



Trans-perineal Placement of Absorbable Peri-rectal Spacer for Prostate Cancer Radiotherapy Medical Coverage Policy

Utilization *ALERT*

- Prior to use of this MCP for evaluation of medical necessity, benefit coverage MUST be verified in the member's EOC or benefit document.
- For Medicare members, please refer to CMS guidelines through Medicare Coverage Database requirements.
- Note: After searching the Medicare Coverage Database, if no NCD/LCD/LCA is found, then use the policy referenced above for coverage guidelines

I. Service: Trans-Perineal Placement of Absorbable Peri-Rectal Spacer (SpaceOAR), for Prostate Cancer Radiotherapy

II. Specialty: Radiation Oncology

III. Description of Procedure or Service:

Men who undergo radiotherapy for prostate cancer as a result can develop radiation toxicity, also known as radiation proctitis, a potential side effect that can be permanent after radiation.

To reduce late-onset radiation-induced toxicity from irradiation of the rectum during prostate radiotherapy, an absorbable gel material was developed to be injected between the rectum and prostate prior to radiotherapy delivery. This material temporarily provides additional space between the area of treatment (prostate) and the organ at risk (OAR, rectum during treatment).

The only FDA-approved biodegradable gel material (spacer) available for use in the United States that can be used in this fashion is SpaceOAR®. The SpaceOAR™ System (Augmenix Inc. Bedford, MA, USA) is a biodegradable hydrogel spacer, cleared by the FDA on April 1, 2015, for marketing through the 513(a) (1) (de novo) process. The FDA approval classifies the SpaceOAR System, and equivalent devices of this generic type, into class II under the generic name, “*Absorbable perirectal spacer*” and product code OVB.

SpaceOAR® is made of biodegradable polyethylene glycol (PEG) - based hydrogel, injected transperineally between the prostate capsule and the rectum under transrectal ultrasound guidance in preparation for radiation treatment of prostate cancer. Insertion of the implantable trans-perineal spacer can result in reduction of radiation-induced late-onset rectal toxicity.

Modern, highly conformal radiation techniques which can better shape and target the radiation than older approaches have reduced the toxicity of treatments in the past decade without the need for SpaceOAR.



Trans-perineal Placement of Absorbable Peri-rectal Spacer for Prostate Cancer Radiotherapy Medical Coverage Policy

SpaceOAR placement is not without risk, which can include pain, bleeding, infection, and organ perforation. Given the potential for toxicity from placement and the already favorable toxicity profile of treatment without SpaceOAR, it is preferred that SpaceOAR only be used when normal rectal constraints cannot be met without its use.

IV. Indications for Referral

Placement of SpaceOAR can be considered for men with malignant non-metastatic neoplasm of prostate undergoing radiation therapy. In addition, the following indications, consistent with the original evaluation, should be maintained when the patient is receiving radiation therapy.

Placement of Space Oar is covered when ALL of the following criteria are met:

- A. Stage T1 or T2 prostate cancer;
- B. Gleason score of <= 7;
- C. Prostate-specific antigen (PSA) of <=20ng/ml;
- D. Zubrod performance status 0 to 1;
- E. No evidence of metastasis; and
- F. Documentation in the medical record that the rectal dose volume histogram (DVH) constraints cannot be met without SpaceOAR use

V. Contraindications

SpaceOAR is contraindicated and not recommended for the following conditions:

- A. Prostate volume of > 80 cm³;
- B. > 50% positive biopsy cores;
- C. Metastatic disease;
- D. Indicated or recent androgen deprivation therapy;
- E. Prior prostate surgery;
- F. Locally advanced prostate cancer;
- G. Men who have previously undergone high-intensity focused ultrasound, cryotherapy, or radiotherapy of the prostate;
- H. Prostatitis or anorectal inflammatory diseases for which there is increased risk of ulceration, fistula, or bleeding, such as ulcerative colitis or Crohn's disease; and
- I. Clinically significant coagulopathies or active bleeding disorders;

It may be possible to temporarily discontinue anticoagulants for the purpose of SpaceOAR placement for patients who are already on anticoagulants prior to radiotherapy of the prostate.

