

## DAFTAR PUSTAKA

- Abraham, Z.S., Ngunyale, B., Massawe, E.R., Ntunaguzi, D., & Mpondo, B., 2018. Oral and Otolaryngological Complications of Radiotherapy for Head and Neck Cancers among Patients attending Ocean Road Cancer Institute ., *Med. J. Zambia* 45: 32–43.
- Akazawa, N., Kishi, M., Hino, T., Tsuji, R., Tamura, K., Hioka, A., et al., 2022. Higher Body Mass Index in Hospitalized Older Patients Is Related to Higher Muscle Quality. *J. Nutr. Heal. Aging* 26: 495–500. doi:10.1007/s12603-022-1785-9
- Akita, H., Takahashi, H., Asukai, K., Tomokuni, A., Wada, H., Marukawa, S., et al., 2019. The utility of nutritional supportive care with an eicosapentaenoic acid (EPA)-enriched nutrition agent during pre-operative chemoradiotherapy for pancreatic cancer: Prospective randomized control study. *Clin. Nutr. ESPEN* 33: 148–153. doi:10.1016/j.clnesp.2019.06.003
- Aliyah, S., & Setiawati, S.I., 2018. Perbandingan Formula Enteral Rendah Lemak Berbasis Tepung Edamame dengan Formula Komersial Rendah Lemak. *Media Gizi Indones.* 13: 1–11. doi:10.20473/mgi.v13i1.1
- Alkan, Ş.B., Artaç, M., & Rakıcıoğlu, N., 2018. The relationship between nutritional status and handgrip strength in adult cancer patients: a cross-sectional study. *Support. Care Cancer* 26: 2441–2451. doi:10.1007/s00520-018-4082-8
- Allen, M., 2010. A comparison of analytical methods for quantifying denatured whey proteins and their correlation to solubility. *Thesis* 1–99.
- Anggraeni, Y.P., & Yuwono, S.S., 2014. Pengaruh Fermentasi Alami pada Chips Ubi Jalar (*Ipomoea batatas*) terhadap Sifat Fisik Tepung Ubi Jalar Terfermentasi. *Pangan dan Agroindustri* 2: 59–69.
- Ankur Mudgal, A.K.A., & Indira Yadav, S.C., 2019. Role of hypofractionated palliative radiotherapy in patients with stage four head - and - neck squamous cell carcinoma. *J Can Res Ther* 2019;15528-32. 15: 528–532. doi:10.4103/jcrt.JCRT
- Arcidiacono, B., Iritano, S., Nocera, A., Possidente, K., Nevolo, M.T., Ventura, V., et al., 2012. Insulin resistance and cancer risk: An overview of the pathogenetic mechanisms. *Exp. Diabetes Res.* 2012. doi:10.1155/2012/789174
- Arends, Jann, Bachmann, P., Baracos, V., Barthelemy, N., Bertz, H., Bozzetti, F., et al., 2017. ESPEN guidelines on nutrition in cancer patients. *Clin. Nutr.* 36: 11–48. doi:10.1016/j.clnu.2016.07.015
- Arends, J., Baracos, V., Bertz, H., Bozzetti, F., Calder, P.C., Deutz, N.E.P., et al., 2017. ESPEN expert group recommendations for action against cancer-related malnutrition. *Clin. Nutr.* 36: 1187–1196. doi:10.1016/j.clnu.2017.06.017
- Arends, J., Bodoky, G., Bozzetti, F., Fearon, K., Muscaritoli, M., Selga, G., et al., 2006. ESPEN Guidelines on Enteral Nutrition: Non-surgical oncology. *Clin. Nutr.* 25: 245–259. doi:10.1016/j.clnu.2006.01.020
- Argilés, J.M., Busquets, S., & López-Soriano, F.J., 2005. The pivotal role of cytokines in muscle wasting during cancer. *Int. J. Biochem. Cell Biol.* 37: 1609–1619. doi:10.1016/j.biocel.2005.03.007
- Ariyani, I.D., 2017. Gambaran Air Perasan Jeruk Lemon terhadap Pertumbuhan Bakteri *Staphylococcus aureus*. *Thesis*.
- Arnold, C., & Richter, M.P., 1989. The Effect of Oral Nutritional Supplements on Head and Neck Cancer. *Int J Radiat. Oncol. Biol Phys.* 16: 1595–1599.
- Arnott, C.H., Scott, K.A., Moore, R.J., Robinson, S.C., Thompson, R.G., & Balkwill, F.R., 2004. Expression of both TNF- $\alpha$  receptor subtypes is essential for optimal skin tumour development. *Oncogene* 23: 1902–1910. doi:10.1038/sj.onc.1207317
- Arribas, L., Hurtós, L., Taberna, M., Peiró, I., Vilajosana, E., Lozano, A., et al., 2017. Nutritional changes in patients with locally advanced head and neck cancer during treatment. *Oral Oncol.* 71: 67–74. doi:10.1016/j.oraloncology.2017.06.003
- Arrieta, O., Ortega, R.M.M., Villanueva-rodríguez, G., Serna-thomé, M.G., Flores-estrada, D., Diaz-romero, C., et al., 2010. Association of nutritional status and serum albumin levels with development of toxicity in patients with advanced non-small cell lung cancer treated with paclitaxel-cisplatin chemotherapy : a prospective study. *BMC Cancer* 10: 1–7.
- Asadi, K., Ferguson, L.R., Philpott, M., & Karunasinghe, N., 2017. Cancer-preventive Properties of an Anthocyanin-enriched Sweet Potato in the APC MIN Mouse Model . *J. Cancer Prev.* 22: 135–146. doi:10.15430/jcp.2017.22.3.135
- Bagchi, D., Sen, C.K., Bagchi, M., & Atalay, M., 2004. Review: Antiangiogenic, antioxidant, and anticarcinogenic properties of a novel anthocyanin-rich berry extract formula. *Biokhimiya* 69: 95–102.

