

DAFTAR PUSTAKA

- [1] World Health Organization (WHO), "World Health Statistics 2023 : Monitoring Health for the SDGs, Sustainable Development Goals," World Health Organization (WHO), Geneva, 2023.
- [2] World Health Organization (WHO), "Cancer," 3 Februari 2022. [Online]. Available: <https://www.who.int/news-room/fact-sheets/detail/cancer>. [Accessed 2 September 2023].
- [3] International Agency for Research on Cancer, "Cancer Today," World Health Organization (WHO), 8 February 2024. [Online]. Available: <https://gco.iarc.fr/today/en>. [Accessed 18 February 2024].
- [4] R. Siegel, M. P. Nikita Sandeep Wagle MBBS, A. Cercek, R. Smith and A. J. DVM, "Colorectal Cancer Statistics 2023," *American Cancer Society*, vol. 73, no. 3, pp. 233-254, 2022.
- [5] R. A. Chandra, F. K. Keane, F. E. M. Voncken and C. R. T. Jr, "Contemporary radiotherapy: present and future," *Radiation Medicine*, vol. 398, no. 10295, pp. 171-184, 2021.
- [6] M. Hu, L. Jiang, X. Cui, J. Zhang and J. Yu, "Proton Beam Therapy For Cancer in The Era of Precision Medicine," *Hematology & Oncology*, vol. 11, p. 136, 2018.
- [7] M. J. LaRiviere, P. M. G. S. and C. E. Hill-Kayser, "Proton Therapy," *Radiation Oncology*, vol. 33, pp. 989-1009, 2019.
- [8] R. Mohan and D. Grosshans, "Proton therapy – Present and future," *Advanced Drug Delivery Reviews*, vol. 109, pp. 26-44, 2017.
- [9] R. Mohan, "A review of proton therapy – Current status and future directions," *Precision Radiation Oncology*, vol. 6, pp. 164-176, 2022.
- [10] T. Furuta and T. Sato, "Medical application of particle and heavy ion transport code system PHITS," *Radiological Physics and Technology*, vol. 14, pp. 215-225, 2021.
- [11] B. Setiadi, A. W. Harto and Y. Sardjono, "Analisis Dosis dan Waktu Iradiasi Terapi Pion Negatif pada Kanker Rektum Menggunakan Particle and Heavy Ion Transport Code System (PHITS)," Universitas Gadjah Mada, Yogyakarta, 2022.



- [12] M. Ilham, A. W. Harto and Y. Sardjono, "Analisis Dosis dan Waktu Iradiasi Pada Kanker Serviks Menggunakan PHITS," Universitas Gadjah Mada, Yogyakarta, 2022.
- [13] E. B. Jeans, K. R. Jethwa, W. S. Harmsen, M. Neben-Wittich, J. B. Ashman, K. W. Merrell, B. Giffey, S. Ito, B. Kazemba, C. Beltran, M. G. Haddock and C. L. Hallemeyer, "Clinical Implementation of Preoperative Short-Course Pencil Beam Scanning Proton Therapy for Patients With Rectal Cancer," *Advances in Radiation Oncology*, vol. 5, pp. 865-870, 2020.
- [14] J. S. Parzen, W. Zheng, X. Li, X. Ding and d. P. Kabolizadeh, "Optimization of Field Design in the Treatment of Rectal Cancer with Intensity Modulated Proton Beam Radiation Therapy: How Many Fields Are Needed to Account for Rectal Distension Uncertainty?," *Advance in Radiation Oncology*, vol. 6, pp. 1-10, 2021.
- [15] P. Ryan C. Stoner and M. Elena K. Korngold, "Anatomy of Pelvic Lymph Nodal Stations and Their Role in Staging of Rectal Cancers," *Roentgenology*, pp. 152-158, 2020.
- [16] S. Marecik, J. Park and L. M. Prasad, "Rectal Anatomy: Clinical Perspective," *Rectal Cancer*, vol. 3, pp. 1-24, 2018.
- [17] J. M. Lee and N. K. Kim, "Essential Anatomy of the Anorectum for Colorectal Surgeons Focused on the Gross Anatomy and Histologic Findings," *Anatomy of Coloproctology*, vol. 2, pp. 59-71, 2018.
- [18] P. J. Bazira, "Anatomy of the rectum and anal canal," *Basic Science*, vol. 1, no. 41, pp. 7-15, 2022.
- [19] M. Bryan Oronsky, M. P. Tony Reid, C. L. MD and M. Susan J. Knox, "Locally advanced rectal cancer: The past, present, and future," *Seminars in Oncology*, vol. 47, pp. 85-92, 2020.
- [20] B. Rathva and S. V. Desai, "Colorectal cancer: Etiology, pathogenesis and current treatment," *Journal of Innovations in Pharmaceutical and Biological Sciences (JIPBS)*, vol. 7, no. 4, pp. 20-24, 2020.
- [21] E. Dekker, P. J. Tanis, J. L. A. Vleugels, P. M. Kasi and M. B. Wallace, "Colorectal cancer," *Seminar*, vol. 394, pp. 1467-1480, 2019.



