

DAFTAR PUSTAKA

- Aliyah, F., Pinasti, S. G., & Rahman, A. A. (2021). Proton therapy facilities: An overview of the development in recent years. *IOP Conference Series: Earth and Environmental Science*, 927(1). <https://doi.org/10.1088/1755-1315/927/1/012042>
- American Society for Gastrointestinal Endoscopy. (2010). *Anatomy of Colon*.
- Arp, D. T., Appelt, A. L., Jensen, L. H., Havelund, B. M., Nissen, H. D., Risumlund, S. L., Sjölin, M. E. E., Nielsen, M. S., & Poulsen, L. Ø. (2024). Treatment planning for patients with low rectal cancer in a multicenter prospective organ preservation study. *Physica Medica*, 118. <https://doi.org/10.1016/j.ejmp.2023.103206>
- Azzouz, L. L., & Sharma, S. (2018). *Physiology, Large Intestine*.
- Beyzadeoglu, M., Ozyigit, G., & Ebruli, C. (2010). *Basic Radiation Oncology*.
- Bruno, F., Granata, V., Bellisari, F. C., Sgalambro, F., Tommasino, E., Palumbo, P., Arrigoni, F., Cozzi, D., Grassi, F., Brunese, M. C., Pradella, S., Stefano, M. L. M. D. S., Cutolo, C., Di Cesare, E., Splendiani, A., Giovagnoni, A., Miele, V., Grassi, R., Masciocchi, C., & Barile, A. (2022). Advanced Magnetic Resonance Imaging (MRI) Techniques: Technical Principles and Applications in Nanomedicine. In *Cancers* (Vol. 14, Issue 7). MDPI. <https://doi.org/10.3390/cancers14071626>
- C. H. Kim, Y. S. Y. N. P.-H. M. Z. W. E. B. C. L. C. C. T. T. N. K. E. H. S. K. M. C. H. R. Q. B. S. C. H. H. and B. S. (2020). *ICRP Publication 145: Adult mesh-type reference computational phantoms. in Annals of the ICRP Volume 49, No. 3*.
- Carmichael, J. C., & Mills, S. (2021). Anatomy and Embryology of the Colon, Rectum, and Anus. In *The ASCRS Textbook of Colon and Rectal Surgery: Fourth Edition* (pp. 3–27). Springer International Publishing. https://doi.org/10.1007/978-3-030-66049-9_1
- Chaput, G., Ccfc, M. A., & Regnier, L. (2021). *Oncology Briefs Radiotherapy Clinical pearls for primary care*.
- Chen, Z., Dominello, M. M., Joiner, M. C., & Burmeister, J. W. (2023). Proton versus photon radiation therapy: A clinical review. In *Frontiers in Oncology* (Vol. 13). Frontiers Media S.A. <https://doi.org/10.3389/fonc.2023.1133909>