- Baguley, B., Bolam, K., Wright, O., & Skinner, T., 2017. The Effect of Nutrition Therapy and Exercise on Cancer-Related Fatigue and Quality of Life in Men with Prostate Cancer: A Systematic Review. *Nutrients* 9: 1003. doi:10.3390/nu9091003
- Balasubramaniam, V., Lim, R.Z.M., Leong, C.J.W., Mahendran, H.A., & Ng, C.B., 2022. Effect of protein supplementation on fat-free mass among upper gastrointestinal surgical patients: A review of compliance. *Clin. Nutr. ESPEN* 49: 510–516. doi:10.1016/j.clnesp.2022.02.113
- Baldwin, C., Spiro, A., Ahern, R., & Emery, P.W., 2012. Oral nutritional interventions in malnourished patients with cancer: A systematic review and meta-analysis. *J. Natl. Cancer Inst.* 104: 371–385. doi:10.1093/jnci/djr556
- Baldwin, C., Spiro, A., Mcgough, C., Norman, A.R., Gillbanks, A., Thomas, K., et al., 2011. Simple nutritional intervention in patients with advanced cancers of the gastrointestinal tract, non-small cell lung cancers or mesothelioma and weight loss receiving chemotherapy: a randomised controlled trial 431–440. doi:10.1111/j.1365-277X.2011.01189.x
- Baldwin, C., & Weekes, C.E., 2011. Dietary advice with or without oral nutritional supplements for disease-related malnutrition in adults. *Cochrane Database Syst. Rev.* doi:10.1002/14651858.cd002008.pub4
- Balkwill, F., 2009. Tumour necrosis factor and cancer. *Nat. Rev. Cancer* 9: 361–371. doi:10.1038/nrc2628
- Balkwill, F., & Coussens, L.M., 2004. An inflammatory link. *Nature* 431: 405–406.
- Balkwill, F., & Mantovani, A., 2001. Inflammation and cancer: Back to Virchow? *Lancet* 357: 539–545. doi:10.1016/S0140-6736(00)04046-0
- Bansal, V., & Ochoa, J.B., 2003. Arginine availability, arginase, and the immune response. *Curr Opin Clin Nutr Metab Care* 6: 223–228. doi:10.1097/01.mco.0000058594.27240.12
- Bao, B., Prasad, A.S., Beck, F.W.J., & Godmere, M., 2003. Zinc modulates mRNA levels of cytokines. *Am. J. Physiol. - Endocrinol. Metab.* 285: 1095–1102. doi:10.1152/ajpendo.00545.2002
- Bao, Y.-N., 2019. The problems of nutritional support for head and neck malignant tumor patients undergoing radiotherapy. *Food Ther. Heal. Care* 1: 123–129. doi:10.53388/fthc201911003
- Baracos, V.E., 2015. Skeletal muscle anabolism in patients with advanced cancer. *Lancet Oncol.* 16: 13–14. doi:10.1016/S1470-2045(14)71185-4
- Bauer, J., Capra, S., & Ferguson, M., 2002. Use of the scored Patient-Generated Subjective Global Assessment (PG-SGA) as a nutrition assessment tool in patients with cancer. *Eur. J. Clin. Nutr.* 56: 779–785. doi:10.1038/sj.ejcn.1601412
- Beaulieu, J., Dupont, C., & Lemieux, P., 2006. Whey proteins and peptides: Beneficial effects on immune health. *Therapy* 3: 69–78. doi:10.1586/14750708.3.1.69
- Benítez Brito, N., Suárez Llanos, J.P., Fuentes Ferrer, M., Oliva García, J.G., Delgado Brito, I., Pereyra-García Castro, F., et al., 2016. Relationship between mid-upper arm circumference and body mass index in inpatients. *PLoS One* 11: 1–10. doi:10.1371/journal.pone.0160480
- Bird, J.K., Troesch, B., Warnke, I., & Calder, P.C., 2021. The effect of long chain omega-3 polyunsaturated fatty acids on muscle mass and function in sarcopenia: A scoping systematic review and meta-analysis. *Clin. Nutr. ESPEN* 46: 73–86. doi:10.1016/j.clnesp.2021.10.011
- Bjelakovic, G., Nikolova, D., Gluud, L.L., Simonetti, R.G., & Gluud, C., 2007. Mortality in randomized trials of antioxidant supplements for primary and secondary prevention: Systematic review and meta-analysis. *J. Am. Med. Assoc.* 297: 842–857. doi:10.1001/jama.297.8.842
- Blackwood, H.A., Hall, C.C., Balstad, T.R., Solheim, T.S., Fallon, M., Haraldsdottir, E., et al., 2020. A systematic review examining nutrition support interventions in patients with incurable cancer. *Support. Care Cancer* 28: 1877–1889. doi:10.1007/s00520-019-04999-4
- Bleotu, C., Carmen, M., & Raluca, C., 2013. Investigation of Th1 / Th2 cytokine profiles in patients with laryngo-pharyngeal, HPV-positive cancers. *Eur Arch Otorhinolaryngol* 270: 711–718. doi:10.1007/s00405-012-2067-7
- Blum, D., Omlin, A., Baracos, V.E., Solheim, T.S., Tan, B.H.L., Stone, P., et al., 2011a. Cancer cachexia: A systematic literature review of items and domains associated with involuntary weight loss in cancer. *Crit. Rev. Oncol. Hematol.* 80: 114–144. doi:10.1016/j.critrevonc.2010.10.004
- Blum, D., Omlin, A., Baracos, V.E., Solheim, T.S., Tan, B.H.L., Stone, P., et al., 2011b. Cancer cachexia: A systematic literature review of items and domains associated with involuntary weight loss in cancer. *Crit. Rev. Oncol. / Hematol.* 80: 114–144. doi:10.1016/j.critrevonc.2010.10.004
- Blundell, J.E., Finlayson, G., Gibbons, C., Caudwell, P., & Hopkins, M., 2015. The biology of appetite control: Do resting metabolic rate and fat-free mass drive energy intake? *Physiol. Behav.* doi:10.1016/j.physbeh.2015.05.031
- Blundell, J.E., Gibbons, C., Beaulieu, K., Casanova, N., Duarte, C., Finlayson, G., et al., 2020.