- [22] Cleveland Clinic , "Adenomas," Clinic for Health, 22 November 2021. [Online]. Available: <https://my.clevelandclinic.org/health/diseases/21477-adenomas>. [Accessed 3 March 2024].
- [23] M. Beyzadeoglu, G. Ozyigit and C. Ebruli, Basic Radiation Oncology, Berlin: Springer, 2010.
- [24] S. Mullangi and M. R. Lekkala, "Adenocarcinoma," *National Library of Medicine*, vol. 4, pp. 1 -24, 2023.
- [25] V. Vendrelya, E. R. D. Campo, A. Modesto, M. Jolnerowski, N. Meillan, S. Chiavassa, A.-A. Serre, P. Gérardi, G. Créhanges, F. Huguet, C. Lemanski and D. Peiffert, "Rectal cancer radiotherapy," *Radiotherapy Oncology*, vol. 26, pp. 272-278, 2022.
- [26] R. Glynne-Jones, L. Wyrwicz, E. Tiret, G. Brown, C. Rödel, A. Cervantes and D. Arnold, "Rectal cancer," ESMO Guidelines Committee, Switzerland, 2018.
- [27] B. Saira E. Alex, M. Eric D. Brooks and M. Emma B. Holliday, "Proton therapy for colorectal cancer," *Applied radiation oncology*, vol. 1, pp. 17-26, 2019.
- [28] E. Podgorsak, Radiation Oncology Physics : A Handbook for Teachers and Students, Vienna : International Atomic Energy Agency, 2005.
- [29] C. R. Hansen, W. Crijns, M. Hussein, L. Rossi, P. Gallego, W. Verbakel, J. Unkelbach, D. Thwaites and B. Heijmen, "Radiotherapy Treatment planning study Guidelines (RATING): A framework for setting up and reporting on scientific treatment planning studies," *Radiotherapy and Oncology*, vol. 153, pp. 67-78, 2020.
- [30] D. Hinckley, "ICRU Report No. 50 : Prescribing, Recording, and Reporting Photon Beam Therapy," International Commission on Radiation Units and Measurements (ICRU), Maryland, 1993.
- [31] International Commission on Radiation Units and Measurements (ICRU), "ICRU Report No. 62 : Prescribing, Recording, and Reporting Photon Beam Therapy (Supplement to ICRU 50)," International Commission on Radiation Units and Measurements (ICRU), Maryland, 1999.



