C, Dohm O, Zips D, Thorwarth D.  
PMID: 32663819 DOI: 10.1088/1361-6560/aba5ec.

**Commissioning of a 1.5T Elekta Unity MR-Linac: A single institution experience.**

**J Appl Clin Med Phys. 2020;21(7):160–72.**

Snyder JE, St-Aubin J, Yaddanapudi S, Boczkowski A, Dunkerley DAP, Graves SA, Hyer DE.  
PMID: 32432405 DOI: 10.1002/acm2.12902.

---

**3D dosimetric verification of unity MR-Linac treatments by portal dosimetry.**

**Radiother Oncol. 2020;146:161–6.**

Torres-Xirau I, Olaciregui-Ruiz I, Kaas J, Nowee ME, van der Heide UA, Mans A.  
PMID: 32182503 DOI: 10.1016/j.radonc.2020.02.010.

**A deep learning-based correction to EPID dosimetry for attenuation and scatter in the Unity MR-Linac system.**

**Phys Med. 2020;71:124–31.**

Olaciregui-Ruiz I, Torres-Xirau I, Teuwen J, van der Heide UA, Mans A.  
PMID: 32135486 DOI: 10.1016/j.ejmp.2020.02.020.

**A daily end-to-end quality assurance workflow for MR-guided online adaptive radiation therapy on MR-Linac.**

**J Appl Clin Med Phys. 2019;21(1):205–12.**

Chen X, Ahunbay E, Paulson ES, Chen G, Li XA.  
PMID: 31799753 DOI: 10.1002/acm2.12786.

**Development and validation of a 1.5 T MR-Linac full accelerator head and cryostat model for Monte Carlo dose simulations.**

**Med Phys. 2019;(11):5304–13.**

Friedel M, Nachbar M, Monnich D, Dohm O, Thorwarth D.  
PMID: 31532829 DOI: 10.1002/mp.13829.

**Developing and characterizing MR/CT-visible materials used in QA phantoms for MRgRT systems.**

**Med Phys. 2017;45(2):773–82.**

Steinmann A, Stafford RJ, Sawakuchi G, Wen Z, Court L, Fuller CD, Followill D.  
PMID: 29178486 DOI: 10.1002/mp.12700.

**Characterization of a prototype MR-compatible Delta4 QA system in a 1.5 tesla MR-Linac.**

**Phys Med Biol. 2018;63(2):02NT02.**

de Vries JHW, Seravalli E, Houweling AC, Woodings SJ, van Rooij R, Wolthaus JWH, Lagendijk JJW, Raaymakers BW.  
PMID: 29176067 DOI: 10.1088/1361-6560/aa9d26.

**A back-projection algorithm in the presence of an extra attenuating medium: Towards EPID dosimetry for the MR-Linac.**

**Phys Med Biol. 2017;62(15):6322–40.**

Torres-Xirau I, Olaciregui-Ruiz I, Rozendaal RA, Gonzalez P, Mijnheer BJ, Sonke JJ, van der Heide UA, Mans A.  
PMID: 28714454 DOI: 10.1088/1361-6560/aa779e.

**The potential of polymer gel dosimeters for 3D MR-IGRT quality assurance**

**J Phys: Conf Ser. 2017;847:012059.**

Roed Y, Ding Y, Wen Z, Wang J, Pinsky L, Ibbott G.  
PMID: 10000000009 DOI: 10.1088/1742-6596/847/1/012059.

**An automated workflow for patient-specific quality control of contour propagation.**

**Phys Med Biol. 2016;61(24):8577–86.**

Beasley WJ, McWilliam A, Slevin NJ, Mackay RI, van Herk M.  
PMID: 27880733 DOI: 10.1088/1361-6560/61/24/8577.

**Technical Note: Development and performance of a software tool for quality assurance of online replanning with a conventional Linac or MR-Linac.**

**Med Phys. 2016;43(4):1713–9.**

Chen GP, Ahunbay E, Li XA.  
PMID: 27036569 DOI: 10.1118/1.4943795.

**Integrated megavoltage portal imaging with a 1.5 T MRI-Linac.**

**Phys Med Biol. 2011;56(19):N207.**

Raaymakers BW, de Boer JC, Knox C, Crijns SP, Smit K, Stam MK, van den Bosch MR, Kok JG, Lagendijk JJ.  
PMID: 21934191 DOI: 10.1088/0031-9155/56/19/N01.

---

## Tracking, gating

**Real-time non-rigid 3D respiratory motion estimation for MR-guided radiotherapy using MR-MOTUS.**

**IEEE Transactions On Medical Imaging, Volume:PP.**

Huttinga NRF, Bruijnen T, Van den Berg CAT, Sbrizzi A.

PMID: 34520351 DOI: 10.1109/TMI.2021.3112818.