VI. Definitions

- A. Zubrod or ECOG (Eastern Cooperative Oncology Group) scale—a scale for indicating a patient's functional level

- 0, asymptomatic
- 1, symptomatic but fully ambulatory, cares for self
- 2, symptomatic, in bed < 50% of day, occasional assistance
- 3, symptomatic, in bed > 50% of the day but not bedridden, nursing care needed



Trans-perineal Placement of Absorbable Peri-rectal Spacer for Prostate Cancer Radiotherapy Medical Coverage Policy

- 4, bedridden

References

1. NCCN Clinical Practice Guidelines in Oncology. Prostate Cancer, Version 2.2019. JNCCN.org Volume 17 Number 5 May 2019. Accessed 08/03/2019.
<https://jccn.org/view/journals/jccn/17/5/article-p479.xml>
2. Wu, SY, Boreta L, Wu A, Cheung JP, Cunha JAM, Shinohara K & Chang AJ. Improved rectal dosimetry with the use of SpaceOAR during high-dose-rate brachytherapy. *Brachytherapy*, 2018-03-01, Volume 17, Issue 2, Pages 259-264 doi: 10.1016/j.brachy.2017.10.014. Epub 2017 Dec 2
<https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S1538472117304890?returnurl=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1538472117304890%3Fshowall%3Dtrue&referrer=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2F>
3. Mariados N, Sylvester J, Shah D, Karsh L, Hudes R, Beyer D, Kurtzman S, Bogart J, Hsi RA, Kos M, Ellis R, Logsdon M, Zimberg S, Forsythe K, Zhang H, Soffen E, Francke P, Mantz C, Rossi P, DeWeese T, Hamstra DA, Bosch W, Gay H, Michalski J. Hydrogel Spacer Prospective Multicenter Randomized Controlled Pivotal Trial: Dosimetric and Clinical Effects of Perirectal Spacer Application in Men Undergoing Prostate Image Guided Intensity Modulated Radiation Therapy. *Int J Radiat Oncol Biol Phys.* 2015 Aug 1;92(5):971-977. doi: 10.1016/j.ijrobp.2015.04.030. Epub 2015 Apr 23.
<https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S0360301615004307?returnurl=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0360301615004307%3Fshowall%3Dtrue&referrer=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2F>
4. Taggar AS, Charas T, Cohen GN, Boonyawan K, Kollmeier M, McBride S, Mathur N, Damato AL , Zelefsky MJ. Placement of an absorbable rectal hydrogel spacer in patients undergoing low-dose-rate brachytherapy with palladium-103. *Brachytherapy*. 2018 Mar - Apr;17(2):251-258. doi: 10.1016/j.brachy.2017.11.006. Epub 2017 Dec 11.
<https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S153847211730524X?returnurl=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS153847211730524X%3Fshowall%3Dtrue&referrer=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2F>
5. Karsh LI, Gross ET, Pieczonka CM, Aliotta PJ, Skomra CJ, Ponsky LE, Nieh PT, Han M, Hamstra DA, Shore ND. Absorbable Hydrogel Spacer Use in Prostate Radiotherapy: A Comprehensive Review of Phase 3 Clinical Trial Published Data. *Urology*. 2018 May; 115:39-44. doi: 10.1016/j.urology.2017.11.016. Epub 2017 Nov 23
<https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S009042951731213X?returnurl=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS009042951731213X%3Fshowall%3Dtrue&referrer=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2F>
6. Hamstra DA, Mariados N, Sylvester J, Shah D, Karsh L, Hudes R, Beyer D, Kurtzman S, Bogart J, Hsi RA, Kos M, Ellis R, Logsdon M, Zimberg S, Forsythe K, Zhang H, Soffen E, Francke P, Mantz C, Rossi P, DeWeese T, Daignault-Newton S, Fischer-Valuck BW, Chundury A, Gay H, Bosch W, Michalski J. Continued Benefit to Rectal Separation for Prostate Radiation Therapy: Final Results of a Phase III Trial. *Int J Radiat Oncol Biol Phys.* 2017 Apr 1;97(5):976-985. doi: 10.1016/j.ijrobp.2016.12.024. Epub 2016 Dec 23.



Trans-perineal Placement of Absorbable Peri-rectal Spacer for Prostate Cancer Radiotherapy Medical Coverage Policy