- Physiology & Behavior The drive to eat in homo sapiens : Energy expenditure drives energy intake. *Physiol. Behav.* 219: 1–10.
- Bonatto, S.J.R., Oliveira, H.H.P., Nunes, E.A., & Pequito, D., 2012. Fish Oil Supplementation Improves Neutrophil Function During Cancer Chemotherapy. *Lipids* 47: 383–389. doi:10.1007/s11745-011-3643-0
- Bosaeus, I., Daneryd, P., Svanberg, E., & Lundholm, K., 2001. Dietary intake and resting energy expenditure in relation to weight loss in unselected cancer patients. *Int. J. Cancer* 93: 380–383. doi:10.1002/ijc.1332
- Bossi, P., & Stucchi, E., 2023. Exercise and Nutrition Interventions in Head and Neck Cancer, in: Vermorken, J.B., Budach, V., Leemans, C.R., Machiels, J.-P., Nicolai, P., & O'Sullivan, B. (Eds.), *Critical Issues in Head and Neck Oncology: Key Concepts from the Eighth THNO Meeting*. Springer, pp. 347–354. doi:10.1007/978-3-031-23175-9\_21
- Boucher, E., Plazy, C., Richard, M.L., Suau, A., Mangin, I., Cornet, M., et al., 2023. Inulin prebiotic reinforces host cancer immunosurveillance via  $\gamma\delta$  T cell activation. *Front. Immunol.* 14: 1–12. doi:10.3389/fimmu.2023.1104224
- Bozzetti, F., 2014. Nutritional supplementation in advanced cancer patients. Re: "Influence of a nutritional intervention on dietary intake and quality of life in cancer patients." *Nutrition* 30: 957–958. doi:10.1016/j.nut.2013.12.018
- Bozzetti, F., & Bozzetti, V., 2013. Is the intravenous supplementation of amino acid to cancer patients adequate? A critical appraisal of literature. *Clin. Nutr.* 32: 142–146. doi:10.1016/j.clnu.2012.10.017
- Bozzetti, F., & Cotogni, P., 2020. Nutritional Issues in Head and Neck Cancer Patients. *Healthcare* 8: 1–8.
- BPOM, 2022. Peraturan Badan Pengawas Obat Dan Makanan Nomor 1 Tahun 2022 Tentang Pengawasan Klaim Pada Label Dan Iklan Pangan Olahan, Peraturan BPOM.
- Brailo, V., Boras, V.V., & Rogulj, A., 2017. Oral Side Effects of Head and Neck Irradiation Oral Side Effects of Head and Neck Irradiation, in: Akarslan, Z. (Ed.), *Diagnosis and Management of Head and Neck Cancer*. InTech, London, pp. 111–136. doi:10.5772/intechopen.68961
- Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R.L., Torre, L.A., & Jema, A., 2018. Global Cancer Statistics 2018 : GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA Cancer J Clin* 68: 394–424. doi:10.3322/caac.21492
- Brenner, D.R., Scherer, D., Muir, K., Schildkraut, J., Boffetta, P., Spitz, M.R., et al., 2014. A Review of the Application of Inflammatory Biomarkers in Epidemiologic Cancer Research. *Cancer Epidemiol Biomarkers Prev* 23: 1729–1752. doi:10.1158/1055-9965.EPI-14-0064
- Brown, B., Roehl, K., & Betz, M., 2015. Enteral nutrition formula selection: Current evidence and implications for practice. *Nutr. Clin. Pract.* 30: 72–85. doi:10.1177/0884533614561791
- Bucci, M.K., & Bevan, A., 2005. Advances in Radiation Therapy : Conventional to 3D , to IMRT , to 4D , and Beyond. *CA Cancer J Clin* 55: 117–134.
- Buddington, K.K., Donahoo, J.B., & Buddington, R.K., 2002. Dietary oligofructose and inulin protect mice from enteric and systemic pathogens and tumor inducers. *J. Nutr.* 132: 472–477. doi:10.1093/jn/132.3.472
- Budiman, Wulandari, Z., & Suryati, T., 2009. Suplementasi Tepung Putih Telur untuk Memperbaiki Nilai Nutrisi Snack Ekstrusi Berbahan Grits Jagung. *Media Peternak*. 32: 178–183.
- Bumrungpert, A., Pavadhgul, P., Nunthanawanich, P., Sirikancharod, A., & Adulbhan, A., 2018. Whey protein supplementation improves nutritional status, glutathione levels, and immune function in cancer patients: a randomized, double-blind controlled trial. *J Med Food* 00: 1–5. doi:10.1089/jmf.2017.4080
- Cabrero, A., Laguna, J.C., & Vázquez, M., 2002. Peroxisome Proliferator-Activated Receptors and Inflammation the Control of 243–248.
- Cacicedo, J., Casquero, F., Martinez-Indart, L., del Hoyo, O., de Iturriaga, A.G., Navarro, A., et al., 2014. A prospective analysis of factors that influence weight loss in patients undergoing radiotherapy. *Chin. J. Cancer* 33: 204–210. doi:10.5732/cjc.013.10009
- Calder, P.C., 2013. Omega-3 polyunsaturated fatty acids and inflammatory processes: Nutrition or pharmacology? *Br. J. Clin. Pharmacol.* 75: 645–662. doi:10.1111/j.1365-2125.2012.04374.x
- Calder, P.C., 2003. Immunonutrition. *BMJ* 327: 117–8.
- Cameron, A., 2020. Effect of Temperature-Relative Humidity on the Physicochemical and Functional Properties of Powdered Egg White Protein.
- Cano, N., Fiaccadori, E., Tesinsky, P., Toigo, G., Druml, W., Kuhlmann, M., et al., 2006. ESPEN Guidelines on Enteral Nutrition: Adult Renal Failure. *Clin. Nutr.* 25: 295–310. doi:10.1016/j.clnu.2006.01.023
- Cao, D. xing, Wu, G. hao, Zhang, B., Quan, Y. jun, Wei, J., Jin, H., et al., 2010. Resting energy expenditure and body composition in patients with newly detected cancer. *Clin. Nutr.* 29: 72–

77. doi:10.1016/j.clnu.2009.07.001

Cárdeno, A., Sánchez-Hidalgo, M., & Alarcón-de-la-Lastra, C., 2013. An up-date of olive oil phenols in inflammation and cancer: molecular mechanisms and clinical implications. *Curr. Med. Chem.* 20: 4758–4776. doi:10.2174/09298673113209990159

Carrero, J.J., Johansen, K.L., Lindholm, B., Stenvinkel, P., Cuppari, L., & Avesani, C.M., 2016. Screening for muscle wasting and dysfunction in patients with chronic kidney disease. *Kidney Int.* 90: 53–66. doi:10.1016/j.kint.2016.02.025

Carvalho, T.C., Cruz, B.C.S., Viana, M.S., Martucci, R.B., Saraiva, D.C.A., & Reis, P.F., 2017. Effect of Nutritional Supplementation Enriched with Eicosapentaenoic Acid on Inflammatory Profile of Patients With Oral Cavity Cancer in Antineoplastic Pretreatment: A Controlled and Randomized Clinical Trial. *Nutr. Cancer* 69: 428–435. doi:10.1080/01635581.2017.1274406

Castillo-Martinez, L., Castro-Eguiluz, D., Copca-Mendoza, E.T., Perez-Camargo, D.A., Reyes-Torres, C.A., Avila, E.A.D., et al., 2018. Nutritional assessment tools for the identification of malnutrition and nutritional risk associated with cancer treatment. *Rev. Investig. Clin.* 70: 121–125. doi:10.24875/RIC.18002524