- [32] W. Parker and H. Patrocinio, "Clinical Treatment Planning In External Photon Beam Radiotherapy," Quebec, 2005.
- [33] M. Fok, S. Toh, J. Easoy, H. Fowler, R. Clifford, J. Parsons and D. Vimalachandran, "Proton beam therapy in rectal cancer: A systematic review and meta-analysis," *Surgical Oncology*, vol. 38, pp. 1-8, 2021.
- [34] S. C. Vaz, J. A. Adam, R. C. D. Bolton, P. Vera, W. v. Elmpt, K. Herrmann and e. al, "Joint EANM/SNMMI/ESTRO practice recommendations for the use of 2-[18F]FDG PET/CT external beam radiation treatment planning in lung cancer V1.0," *European Journal of Nuclear Medicine and Molecular Imaging*, vol. 49, p. 1386–1406, 2021.
- [35] International Commission on Radiation Units (ICRU), "The International Commission on Radiation Units and Measurements : Report no. 83," Oxford University Press, Oxford, 2010.
- [36] Radiation Therapy Oncology Group (Rtog), "A Phase Iii Randomized Study Of High Dose 3d-Crt/Imrt Versus Standard Dose 3d-Crt/Imrt In Patients Treated For Localized Prostate Cancer," Washington University Press, Washington, 2004.
- [37] D. T. Arp, A. L. Appelt, L. H. Jensen, B. M. Havelund, Nissen, S. L. Risumlund and M. S. Nielsen, "Treatment planning for patients with low rectal cancer in a multicenter prospective organ preservation study," *Physica Medica*, vol. 118, pp. 1-9, 2024.
- [38] z. Temelli, M. Demirtas, M. S. Sisecioglu and E. K. Pepele, "Dosimetric Comparison of Adjuvant Pelvic Radiotherapy for Endometrial Cancer using Intensity-Modulated Radiotherapy (IMRT), Volumetric Modulated Arc Therapy (VMAT) and Helical Tomotherapy (HT)," *Dosimetric Comparison of Radiotherapy for Endometrial Cancer*, vol. 3, no. 3, p. 203–210, 2019.
- [39] A. L. Appelt, E. M. Kerkhof, L. Nyvang, E. C. Harderwijk, N. L. Abbott, M. Teo and e. al, "Robust dose planning objectives for mesorectal radiotherapy of early stage rectal cancer – A multicentre dose planning study," *Technical Innovations & Patient Support in Radiation Oncology*, vol. 11, pp. 14-21, 2019.
- [40] American Society for Radiation Oncology (ASTRO) and the American Association of Physicists in Medicine (AAPM), "Quantitative Analysis of



Normal Tissue Effects in the Clinic (QUANTEC)," *Radiation Oncology*, vol. 76, no. 3, pp. 16-20, 2010.

- [41] Y. Ebara, H. Tsutsui, S. Nakajima, S. Hara, S. Nomura, K. Suga, J. Yoshida, K. Taki, H. Murata, N. Takahashi, A. Hashimoto, T. Sakemi, N. Kamiguchi, Y. Arakawa, T. Morie and T. Hirayama, "First Beam Extraction from a Superconducting Azimuthally Varying Field Cyclotron for Proton Therapy," *Nuclear Inst. and Methods in Physics Research*, vol. 1056, pp. 1-10, 2023.
- [42] H. Paganetti and T. Bortfeld, *Proton Beam Radiotherapy - The State of the Art*, Boston: Springer, 2005.
- [43] B. Gottschalk, "Radiotherapy Proton Interactions in Matter," *Medical Physics*, pp. 1-31, 2018.
- [44] J. Mott and J. Daniel, "Interactions of Electromagnetic Radiation and Subatomic Particles with Matter - Part 2," *Clinical Oncology*, vol. 33, pp. 455-460, 2021.
- [45] J. E. Turner, *Atoms, Radiation, and Radiation Protection*, Darmstadt: WILEY-VCH Verlag GmbH & Co KGaA, 2007.
- [46] N. Namba, T. Tannert and K. Alaimo, *New Era of Radiation Therapy to Fight Cancer*, Hokkaido: Hokkaido University, 2019.
- [47] D. Oh, "Proton therapy: the current status of the clinical evidences," *Precision and Future Medicine*, vol. 3, no. 3, pp. 91-102, 2019.
- [48] O. Desouky, N. Ding and G. Zhou, "Targeted and non-targeted effects of ionizing radiation," *Journal of Radiation Research and Applied Sciences*, vol. 8, pp. 247-254, 2018.
- [49] M. C. J. PhD and A. J. v. d. K. PhD, *Basic Clinical Radiobiology : Fifth Edition*, London: CRC Press, 2019.
- [50] N. F. A. Bakar, S. A. Othman, N. F. A. N. Azman and N. S. Jasrin, "Effect of ionizing radiation towards human health : A review," *International Conference on Sustainable Energy and Green Technology*, vol. 268, pp. 1-6, 2018.
- [51] J. Izewska And G. Rajan, "Radiation Dosimeters," in *Review of Radiation Oncology Physics: A Handbook for Teachers and Students*, Vienna, International Atomic Energy Agency, pp. 59-85.