- <https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S0360301616335982?returnurl=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0360301616335982%3Fshowall%3Dtrue&referrer=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2F>
7. Trager M, Greenberger B, Harrison AS, Keller J, Den RB. SpaceOAR to improve dosimetric outcomes for monotherapy high-dose-rate prostate implantation in a patient with ulcerative colitis. *J Contemp Brachytherapy*. 2018 Dec;10(6):577-582. doi: 10.5114/jcb.2018.81001. Epub 2018 Dec 28. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6335554/>
 8. Hwang ME, Black PJ, Elliston CD, Wolthuis BA, Smith DR, Wu CC, Wenske S, Deutsch I. A novel model to correlate hydrogel spacer placement, perirectal space creation, and rectum dosimetry in prostate stereotactic body radiotherapy. *Radiat Oncol*. 2018 Oct 1;13(1):192. doi: 10.1186/s13014-018-1135-6. PMID: 30285812 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6167802/>
 9. Teh AY, Ko HT, Barr G, Woo HH, Rectal ulcer associated with SpaceOAR hydrogel insertion during prostate brachytherapy. *BMJ Case Rep*. 2014; 2014: bcr2014206931. Published online 2014 Dec 22. doi: 10.1136/bcr-2014-206931 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4275689/pdf/bcr-2014-206931.pdf>
 10. Neal Shore, MD, FACS. Spacers and Prostate Radiation Therapy: What Urologist Should Know. *Everyday Urology – Oncology Insights*: Volume 3, Issue 4 <https://www.urotoday.com/journal/everyday-urology-oncology-insights/articles/108597-spacers-and-prostate-radiation-therapy-what-urologists-should-know.html> <https://pubmed.ncbi.nlm.nih.gov/32035187/>
 11. Seymour ZA, Hamstra DA, Daignault-Newton S, et al. Long-term Follow-up After Radiotherapy for Prostate Cancer with and without Rectal Hydrogel Spacer: A Pooled Prospective Evaluation of Bowel Associated Quality of Life [published online ahead of print, 2020 Apr 25]. *BJU Int*. 2020;10.1111/bju.15097. doi:10.1111/bju.15097. Accessed 05/11/2020 <https://pubmed.ncbi.nlm.nih.gov/32333714/>
 12. Karsh LI, Gross ET, Pieczonka CM, et al. Absorbable Hydrogel Spacer Use in Prostate Radiotherapy: A Comprehensive Review of Phase 3 Clinical Trial Published Data. *Urology*. 2018; 115:39-44. doi: 10.1016/j.urology.2017.11.016. Accessed 05/11/2020 <https://pubmed.ncbi.nlm.nih.gov/29174940/>
 13. Quinn TJ, Daignault-Newton S, Bosch W, et al. Who Benefits from a Prostate Rectal Spacer? Secondary Analysis of a Phase III Trial. *Pract Radiat Oncol*. 2020;10(3):186-194. doi: 10.1016/j.prro.2019.12.011. Accessed 05/11/2020. <https://pubmed.ncbi.nlm.nih.gov/31978591/>
 14. Song, Danny Y.; Herfarth, Klaus K.; Uhl, Matthias; Eble, Michael J.; Pinkawa, Michael; van Triest, Baukelen; Kalisvaart, Robin; Weber, Damien C.; Miralbell, Raymond; DeWeese, Theodore L.; Ford, Eric C. A Multi-institutional Clinical Trial of Rectal Dose Reduction via Injected Polyethylene-Glycol Hydrogel During Intensity Modulated Radiation Therapy for Prostate Cancer: Analysis of Dosimetric Outcomes *International Journal of Radiation Oncology, Biology, Physics*. 1 September 2013 87(1):81-87 Language: English. DOI: 10.1016/j.ijrobp.2012.12.019,
 15. Kahn, Jenna; Dahman, Bassam; McLaughlin, Christopher; Kapoor, Priyanka; Kapoor, Rishabh; Harris, Emily; Sharma, Manju; Schutzer, Matthew; Moghanaki, Drew. Rectal spacing, prostate coverage, and periprocedural outcomes after hydrogel spacer injection during low-dose-rate brachytherapy