Caudwell, P., Finlayson, G., Gibbons, C., Hopkins, M., King, N., Na, E., et al., 2013. Resting metabolic rate is associated with hunger, self-determined meal size, and daily energy intake and may represent a marker. *Am J Clin Nutr* 97: 7–14. doi:10.3945/ajcn.111.029975

Cederholm, T., Barazzoni, R., Austin, P., Ballmer, P., Biolo, G., Bischoff, S.C., et al., 2017. ESPEN guidelines on definitions and terminology of clinical nutrition. *Clin. Nutr.* 36: 49–64. doi:10.1016/j.clnu.2016.09.004

Çehreli, R., 2018. Molecular nutritional immunology and cancer. *J. Oncol. Sci.* 4: 40–46. doi:10.1016/j.jons.2018.02.002

Cereda, E., Cappello, S., Colombo, S., Klersy, C., Imarisio, I., Turri, A., et al., 2017. Nutritional counseling with or without systematic use of oral nutritional supplements in head and neck cancer patients undergoing radiotherapy. *Radiother. Oncol.* doi:10.1016/j.radonc.2017.10.015

Cereda, E., Ferrari, A., Pedrazzoli, P., Chiellino, S., Filippi, A.R., Stella, G.M., et al., 2019. Whey protein isolate supplementation improves body composition, muscle strength, and treatment tolerance in malnourished advanced cancer patients undergoing chemotherapy. *Cancer Med.* 1–10. doi:10.1002/cam4.2517

Chae, S., Kang, K.M., Kim, H.J., Kang, E., Park, S.Y., Kim, J.H., et al., 2018. Neutrophil – lymphocyte ratio predicts response to chemotherapy in triple-negative breast cancer. *Curr Oncol* 25: 113–119.

Chang, P., Yeh, K., Huang, J., Chou, W., & Hsieh, J.C., 2017. Impact of the pretreatment Glasgow prognostic score on treatment tolerance, toxicities, and survival in patients with advanced head and neck cancer undergoing concurrent chemoradiotherapy. *Head Neck* 1–7. doi:10.1002/hed.24853

Chang, S.H., Liu, C.H., Wu, M.T., & Hla, T., 2005. Regulation of vascular endothelial cell growth factor expression in mouse mammary tumor cells by the EP2 subtype of the prostaglandin E2 receptor. *Prostaglandins Other Lipid Mediat.* 76: 48–58. doi:10.1016/j.prostaglandins.2004.12.001

Chauhan, N.S., Samuel, S.R., Meenar, N., Saxena, P.U.P., & Keogh, J.W.L., 2020. Sarcopenia in male patients with head and neck cancer receiving chemoradiotherapy: A longitudinal pilot study. *PeerJ* 2020: 1–12. doi:10.7717/peerj.8617

Chen, D.S., & Mellman, I., 2013. Review Oncology Meets Immunology: The Cancer-Immunity Cycle. *Immunity* 39: 1–10. doi:10.1016/j.immuni.2013.07.012

Chen, H.-L., 2018. Supplementation of Isomalto-oligosaccharide Reduced Colon Cancer-related Bacteria Enzymes and Fecal Toxicity in Nursing-home Residents. *Adv. Biol. Sci. Res.* 6: 177–181. doi:10.2991/bst-17.2018.26

Chen, M.F., Chen, Y.Y., Chen, W.C., & Hsieh, C.C., 2023. The relationship of nutritional status with anticancer immunity and its prognostic value for head and neck cancer. *Mol. Carcinog.* 62: 1388–1398. doi:10.1002/mc.23584

Chen, X.Y., Zhou, J., Luo, L.P., Han, B., Li, F., Chen, J.Y., et al., 2015. Black rice anthocyanins suppress metastasis of breast cancer cells by targeting RAS/RAF/MAPK pathway. *Biomed Res. Int.* 2015: 1–11. doi:10.1155/2015/414250

Chintyadewi, A.A., Marsono, Y., & Triwitono, P., 2021. Pengaruh Penambahan Fibercreme® terhadap Karakteristik Fisik dan Sensoris serta Kadar Serat Pangan Beras Pra Tanak. *agriTECH* 41: 386. doi:10.22146/agritech.42962

Chitapanarux, I., Pisprasert, V., Tharavichitkul, E., Jakrabhandu, S., Klunklin, P., Onchan, W., et al., 2016. Randomized study of nutritional status and treatment toxicities of oral arginine, glutamine, and Omega-3 fatty acids during concurrent chemoradiotherapy for head and neck cancer patients. *Funct. Foods Heal. Dis.* 6: 121. doi:10.31989/ffhd.v6i3.230