- Collings, E. W., Lu, L., Gupta, N., & Sumption, M. D. (2022). Accelerators, Gantries, Magnets and Imaging Systems for Particle Beam Therapy: Recent Status and Prospects for Improvement. In *Frontiers in Oncology* (Vol. 11). Frontiers Media S.A. <https://doi.org/10.3389/fonc.2021.737837>
- De Rosa, M., Pace, U., Rega, D., Costabile, V., Duraturo, F., Izzo, P., & Delrio, P. (2015). Genetics, diagnosis and management of colorectal cancer (Review). *Oncology Reports*, 34(3), 1087–1096. <https://doi.org/10.3892/or.2015.4108>
- Dekker, E., Tanis, P. J., Vleugels, J. L. A., Kasi, P. M., & Wallace, M. B. (2019). Colorectal cancer. In www.thelancet.com
- Denham, L. J., Kerstetter, J. C., & Herrmann, P. C. (2012). The complexity of the count: Considerations regarding lymph node evaluation in colorectal carcinoma. In *Journal of Gastrointestinal Oncology* (Vol. 3, Issue 4, pp. 342–352). Pioneer Bioscience Publishing. <https://doi.org/10.3978/j.issn.2078-6891.2012.027>
- Dewi, R. A., Taji, S., Wardani, K., & Suharyana, D. (2023). Analisis Distribusi Dosis Proton pada Terapi Proton untuk Kanker Glioblastoma menggunakan Software MCNP6. *Jurnal Fisika*, 13(1), 40–50. <https://journal.unnes.ac.id/nju/index.php/jf/index>
- Ebara, Y., Tsutsui, H., Nakajima, S., Hara, S., Nomura, S., Suga, K., Yoshida, J., Taki, K., Murata, H., Takahashi, N., Hashimoto, A., Sakemi, T., Kamiguchi, N., Arakawa, Y., Morie, T., Hirayama, T., Oda, H., Fujita, S., Kanakura, J., ... Kumata, Y. (2023). First beam extraction from a superconducting azimuthally varying field cyclotron for proton therapy. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 1056. <https://doi.org/10.1016/j.nima.2023.168629>
- Ebara, Y., Tsutsui, H., Nakajima, S., Yoshida, J., Tsurudome, T., Miyashita, T., & Kumata, Y. (2022). COMMISSIONING OF THE SUMITOMO SUPERCONDUCTING AVF CYCLOTRON SC230. <https://doi.org/10.18429/JACoW-CYCLOTRONS2022-WEB004>
- Emami, D. (2013). *Tolerance of Normal Tissue to Therapeutic Radiation* (Vol. 1, Issue 1).
- Escobar-Peralta, E., Gil-García, R., Quezada-Bautista, A. A., & López-Riverol, O. (2022). Helical tomotherapy: advanced radiotherapy

- technology. *Revista Médica Del Hospital General de México*, 85(4). <https://doi.org/10.24875/hgmx.22000021>
- Furuta, T., & Sato, T. (2021). Medical application of particle and heavy ion transport code system PHITS. In *Radiological Physics and Technology* (Vol. 14, Issue 3, pp. 215–225). Springer. <https://doi.org/10.1007/s12194-021-00628-0>
- Gottschalk, B. (2018). *Radiotherapy Proton Interactions in Matter*. <http://arxiv.org/abs/1804.00022>
- Haddock, M. G. (2017). Intraoperative radiation therapy for colon and rectal cancers: A clinical review. In *Radiation Oncology* (Vol. 12, Issue 1). BioMed Central Ltd. <https://doi.org/10.1186/s13014-016-0752-1>
- Hartono, S. W. (2019). *HUBUNGAN ANTARA MEROKOK DENGAN KEJADIAN KANKER KOLOREKTAL RS KEPRESIDENAN RSPAD GATOT SOEBROTO JAKARTA*.
- Hildaimawanti, Ni Putu Rita Jeniyanthi, Triningsih Triningsih, & I Kadek Sukadana. (2023). Analisis Pemeriksaan MRI Pelvis Pada Kasus Kanker Serviks Di Instalasi Radiologi RSUP Persahabatan. *JURNAL RISET RUMPUN ILMU KEDOKTERAN*, 2(2), 215–225. <https://doi.org/10.55606/jurrike.v2i2.2088>
- Hu, M., Jiang, L., Cui, X., Zhang, J., & Yu, J. (2018). Proton beam therapy for cancer in the era of precision medicine. In *Journal of Hematology and Oncology* (Vol. 11, Issue 1). BioMed Central Ltd. <https://doi.org/10.1186/s13045-018-0683-4>
- ICRP 103: *The 2007 Recommendations of the International Commission on Radiological Protection*. (2007). http://www.elsevier.com/wps/find/bookdescription.cws_home/713998/description#description
http://www.elsevier.com/wps/find/bookdescription.cws_home/714371/description#description
- Jia, S. B., Romano, F., Cirrone, G. A. P., Cuttone, G., Hadizadeh, M. H., Mowlavi, A. A., & Raffaele, L. (2015). Designing a range modulator wheel to spread-out the Bragg peak for a passive proton therapy facility. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 806, 101–108. <https://doi.org/10.1016/j.nima.2015.10.006>
- Krstić, D., & Nikezić, D. (2007). Input files with ORNL-mathematical phantoms of the human body for MCNP-4B. *Computer Physics*

Communications, 176(1), 33–37.
<https://doi.org/10.1016/j.cpc.2006.06.016>

Lithuayu, G. (2024). *Optimasi Dosis dan Waktu Iradiasi Berdasarkan Arah Penyinaran untuk Terapi Proton pada Kanker Prostat Menggunakan Program PHITS Versi 3.33*.