- implantation. *Brachytherapy*. March-April 2020 19(2):228-233 Language: English. DOI: 10.1016/j.brachy.2019.11.002
16. Pinkawa M; Berneking V; Schlenter M; Krenkel B; Eble MJ. Quality of Life After Radiation Therapy for Prostate Cancer With a Hydrogel Spacer: 5-Year Results. (English); Abstract available. *International Journal of Radiation Oncology, Biology, Physics [Int J Radiat Oncol Biol Phys]*. ISSN: 1879-355X, 2017 Oct 01; Vol. 99 (2), pp. 374-377; Publisher: Elsevier, Inc; PMID: 28871986, Database: MEDLINE PubMed
 17. Miller LE, Efstathiou JA, Bhattacharyya SK, et al. Association of the Placement of a Perirectal Hydrogel Spacer with the Clinical Outcomes of Men Receiving Radiotherapy for Prostate Cancer: A Systematic Review and Meta-analysis. *JAMA Netw Open*. Jun 01, 2020; 3(6): e208221. PMID 32585020
 18. Cuccia, F., Mazzola, R., Nicosia, L. et al. Impact of hydrogel peri-rectal spacer insertion on prostate gland intra-fraction motion during 1.5 T MR-guided stereotactic body radiotherapy. *Radiat Oncol* 15, 178 (2020). <https://doi.org/10.1186/s13014-020-01622-3>
 19. S. Vaggers, B. P. Rai, E. C. P. Chedgy, A. de la Taille, B. K. Somani. Polyethylene glycolbased hydrogel rectal spacers for prostate brachytherapy: a systematic review with a focus on technique. *World Journal of Urology* 14 May 2020. <https://doi.org/10.1007/s00345-020-03414-6>
 20. Hiroki Sato, Takahiro Kato, Tomoaki Motoyanagi, Kimihiro Takemasa, Yuki Narita, Masato Kato, Takuya Matsumoto, Sho Oyama, Hisashi Yamaguchi, Hitoshi Wada, Masao Murakami, Preliminary analysis of prostate positional displacement using hydrogel spacer during the course of proton therapy for prostate cancer, *Journal of Radiation Research*, Volume 62, Issue 2, March 2021, Pages 294–299, <https://doi.org/10.1093/jrr/rtaa115>
 21. Fagundes, M; Rodrigues, M; Olzewski, S; Khan, F; McKenzie, C; Gutierrez, A; Chuong, M; Mehta M. Expanding the Utilization of Rectal Spacer Hydrogel for Larger Prostate Glands (>80 cc): Feasibility and Dosimetric Outcomes. *Advances in Radiation Oncology*, Volume 6 Issue 3, 100651, May 01, 2021, DOI:<https://doi.org/10.1016/j.adro.2021.100651>
 22. Michalski JM, Moughan J, Purdy J, et al. Effect of standard vs dose-escalated radiation therapy for patients with intermediate-risk prostate cancer: the NRG oncology RTOG 0126 randomized clinical trial. *JAMA Oncol* 2018; 4: e180039.
 23. Dearnaley D, Syndikus I, Mossop H, et al. Conventional versus hypofractionated high-dose intensitymodulated radiotherapy for prostate cancer: 5-year outcomes of the randomised, non-inferiority, phase
 24. CHHiP trial. Lancet Oncol 2016; 17: 1047–60 3. Hall W, Tree A, Dearnaley D, et al. Considering benefit and risk before routinely recommending SpaceOAR. Lancet Oncol 2021; 22: 11-13. 4. 4. Hamstra DA, Mariados N, Sylvester J, et al. Continued benefit to rectal separation for prostate radiation therapy: final results of a phase III trial. *Int J Radiat Oncol Biol Phys* 2017; 97: 976–85.
 25. AminsharifiA , Kotamarti S, Silver S, Schulman A. Major Complications and Adverse Events Related to the Injection of the SpaceOAR Hydrogel System Before Radiotherapy for Prostate Cancer: Review of the Manufacturer and User Facility Device Experience Database (From: Aminsharifi A, Kotamarti S, Silver D, et al., *J Endourol* 2019;33:868-871; DOI: 10.1089/end.2019.0431).
 26. National Institute for Health and Care Excellence. Biodegradable spacer insertion to reduce rectal toxicity during radiotherapy for prostate cancer. IPG590 2017.



Trans-perineal Placement of Absorbable Peri-rectal Spacer for Prostate Cancer Radiotherapy Medical Coverage Policy