- Chitapanarux, N., Saengoa, P., Bangsinthu, S., Tapeng, J., & Tongdeepan, W., 2017. Cross-sectional study of body composition in cancer patients. *J. Thai Assoc. Radiat. Oncol.* 23: 50–55.
- Cho, E., & Park, Y., 2016. Association between serum fatty acid composition and innate immune markers in healthy adults. *Nutr. Res. Pract.* 10: 182–187. doi:10.4162/hrp.2016.10.2.182
- Cho, Y., Kim, J.W., Yoon, H.I., Lee, C.G., Keum, K.C., & Lee, I.J., 2018. The prognostic significance of neutrophil-to-lymphocyte ratio in head and neck cancer patients treated with radiotherapy. *J. Clin. Med.* 7. doi:10.3390/jcm7120512
- Choi, N., Kim, J.H., Chie, E.K., Gim, J., & Kang, H.C., 2019. A meta-analysis of the impact of neutrophil-to-lymphocyte ratio on treatment outcomes after radiotherapy for solid tumors. *Medicine (Baltimore)*. 98: 1–8. doi:10.1097/MD.00000000000015369
- Ciernikova, S., Mego, M., & Chovanec, M., 2021. Exploring the Potential Role of the Gut Microbiome in Cardiovascular Toxicity. *Cancers (Basel)*. 13: 1–25.
- Citak, E., Tulek, Z., & Uzel, O., 2019. Nutritional status in patients with head and neck cancer undergoing radiotherapy: a longitudinal study. *Support. Care Cancer* 27: 239–247. doi:10.1007/s00520-018-4319-6
- Coa, K.I., Epstein, J.B., Ettinger, D., Jatoi, A., McManus, K., Platek, M.E., et al., 2015. The impact of cancer treatment on the diets and food preferences of patients receiving outpatient treatment. *Nutr. Cancer* 67: 339–353. doi:10.1080/01635581.2015.990577
- Colomer, Ramón, Moreno-Nogueira, J.M., García-Luna, P.P., García-Peris, P., García-de-Lorenzo, A., Zarazaga, A., et al., 2007. n-3 fatty acids, cancer and cachexia: A systematic review of the literature. *Br. J. Nutr.* 97: 823–831. doi:10.1017/S000711450765795X
- Colomer, Ramon, Moreno-Nogueira, J.M., Garcia-Luna, P.P., Garcia-Peris, P., Garcia-de-Lorenzo, A., Zarazaga, A., et al., 2007. Systematic Review n -3 Fatty acids, cancer and cachexia: a systematic review of the literature. *Br. J. Nutr.* 97: 823–831. doi:10.1017/S000711450765795X
- Colotta, F., Allavena, P., Sica, A., Garlanda, C., & Mantovani, A., 2009. Cancer-related inflammation, the seventh hallmark of cancer: links to genetic instability. *Carcinogenesis* 30: 1073–1081. doi:10.1093/carcin/bgp127
- Cordeiro, L. de A.F., Silva, T.H., de Oliveira, L.C., & Neto, J.F.N., 2020. Systemic Inflammation and Nutritional Status in Patients on Palliative Cancer Care: A Systematic Review of Observational Studies. *Am. J. Hosp. Palliat. Med.* 37: 565–571. doi:10.1177/1049909119886833
- Cosway, B., Easby, M., Covington, S., Bowe, I., & Paleri, V., 2015. Hand-grip strength does not correlate with treatment-related weight loss in patients with head and neck cancer. *J. Laryngol. Otol.* 129: 706–709. doi:10.1017/S0022215115001486
- Cunha, M.S., Wiegert, E.V.M., Calixto-Lima, L., & Oliveira, L.C., 2018. Relationship of nutritional status and inflammation with survival in patients with advanced cancer in palliative care. *Nutrition* 51–52: 98–103. doi:10.1016/j.nut.2017.12.004
- Curtis, P.J., Kroon, P.A., Hollands, W.J., Walls, R., Jenkins, G., Kay, C.D., et al., 2009. Cardiovascular Disease Risk Biomarkers and Liver and Kidney Function Are Not Altered in Postmenopausal Women after Ingesting an Elderberry Extract Rich in. *J. Nutr* 139: 2266–2271. doi:10.3945/jn.109.113126
- Cushen, S.J., Power, D.G., & Ryan, A.M., 2015. Nutrition assessment in oncology. *Top. Clin. Nutr.* 30: 103–119. doi:10.1097/TIN.0000000000000023
- Dahlan, M.S., 2013. Besar Sampel dan Cara Pengambilan Sampel dalam Penelitian Kedokteran dan Kesehatan, 3rd ed. Penerbit Salemba Raya, Jakarta.
- Daniela Ticoalu, G., Yuniata, & Mahar Maligan, J., 2016. Pemanfaatan Ubi Ungu (Ipomoea batatas) sebagai Minuman Berantosianin dengan Proses Hidrolisis Enzimatis The Utilization of Purple Sweet Potato (Ipomoea batatas) as an Anthocyanin Contained Beverage Using Enzymatic Hydrolysis Process. *J. Pangan dan Agroindustri* 4: 46–55.
- de Aguiar Pastore Silva, J., Emilia de Souza Fabre, M., & Waitzberg, D.L., 2015. Omega-3 supplements for patients in chemotherapy and/or radiotherapy: A systematic review. *Clin. Nutr.* 34: 359–366. doi:10.1016/j.clnu.2014.11.005
- de las Peñas, R., Majem, M., Perez-Altozano, J., Virizuela, J.A., Cancer, E., Diz, P., et al., 2019. SEOM clinical guidelines on nutrition in cancer patients (2018). *Clin. Transl. Oncol.* 21: 87–93. doi:10.1007/s12094-018-02009-3
- De Luis, D.A., Izaola, O., Aller, R., Cuellar, L., & Terroba, M.C., 2005. A randomized clinical trial with oral immunonutrition (ω3-enhanced formula vs. arginine-enhanced formula) in ambulatory head and neck cancer patients. *Ann. Nutr. Metab.* 49: 95–99. doi:10.1159/000084742
- Della Valle, S., Colatruglio, S., La Vela, V., Tagliabue, E., Mariani, L., & Gavazzi, C., 2018. Nutritional intervention in head and neck cancer patients during chemo-radiotherapy. *Nutrition* 51–52: 95–97. doi:10.1016/j.nut.2017.12.012
- DeNardo, D.G., Barreto, J.B., Andreu, P., Vasquez, L., Tawfik, D., Kolhatkar, N., et al., 2009. CD4 +