Makmun, D., Simadibrata, M., Abdullah, M., Syam, A. F., Shatri, H., Fauzi, A., Renaldi, K., Maulahela, H., Utari, A. P., Pribadi, R. R., Muzellina, V. N., & Nursyirwan, S. A. (2021). Retrospective Study Colorectal cancer patients in a tertiary hospital in Indonesia: Prevalence of the younger population and associated factors. *World Journal of Clinical Cases*, 9(32), 9804–9814.
<https://doi.org/10.12998/wjcc.v9.i32.9804>

Marks, L. B., Yorke, E. D., Jackson, A., Ten Haken, R. K., Constone, L. S., Eisbruch, A., Bentzen, S. M., Nam, J., & Deasy, J. O. (2010). Use of Normal Tissue Complication Probability Models in the Clinic. *International Journal of Radiation Oncology Biology Physics*, 76(3 SUPPL.).
<https://doi.org/10.1016/j.ijrobp.2009.07.1754>

Mcconn, R. J., Gesh, C. J., Pagh, R. T., & Rucker, R. A. (2011). *Radiation Portal Monitor Project Compendium of Material Composition Data for Radiation Transport Modeling*.

Mohan, R., & Grosshans, D. (2017). Proton therapy – Present and future. In *Advanced Drug Delivery Reviews* (Vol. 109, pp. 26–44). Elsevier B.V. <https://doi.org/10.1016/j.addr.2016.11.006>

Mott, J. H. L., & Daniel, J. M. (2021). Interactions of Electromagnetic Radiation and Subatomic Particles with Matter – Part 2. In *Clinical Oncology* (Vol. 33, Issue 7, pp. 455–460). Elsevier Ltd.
<https://doi.org/10.1016/j.clon.2021.02.005>

N. Namba, T. T. and K. A. (2019). New Era of Radiation Therapy to Fight Cancer. *Hokkaido: Hokkaido University*, 2, 5–9.

Newhauser, W. D., & Zhang, R. (2015). The physics of proton therapy. In *Physics in Medicine and Biology* (Vol. 60, Issue 8, pp. R155–R209). Institute of Physics Publishing.
<https://doi.org/10.1088/0031-9155/60/8/R155>

Niemisto, M. G., & Washington, B. S. (2020). *Modeling Eye Lens and its Conversion Coefficients using MCNP6*.

- Nofi Santika, I., Siti Nur Mahmudah, R., Widiatmono, R., Sardjono, Y., Ismail, Z., Sutresna Wijaya, G., Mulyadi Triatmoko, I., & Kasesaz, Y. (2023). Dose analysis of proton beam therapy in hepatocellular carcinoma using PHITS version 3.20. *Journal of Physics: Conference Series*, 2498(1). <https://doi.org/10.1088/1742-6596/2498/1/012027>
- Nugra, W. A. (2024). *Optimasi Arah Penyinaran Berdasarkan Dosis dan Waktu Iradiasi untuk Terapi Proton pada Kanker Rektum Menggunakan Program PHITS Versi 3.33*.
- Ogawa, T., Hirata, Y., Matsuya, Y., Kai, T., Sato, T., Iwamoto, Y., Hashimoto, S., Furuta, T., Abe, S., Matsuda, N., Sekikawa, T., Yao, L., Tsai, P.-E., Ratliff, H. N., Iwase, H., Sakaki, Y., Sugihara, K., Shigyo, N., Sihver, L., & Niita, K. (2024). Overview of PHITS Ver.3.34 with particular focus on track-structure calculation. *EPJ Nuclear Sciences & Technologies*, 10, 13. <https://doi.org/10.1051/epjn/2024012>
- Parzen, J. S., Zheng, W., Li, X., Ding, X., & Kabolizadeh, P. (2021). 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? *Advances in Radiation Oncology*, 6(5). <https://doi.org/10.1016/j.adro.2021.100749>
- Peiris, G. S., Pawiro, S. A., Kasim, M. F., & Sheehy, S. L. (2021). *Failure modes and downtime of radiotherapy linear accelerators and Multi-Leaf Collimators in Indonesia*. <http://arxiv.org/abs/2105.08906>
- Podgorsak, E. B. (2005). *Radiation Oncology Physics: A Handbook for Teachers and Students*.
- Rafaelsen, S. R., Dam, C., Vagn-Hansen, C., Møller, J., Rahr, H. B., Sjöström, M., Lindebjerg, J., Hansen, T. F., & Pedersen, M. R. V. (2022). CT and 3 Tesla MRI in the TN Staging of Colon Cancer: A Prospective, Blind Study. *Current Oncology*, 29(2), 1069–1079. <https://doi.org/10.3390/curroncol29020091>
- Reddy, R. B., Sathiyam, S., & M, G. K. (2016). *Physical characteristics of photon and electron beams from a radiotherapy accelerator*. www.ijmrr.in
- Sato, T., Iwamoto, Y., Hashimoto, S., Ogawa, T., Furuta, T., Abe, S. I., Kai, T., Matsuya, Y., Matsuda, N., Hirata, Y., Sekikawa, T., Yao, L., Tsai, P. E., Ratliff, H. N., Iwase, H., Sakaki, Y., Sugihara, K., Shigyo,