- /<https://www.nice.org.uk/guidance/ipg590>
27. Vanneste, B., Van Limbergen, E. J., Marcelissen, T., Reynders, K., Melenhorst, J., van Roermund, J., & Lutgens, L. (2021). Is prostate cancer radiotherapy using implantable rectum spacers safe and effective in inflammatory bowel disease patients?. *Clinical and translational radiation oncology*, 27, 121–125. <https://doi.org/10.1016/j.ctro.2021.01.007>
28. Butler, W. M., Kurko, B. S., Scholl, W. J., & Merrick, G. S. (2021). Effect of the timing of hydrogel spacer placement on prostate and rectal dosimetry of low-dose-rate brachytherapy implants. *Journal of contemporary brachytherapy*, 13(2), 145–151. <https://doi.org/10.5114/jcb.2021.105281>
29. NCCN Clinical Practice Guidelines in Oncology: Prostate Cancer V2.2021
<https://pubmed.ncbi.nlm.nih.gov/33545689/>
30. Canadian Agency for Drugs and Technologies in Health (CADTH). Hydrogel Spacers for Patients with Prostate Cancer: A Review of Clinical Effectiveness and Cost Effectiveness. 02/22/2019.<https://www.cadth.ca/sites/default/files/pdf/htis/2019/RC1069%20Space%20OAR%20Hydrogel%20Final.pdf>.
31. Hwang, M. E., Mayeda, M., Liz, M., Goode-Marshall, B., Gonzalez, L., Elliston, C. D., Spina, C. S., Padilla, O. A., Wenske, S., & Deutsch, I. (2019). Stereotactic body radiotherapy with periprostatic hydrogel spacer for localized prostate cancer: toxicity profile and early oncologic outcomes. *Radiation oncology (London, England)*, 14(1), 136. <https://doi.org/10.1186/s13014-019-1346-5>
32. Morgan, S. C., Hoffman, K., Loblaw, D. A., Buyounouski, M. K., Patton, C., Barocas, D., Bentzen, S., Chang, M., Efstathiou, J., Greany, P., Halvorsen, P., Koontz, B. F., Lawton, C., Leyrer, C. M., Lin, D., Ray, M., & Sandler, H. (2018). Hypofractionated Radiation Therapy for Localized Prostate Cancer: Executive Summary of an ASTRO, ASCO, and AUA Evidence-Based Guideline. *Practical radiation oncology*, 8(6), 354–360. <https://doi.org/10.1016/j.prro.2018.08.002>
33. Clinically Localized Prostate Cancer: AUA/ASTRO/SUO Guideline. 2022.
<https://www.auanet.org/guidelines-and-quality/guidelines/clinically-localized-prostate-cancer-aul-astro-guideline-2022>
34. Quinn, T. J., Daignault-Newton, S., Bosch, W., Mariados, N., Sylvester, J., Shah, D., Gross, E., Hudes, R., Beyer, D., Kurtzman, S., Bogart, J., Hsi, R. A., Kos, M., Ellis, R., Logsdon, M., Zimberg, S., Forsythe, K., Zhang, H., Soffen, E., Francke, P., ... Hamstra, D. A. (2020). Who Benefits from a Prostate Rectal Spacer? Secondary Analysis of a Phase III Trial. *Practical radiation oncology*, 10(3), 186–194. <https://doi.org/10.1016/j.prro.2019.12.011>
35. See, A. W., Bowden, P., Wells, G., Appu, S., Lawrentschuk, N., Lioudakis, P., Pandeli, C., Aarons, Y., Smyth, L. M. L., & McKenzie, D. P. (2022). Dose-escalated radiotherapy to 82 Gy for prostate cancer following insertion of a peri-rectal hydrogel spacer: 3-year outcomes from a phase II trial. *Radiation oncology (London, England)*, 17(1), 131. <https://doi.org/10.1186/s13014-022-02103-5>
36. Mariados, N. F., Orio, P. F., 3rd, Schiffman, Z., Van, T. J., Engelman, A., Nurani, R., Kurtzman, S. M., Lopez, E., Chao, M., Boike, T. P., Martinez, A. A., Gejerman, G., Lederer, J., Sylvester, J. E., Bell, G., Rivera, D., Shore, N., Miller, K., Sinayuk, B., Steinberg, M. L., ... King, M. T. (2023). Hyaluronic Acid Spacer for Hypofractionated Prostate Radiation Therapy: A Randomized Clinical Trial. *JAMA oncology*, 9(4), 511–518. <https://doi.org/10.1001/jamaoncol.2022.7592>
37. Ogita, M., Yamashita, H., Nozawa, Y., Ozaki, S., Sawayanagi, S., Ohta, T., & Nakagawa, K. (2021). Phase II study of stereotactic body radiotherapy with hydrogel spacer for prostate cancer: acute toxicity



Trans-perineal Placement of Absorbable Peri-rectal Spacer for Prostate Cancer Radiotherapy Medical Coverage Policy

and propensity score-matched comparison. *Radiation oncology (London, England)*, 16(1), 107.
<https://doi.org/10.1186/s13014-021-01834-1>

Approval History

Effective June 01, 2016, state filing is no longer required per Maryland House Bill HB 798 – Health Insurance – Reporting

Date approved by RUMC*	Date of Implementation
09/26/2019	09/26/2019
09/24/2020	09/24/2020
09/27/2021	09/27/2021
09/23/2022	09/23/2022
08/24/2023	08/24/2023

*The Regional Utilization Management Committee received delegated authority in 2011 to review and approve designated Utilization Management and Medical Coverage Policies by the Regional Quality Improvement Committee.

Note: Kaiser Permanente Mid-Atlantic States (KPMAS) include referral and authorization criteria to support primary care and specialty care practitioners, as appropriate, in caring for members with selected conditions. Medical Coverage Policies are not intended or designed as a substitute for the reasonable exercise of independent clinical judgment by a practitioner in any set of circumstances for an individual member.

©2023 Kaiser Foundation Health Plan of the Mid-Atlantic States, Inc.
©2023 Mid-Atlantic Permanente Medical Group, P.C.