- [52] F. M. Khan and J. P. Gibbons, *The Physics of Radiation Therapy*, Philadelphia: Woltres Kluwer, 2014.
- [53] S. Jain, "Radiation in medical practice & health effects of radiation: Rationale, risks, and rewards," *Journal of Family Medicine and Primary Care*, vol. 10, pp. 1520-1524, 2021.
- [54] Ministry of the Environment of Japan, "Unit of Radiation," in *BOOKLET to Provide Basic Information Regarding Health Effects of Radiation (3rd edition)*, Tokyo, Government of Japan, 2019, pp. 34-44.
- [55] W. Northcutt, "CHAPTER 3 : RADIATION DOSE," in *Review of Radiation Oncology Physics: A Handbook for Teachers and Students*, 2018.
- [56] M. Y. Park and S. E. Jung, "Patient Dose Management: Focus on Practical Actions," *The Korean Academy of Medical Sciences*, vol. 31, pp. 45-54, 2016.
- [57] N. C. Basjaruddin, "Metode Monte Carlo dan Penerapannya," Politeknik Negeri Bandung, Bandung, 2016.
- [58] T. Satoa, YosukeIwamotoa, S. Hashimotoa, T. Ogawaa, T. Furutaa, S.-i. Abea, TakeshiKaia, P.-E. Tsaia, N. Matsudaa, H. Iwaseb, N. Shigyoc, L. Sihverd and K. Niita, "Features of Particle and Heavy Ion Transport code System (PHITS) version 3.02," *JOURNAL OF NUCLEAR SCIENCE AND TECHNOLOGY*, vol. 55, no. 6, pp. 684-690, 2018.
- [59] T. Sato, Y. Iwamoto, S. Hashimoto, T. Ogawa, T. Furuta, S.-I. Abe, T. Kai, Y. Matsuya, N. Matsuda, Y. Hirata, T. Sekikawa, L. Yao, P.-E. Tsai, H. N. Ratliff, H. Iwase and e. al, "Recent improvements of the particle and heavy ion transport code system – PHITS version 3.33," *JOURNAL OF NUCLEAR SCIENCE AND TECHNOLOGY*, vol. 61, no. 1, pp. 127-135, 2024.
- [60] The International Commission on Radiological Protection, "Annals of the ICRP 145 : Adult Mesh-type Reference," *ICRP Publication 145*, vol. 49, no. 3, 2020.
- [61] National Institute of Standards and Technology (NIST), "Stopping and Range for Proton (PSTAR).," National Institute of Standards and Technology (NIST), 15 November 2019. [Online]. Available: <https://physics.nist.gov/PhysRefData/Star/Text/PSTAR.html>. [Accessed 23 4 2024].



- [62] Sumitomo Heavy Industries, Ltd, "Current Status of Sumitomo's Superconducting Cyclotron Development for Proton Therapy," Sumitomo Heavy Industries, Ltd, 2019, 2019.
- [63] P. Radhe Mohan, "A Review of Proton Therapy – Current Status and Future Directions," *Precision Radiation Oncology*, vol. 6, no. 2, pp. 164-176, 2022.
- [64] E. Sulistya, Kusminarto and A. Hermanto, "Determination of Proton Energy and Dosage to Obtain SOBP Curve in the Proton Beam Radiotherapy Treatment Planning," *Engineering Research and Application*, vol. 6, no. 8, pp. 28-30, 2016.