- T Cells Regulate Pulmonary Metastasis of Mammary Carcinomas by Enhancing Protumor Properties of Macrophages. *Cancer Cell* 16: 91–102. doi:10.1016/j.ccr.2009.06.018
- Deng, L. hua, Chi, K., Zong, Y., Li, Y., Chen, M. gui, & Chen, P., 2023. Malnutrition in patients with head and neck cancer undergoing radiotherapy: A cross-sectional study. *Eur. J. Oncol. Nurs.* 66: 5–9. doi:10.1016/j.ejon.2023.102387
- Deutz, N.E.P., Safar, A., Schutzler, S., Memelink, R., Ferrando, A., Spencer, H., et al., 2011. Muscle protein synthesis in cancer patients can be stimulated with a specially formulated medical food. *Clin. Nutr.* 30: 759–768. doi:10.1016/j.clnu.2011.05.008
- Dewey, A., Baughan, C., Tp, D., Higgins, B., & Johnson, I., 2017. Eicosapentaenoic acid ( EPA , an omega-3 fatty acid from fish oils ) for the treatment of cancer cachexia ( Review ). doi:10.1002/14651858.CD004597.pub2.[www.cochranelibrary.com](http://www.cochranelibrary.com)
- Dhananjaya, J.R., Veena, H.C., Mamatha, B.S., & Sudarshan, C.R., 2017. Comparative study of body mass index, hand grip strength, and hand grip endurance in healthy individuals. *Natl. J. Physiol. Pharmacy, Pharmacol.* 7: 594–598.
- Diaconeasa, Z., Ayvaz, H., Rugină, D., Leopold, L., Stănilă, A., Socaciu, C., et al., 2017. Melanoma inhibition by anthocyanins is associated with the reduction of oxidative stress biomarkers and changes in mitochondrial membrane potential. *Plant Foods Hum. Nutr.* 72: 404–410. doi:10.1007/s11130-017-0638-x
- Dijkstra, P.U., Kalk, W.W.I., & Roodenburg, J.L.N., 2004. Trismus in head and neck oncology : a systematic review. *Oral Oncol.* 40: 879–889. doi:10.1016/j.oraloncology.2004.04.003
- Dillon, E.L., Basra, G., Horstman, A.M., Casperson, S.L., Randolph, K.M., Durham, W.J., et al., 2012. Cancer cachexia and anabolic interventions: A case report. *J. Cachexia. Sarcopenia Muscle* 3: 253–263. doi:10.1007/s13539-012-0066-6
- Don, B.R., & Kaysen, G., 2004. Serum albumin: Relationship to inflammation and nutrition. *Semin. Dial.* 17: 432–437. doi:10.1111/j.0894-0959.2004.17603.x
- Du, J., Liu, J., Zhang, X., Chen, X., Yu, R., Gu, D., et al., 2018. Pre - treatment neutrophil - to - lymphocyte ratio predicts survival in patients with laryngeal cancer. *Oncol. Lett.* 15: 1664–1672. doi:10.3892/ol.2017.7501
- Dunn, G.P., Koebel, C.M., & Schreiber, R.D., 2006. Interferons, immunity and cancer immunoediting. *Nat. Rev. Immunol.* 6: 836–848. doi:10.1038/nri1961
- Elia, M., Normand, C., Laviano, A., & Norman, K., 2016a. A systematic review of the cost and cost effectiveness of using standard oral nutritional supplements in community and care home settings. *Clin. Nutr.* 35: 125–137. doi:10.1016/j.clnu.2015.07.012
- Elia, M., Normand, C., Norman, K., & Laviano, A., 2016b. A systematic review of the cost and cost effectiveness of using standard oral nutritional supplements in the hospital setting. *Clin. Nutr.* 35: 370–380. doi:10.1016/j.clnu.2015.05.010
- Elia, M., Van Bokhorst-De Van Der Schueren, M.A.E., Garvey, J., Goedhart, A., Lundholm, K., Nitenberg, G., et al., 2006. Enteral (oral or tube administration) nutritional support and eicosapentaenoic acid in patients with cancer: A systematic review. *Int. J. Oncol.* 28: 5–23. doi:10.3892/ijo.28.1.5
- Enriquez-Fernández, B.E., Nejatnamini, S., Campbell, S.M., Mazurak, V.C., & Wismer, W. V., 2019. Sensory preferences of supplemented food products among cancer patients: a systematic review. *Support. Care Cancer* 27: 333–349. doi:10.1007/s00520-018-4458-9
- Escobar Álvarez, Y., de las Peñas Bataller, R., Perez Altozano, J., Ros Martínez, S., Sabino Álvarez, A., Blasco Cordellat, A., et al., 2021. SEOM clinical guidelines for anaemia treatment in cancer patients (2020). *Clin. Transl. Oncol.* 23: 931–939. doi:10.1007/s12094-021-02580-2
- Escrib, E., Moral, R., Grau, L., Costa, I., & Solanas, M., 2011. Modulatory effects and molecular mechanisms of olive oil and other dietary lipids in breast cancer. *Curr. Pharm. Des.* 17: 813–830.
- Esquivel-Chirino, C., Bolaños-Carrillo, M.A., Carmona-Ruiz, D., López-Macay, A., Hernández-Sánchez, F., 6, D.M.-S., et al., 2023. The Protective Role of Cranberries and Blueberries in Oral Cancer. *J. Ir. Dent. Assoc.* 12: 1–23.
- Fabiani, R., 2016. Anti-cancer properties of olive oil secoiridoid phenols: A systematic review of: In vivo studies. *Food Funct.* 7: 4145–4159. doi:10.1039/c6fo00958a
- Faidah, F.H., Moviana, Y., Isdiany, N., Surmita, & Hartini, P.W., 2019. Formulasi makanan enteral berbasis tepung tempe sebagai alternatif makanan enteral tinggi protein. *J. Ris. Kesehatan Poltekkes Kemenkes Bandung* 11: 67–74.
- Fearon, K., Strasser, F., Anker, S.D., Bosaeus, I., Bruera, E., Fainsinger, R.L., et al., 2011. Definition and classification of cancer cachexia : an international consensus. *Lancet Oncol.* 12: 489–495. doi:10.1016/S1470-2045(10)70218-7
- Feijó, P.M., Rodrigues, V.D., Viana, M.S., dos Santos, M.P., Abdelhay, E., Viola, J.P., et al., 2018. Impact of omega-3 supplementation on the nutritional status, immune, and inflammatory