**Dosimetric evaluation of MRI-guided multi-leaf collimator tracking and trailing for lung stereotactic body radiation therapy.**

**Med Phys. 2021;48(4):1520–32.**

Uijtewaal P, Borman PTS, Woodhead PL, Hackett SL, Raaymakers BW, Fast MF.

PMID: 33583042 DOI: 10.1002/mp.14772.

**Evaluation of MRI-derived surrogate signals to model respiratory motion.**

**Biomed Phys Eng Express. 2020;6(4):045015.**

Tran EH, Eiben B, Wetscherek A, Oelfke U, Meedt G, Hawkes DJ, McClelland JR.

PMID: 33194224 DOI: 10.1088/2057-1976/ab944c.

**The noise navigator for MRI-guided radiotherapy: An independent method to detect physiological motion.**

**Phys Med Biol. 2020;65(12):12NT01.**

Navest RJM, Mandija S, Zijlema SE, Stemkens B, Andreychenko A, Lagendijk JJW, van den Berg CAT.

PMID: 32330921 DOI: 10.1088/1361-6560/ab8cd8.

**Technical note: MLC-tracking performance on the Elekta unity MRI-Linac.**

**Phys Med Biol. 2019;64(15):15NT02.**

Glitzner M, Woodhead PL, Borman PTS, Lagendijk JJW, Raaymakers BW.

PMID: 31158831 DOI: 10.1088/1361-6560/ab2667.

**The impact of 2D cine MR-imaging parameters on automated tumor and organ localization for MR-guided real-time adaptive radiotherapy.**

**Phys Med Biol. 2018;63(23):235005.**

Menten MJ, Fast MF, Wetscherek A, Rank CM, Kachelriess M, Collins DJ, Nill S, Oelfke U

PMID: 30465542 DOI: 10.1088/1361-6560/aae74d

**Real-time auto-adaptive margin generation for MLC-tracked radiotherapy.**

**Phys Med Biol. 2017;62(1):186–201.**

Glitzner M, Fast MF, de Senneville BD, Nill S, Oelfke U, Lagendijk JJ, Raaymakers BW, Crijns SP.

PMID: 27991457 DOI: 10.1088/1361-6560/62/1/186.

**On the suitability of Elekta's Agility 160 MLC for tracked radiation delivery: Closed-loop machine performance.**

**Phys Med Biol. 2015;60(5):2005–17.**

Glitzner M, Crijns SP, de Senneville BD, Lagendijk JJ, Raaymakers BW.

PMID: 25675279 DOI: 10.1088/0031-9155/60/5/2005.

**Proof of concept of MRI-guided tracked radiation delivery: Tracking one-dimensional motion.**

**Phys Med Biol. 2012;57(23):7863–72.**

Crijns SP, Raaymakers BW, Lagendijk JJ.

PMID: 23151821 DOI: 10.1088/0031-9155/57/23/7863.

**Navigators for motion detection during real-time MRI-guided radiotherapy.**

**Phys Med Biol. 2012;57(21):6797–805.**

Stam MK, Crijns SP, Zonnenberg BA, Barendrecht MM, van Vulpen M, Lagendijk JJ, Raaymakers BW.

PMID: 23032581 DOI: 10.1088/0031-9155/57/21/6797.

**Towards MRI-guided linear accelerator control: gating on an MRI accelerator.**

**Phys Med Biol. 2011;56(15):4815–25.**

Crijns SP, Kok JG, Lagendijk JJ, Raaymakers BW.

PMID: 21753236 DOI: 10.1088/0031-9155/56/15/012.

---

## Total of 457 publications

As a leader in precision radiation therapy, Elekta is committed to ensuring every patient has access to the best cancer care possible. We openly collaborate with customers to advance sustainable, outcome-driven and cost-efficient solutions to meet evolving patient needs, improve lives and bring hope to everyone dealing with cancer. To us, it's personal, and our global team of 4,700 employees combine passion, science, and imagination to profoundly change cancer care.

We don't just build technology, we build hope.

## Elekta Offices

---

### Elekta AB

Box 7593  
SE-103 93  
Stockholm, Sweden

T +46 8 587 254 00  
F +46 8 587 255 00

### Europe

T +46 8 587 254 00  
F +46 8 587 255 00

### Turkey, India, Middle East & Africa

T +90 216 474 3500  
F +90 216 474 3406

### North & Central America including the Caribbean

T +1 770 300 9725  
F +1 770 448 6338

### South America & Cuba

T +55 11 5054 4550  
F +55 11 5054 4568

### Asia Pacific

T +852 2891 2208  
F +852 2575 7133

### Japan

T +81 3 6722 3800  
F +81 3 6436 4231

### China

T +86 10 5669 2800  
F +86 10 5669 2900



[elekta.com](https://www.elekta.com)



[/elekta](https://www.facebook.com/elekta)



[@elekta](https://twitter.com/elekta)



[/company/  
elekta](https://www.linkedin.com/company/elekta)