- N., Sihver, L., & Niita, K. (2024). Recent improvements of the particle and heavy ion transport code system–PHITS version 3.33. *Journal of Nuclear Science and Technology*, 61(1), 127–135. <https://doi.org/10.1080/00223131.2023.2275736>
- Sato, T., Niita, K., Matsuda, N., Hashimoto, S., Iwamoto, Y., Furuta, T., Noda, S., Ogawa, T., Iwase, H., Nakashima, H., Fukahori, T., Okumura, K., Kai, T., Chiba, S., & Sihver, L. (2015). Overview of particle and heavy ion transport code system PHITS. *Annals of Nuclear Energy*, 82, 110–115. <https://doi.org/10.1016/j.anucene.2014.08.023>
- Sharon Natalia Runtulalo. (2023). *Laporan Kasus Laporan Kasus Tumor Kolon Asendens Tumor Kolon Asendens*.
- Siegel, R. L., Miller, K. D., Fuchs, H. E., & Jemal, A. (2022). Cancer statistics, 2022. *CA: A Cancer Journal for Clinicians*, 72(1), 7–33. <https://doi.org/10.3322/caac.21708>
- Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA: A Cancer Journal for Clinicians*, 71(3), 209–249. <https://doi.org/10.3322/caac.21660>
- Tian, X., Liu, K., Hou, Y., Cheng, J., & Zhang, J. (2017). The evolution of proton beam therapy: Current and future status (Review). *Molecular and Clinical Oncology*. <https://doi.org/10.3892/mco.2017.1499>
- Tom Roques. (2020). *Radiotherapy dose fractionation Third edition*.
- Wang, L., Hirano, Y., Ishii, T., Kondo, H., Hara, K., Obara, N., & Yamaguchi, S. (2020). Left colon as a novel high-risk factor for postoperative recurrence of stage II colon cancer. *World Journal of Surgical Oncology*, 18(1). <https://doi.org/10.1186/s12957-020-01818-7>
- Yoo, R. N., Cho, H. M., & Kye, B. H. (2021). Management of obstructive colon cancer: Current status, obstacles, and future directions. *World Journal of Gastrointestinal Oncology*, 13(12), 1850–1862. <https://doi.org/10.4251/wjgo.v13.i12.1850>
- Yusra. (2024). Pengembangan Skrining dan Deteksi Dini Kanker Kolorektal Secara Non-Invasif*. *Deteksi Non-Invasif Kanker Kolorektal EJKI*, 12(3). <https://doi.org/10.23886/ejki.12.957.235>

Yusuf, I., Pardamean, B., Baurley, J. W., Budiarto, A., Miskad, U. A., Lusikooy, R. E., Arsyad, A., Irwan, A., Mathew, G., Suriapranata, I., Kusuma, R., Kacamarga, M. F., Cenggoro, T. W., McMahan, C., Joyner, C., & Pardamean, C. I. (2021). Genetic risk factors for colorectal cancer in multiethnic Indonesians. *Scientific Reports*, 11(1). <https://doi.org/10.1038/s41598-021-88805-4>