- profiles of gastric cancer patients: A randomized controlled trial. *Nutrition* 61: 125–131. doi:10.1016/j.nut.2018.11.014
- Ferencik, M., & Ebringer, L., 2003. The modulatory role of selenium and zinc on the immune system. *Folia Microbiol* 48: 417–426.
- Ferguson, L.R., 2001. Role of plant polyphenols in genomic stability. *Mutat. Res. - Fundam. Mol. Mech. Mutagen.* 475: 89–111. doi:10.1016/S0027-5107(01)00073-2
- Ferigollo, A., Bazzan, L.S.T., Ceni, G.C., & Bohrer, C.T., 2018. Prevalence of malnutrition and factors associated with the nutritional status of oncological patients. *Nutr. Clin. y Diet. Hosp.* 38: 137–142. doi:10.12873/384ferigollo
- Ferreira, I.B., Santos, N., Philbert, P., & Canto, L., 2020. Oral Nutritional Supplementation Affects the Dietary Intake and Body Weight of Head and Neck Cancer Patients during (Chemo) Radiotherapy. *Nutrients* 12: 1–20.
- Ferrie, S., Daniells, S., Gagnon, S., Hamlyn, J., Jukkola, K., Riley, N., et al., 2018. Enteral nutrition manual for adults in health care facilities, Dietitian Association Australia, Nutrition Support Interest Group.
- Findlay, M., White, K., Stapleton, N., & Bauer, J., 2020. Is sarcopenia a predictor of prognosis for patients undergoing radiotherapy for head and neck cancer? A meta-analysis. *Clin. Nutr.* doi:10.1016/j.clnu.2020.09.017
- Ford, K.L., Arends, J., Atherton, P.J., Gonçalves, T.J.M., Laviano, A., Lobo, D.N., et al., 2022. The importance of protein sources to support muscle anabolism in cancer: An expert group opinion. *Clin. Nutr.* 41: 192–201. doi:10.1016/j.clnu.2021.11.032
- Franca, S.C., Paiva, S.A.R. de, Borgato, M.H., Fontes, C.M.B., Simonetti, J.P., Lima, S.A.M., et al., 2017. Homemade diet versus diet industrialized for patients using alternative feeding tube at home - An integrative review. *Nutr Hosp.* 34: 1281–1287.
- Freitas, R.D.S., & Campos, M.M., 2019. Protective effects of omega-3 fatty acids in cancer-related complications. *Nutrients* 11: 1–23.
- Fridlender, Z.G., Sun, J., Kim, S., Kapoor, V., Cheng, G., Worthen, G.S., et al., 2010. Polarization of Tumor-Associated Neutrophil (TAN) Phenotype by TGF- $\beta$ : “N1” versus “N2” TAN. *Cancer Cell* 16: 183–194. doi:10.1016/j.ccr.2009.06.017.Polarization
- Fu, K.K., Pajak, T.F., Trotti, A., Jones, C.U., Spencer, S.A., Phillips, T.L., et al., 2000. A Radiation Therapy Oncology Group (RTOG) phase III randomized study to compare hyperfractionation and two variants of accelerated fractionation to standard fractionation radiotherapy for head and neck squamous cell carcinomas: first report of RTOG 9003. *Int. J. Radiat. Oncol. Biol. Phys.* 48: 7–16.
- Galdiero, M.R., Varricchi, G., Loffredo, S., Mantovani, A., & Marone, G., 2018. Roles of neutrophils in cancer growth and progression. *J. Leukoc. Biol.* 103: 457–464. doi:10.1002/JLB.3MR0717-292R
- Gallimore, A.M., & Simon, A.K., 2008. Positive and negative influences of regulatory T cells on tumour immunity. *Oncogene* 27: 5886–5893. doi:10.1038/onc.2008.269
- Gawiński, C., Holdakowska, A., & Wyrwicz, L., 2022. Correlation between Lymphocyte-to-Monocyte Ratio (LMR), Neutrophil-to-Lymphocyte Ratio (NLR), Platelet-to-Lymphocyte Ratio (PLR) and Extramural Vascular Invasion (EMVI) in Locally Advanced Rectal Cancer. *Curr. Oncol.* 30: 545–558. doi:10.3390/curroncol30010043
- Ginting, E., Utomo, J.S., & Yulifianti, R., 2015. Potensi Ubijalar Ungu sebagai Pangan Fungsional. *Iptek Tanam. Pangan* 6: 116–138.
- Ginting, E., Utomo, J.S., & Yulifianti, R., 2011. Potensi Ubijalar Ungu sebagai Pangan Fungsional. *Iptek Tanam. Pangan* 6: 116–138.
- Gojda, J., & Cahova, M., 2021. Gut microbiota as the link between elevated bcaa serum levels and insulin resistance. *Biomolecules* 11: 1–16. doi:10.3390/biom11101414
- Gomes, M.T.M.S., & Pelegrine, D.H.G., 2012. Solubility of egg white proteins: Effect of pH and temperature. *Int. J. Food Eng.* 8: 8–15. doi:10.1515/1556-3758.2847
- Gonzalez, H., Hagerling, C., & Werb, Z., 2018. Roles of the immune system in cancer: from tumor initiation to metastatic progression. *Genes Dev.* 1267–1284. doi:10.1101/gad.314617.118.tissue
- Gorenc, M., & Kozjek, N.R., 2015. Malnutrition and cachexia in patients with head and neck cancer treated with (chemo) radiotherapy. *Rep. Pr. Oncol. Radiother* 1–10. doi:10.1016/j.rpor.2015.03.001
- Gorzynik-Debicka, M., Przychodzen, P., Cappello, F., Kuban-Jankowska, A., Gammazza, A.M., Knap, N., et al., 2018. Potential health benefits of olive oil and plant polyphenols. *Int. J. Mol. Sci.* 19: 1–13. doi:10.3390/ijms19030686
- Grecian, R., Whyte, M.K.B., & Walmsley, S.R., 2018. The role of neutrophils in cancer. *Br. Med. Bull.* 128: 5–14. doi:10.1093/bmb/ldy029

- Grimble, R.F., 2005. Immunonutrition. *Curr Opin Gastroenterol* 21: 216–222.
- Grimble, R.F., 2001. Nutritional modulation of immune function. *Proc. Nutr. Soc.* 60: 389–397. doi:10.1079/PNS2001102
- Grimm, H., Mayer, K., Mayser, P., & Eigenbrodt, E., 2002. Regulatory potential of n -3 fatty acids in immunological and inflammatory processes. *Br. J. Nutr.* 87: S59–S67. doi:10.1079/bjn2001457
- Grivennikov, S.I., Greten, F.R., & Karin, M., 2010. Immunity, Inflammation, and Cancer. *Cell* 140: 883–899. doi:10.1016/j.cell.2010.01.025
- Guinan, E.M., Connolly, E.M., Kennedy, M.J., & Hussey, J., 2013. The presentation of metabolic dysfunction and the relationship with energy output in breast cancer survivors: a cross-sectional study. *Nutr. J.* 12: 99. doi:10.1186/1475-2891-12-99
- Gupta, D., & Lis, C.G., 2010. Pretreatment serum albumin as a predictor of cancer survival: A systematic review of the epidemiological literature. *Nutr. J.* 9: 1–16. doi:10.1186/1475-2891-9-69
- Guren, M.G., Tobiassen, L.B., Trygg, K.U., Drevon, C.A., & Dueland, S., 2006. Dietary intake and nutritional indicators are transiently compromised during radiotherapy for rectal cancer. *Eur. J. Clin. Nutr.* 60: 113–119. doi:10.1038/sj.ejcn.1602274
- Guthrie, G.J.K., Charles, K.A., Roxburgh, C.S.D., Horgan, P.G., McMillan, D.C., & Clarke, S.J., 2013. The systemic inflammation-based neutrophil-lymphocyte ratio: Experience in patients with cancer. *Crit. Rev. Oncol. Hematol.* 88: 218–230. doi:10.1016/j.critrevonc.2013.03.010
- Gutiérrez, S., Svahn, S.L., & Johansson, M.E., 2019. Effects of omega-3 fatty acids on immune cells. *Int. J. Mol. Sci.* 20. doi:10.3390/ijms20205028
- Ha, E., & Zemmel, M.B., 2003. Functional properties of whey, whey components, and essential amino acids: mechanisms underlying health benefits for active people (Review). *J. Nutr. Biochem.* 14: 251–258. doi:10.1016/S0955-2863(03)00030-5
- Hanafiah, K.A., 2012. Rancangan Percobaan: Teori dan Aplikasi., 3rd ed. PT Rajagrafindo Persada, Depok.
- Handayani, N.A., Santosa, H., Profegama, B., & Yuna, A., 2014. Fortifikasi Inorganik Zink Pada Tepung Ubi Jalar Ungu Sebagai Bahan Baku Bubur Bayi Instan. *Reaktor* 15: 111–116. doi:10.14710/reaktor.15.2.111-116
- Harada, K., Kano, M., Takayanagi, T., Yamakawa, O., & Ishikawa, F., 2004. Absorption of acylated anthocyanins in rats and humans after ingesting an extract of Ipomoea batatas purple sweet potato tuber. *Biosci. Biotechnol. Biochem.* 68: 1500–1507. doi:10.1271/bbb.68.1500
- Harrigan, M., Cartmel, B., Lofffield, E., Sanft, T., Chagpar, A.B., Zhou, Y., et al., 2016. Randomized trial comparing telephone versus in-person weight loss counseling on body composition and circulating biomarkers in women treated for breast cancer: The lifestyle, exercise, and nutrition (LEAN) study. *J. Clin. Oncol.* 34: 669–676. doi:10.1200/JCO.2015.61.6375
- Harrington, K.J., Hak, C.M.L.C.W., Rullan, A., & Patin, E., 2023. DNA Repair Mechanisms as a New Target in Head and Neck Cancer, in: Vermorken, J.B., Budach, V., Leemans, C.R., Machiels, J.-P., Nicolai, P., & O'Sullivan, B. (Eds.), *Critical Issues in Head and Neck Oncology*. Springer, pp. 23–36. doi:10.1007/978-3-319-98854-2
- Haryanti, P., Setyawati, R., & Wicaksono, R., 2014. Pengaruh Suhu dan Lama Pemanasan Suspensi Pati serta Konsentrasi Butanol terhadap Karakteristik Fisikokimia Pati Tinggi Amilosa dari Tapioka. *Agrotech* 34: 308–315.
- Hashim, Y.Z.H.Y., Gill, C.I.R., McGlynn, H., & Rowland, I.R., 2005. Components of olive oil and chemoprevention of Colorectal Cancer. *Nutr. Rev.* 63: 374–386. doi:10.1301/nr.2005.nov.374-386
- Hathaway, B., Landsittel, D.P., Gooding, W., Whiteside, T.L., Grandis, J.R., Siegfried, J.M., et al., 2005. Multiplexed Analysis of Serum Cytokines as Biomarkers in Squamous Cell Carcinoma of the Head and Neck Patients. *Laryngoscope* 115: 522–527. doi:10.1097/01.mlg.0000157850.16649.b8
- Haykal, T., Samji, V., Zayed, Y., Gakhal, I., Dhillon, H., Kheiri, B., et al., 2019. The role of vitamin D supplementation for primary prevention of cancer: meta-analysis of randomized controlled trials. *J. Community Hosp. Intern. Med. Perspect.* 9: 480–488. doi:10.1080/20009666.2019.1701839
- Holt, D.M., Ma, X., Kundu, N., Collin, P.D., & Fulton, A.M., 2012. Modulation of host natural killer cell functions in breast cancer via prostaglandin E 2 receptors EP 2 and EP 4. *J. Immunother.* 35: 179–188. doi:10.1097/CJI.0b013e318247a5e9
- Horiot, J., Bontemps, P., Bogaert, W., Van Den, Furd, R. Le, Weijngaerte, D., Van Den, Bollaf, M., et al., 1997. Accelerated fractionation (AF) compared to conventional fractionation (CF) improves loco-regional control in the radiotherapy of advanced head and neck cancers : results of the EORTC 22851 randomized trial. *Radiother. Oncol.* 44: 111–121.
- Hovan, A.J., Williams, P.M., Stevenson-moore, P., & Wahlin, Y.B., 2010. A systematic review of

- dysgeusia induced by cancer therapies. *Support Care Cancer* 18: 1081–1087. doi:10.1007/s00520-010-0902-1
- Hubbard, G.P., Elia, M., Holdoway, A., & Stratton, R.J., 2012. A systematic review of compliance to oral nutritional supplements. *Clin. Nutr.* 31: 293–312. doi:10.1016/j.clnu.2011.11.020
- Huerta-Yépez, S., Tirado-Rodriguez, A.B., & Hankinson, O., 2016. Role of diets rich in omega-3 and omega-6 in the development of cancer. *Boletín Médico Del Hosp. Infant. México (English Ed.* 73: 446–456. doi:10.1016/j.bmhime.2017.11.043
- Husnah, S., 2010. Pembuatan Tepung Ubi Jalar Ungu (*Ipomoea batatas* varietas Ayamurasaki) dan Aplikasinya dalam Pembuatan Roti Tawar.
- Hussain, S.P., Hofseth, L.J., & Harris, C.C., 2003. Radical causes of cancer. *Nat. Rev. Cancer* 3: 276–285. doi:10.1038/nrc1046
- Ijnu, T.P., De Lellis, L.F., Shanmugarama, S., Pérez-Gregorio, R., Sasikumar, P., Ullah, H., et al., 2023. Anthocyanins as Immunomodulatory Dietary Supplements: A Nutraceutical Perspective and Micro-/Nano-Strategies for Enhanced Bioavailability. *Nutrients* 15. doi:10.3390/nu15194152
- Jablonska, J., Leschner, S., Westphal, K., Lienenklaus, S., & Weiss, S., 2010. Neutrophils responsive to endogenous IFN- $\beta$  regulate tumor angiogenesis and growth in a mouse tumor model. *J Clin Invest* 120: 1151–1164. doi:10.1172/JCI37223.crine
- Jackson, W., Alexander, N., Schipper, M., Fig, L., Feng, F., & Jolly, S., 2014. Characterization of changes in total body composition for patients with head and neck cancer undergoing chemoradiotherapy using dual-energy X-ray absorptiometry. *Head Neck* 36: 1356–1362. doi:10.1002/HED
- Jager-Wittenaar, H., Dijkstra, P.U., Vissink, A., Langendijk, J.A., Laan, B.F.A.M. van der, Pruim, J., et al., 2011. Changes in Nutritional Status and Dietary Intake during and after Head and Neck Cancer Treatment. *Head Neck* 33: 863–870. doi:10.1002/HED
- Jager-Wittenaar, H., & Ottery, F.D., 2017. Assessing nutritional status in cancer: Role of the Patient-Generated Subjective Global Assessment. *Curr. Opin. Clin. Nutr. Metab. Care* 20: 322–329. doi:10.1097/MCO.0000000000000389
- Jameus, A., Kennedy, A.E., & Thome, C., 2021. Hematological Changes Following Low Dose Radiation Therapy and Comparison to Current Standard of Care Cancer Treatments. *Dose-Response An Int. J.* 19: 1–19. doi:10.1177/15593258211056196
- Jankowski, M., Qelaj, A., Kłęk, S., Murawa, D., Nartowicz, M., Patela, Z., et al., 2021. The role of comprehensive nutritional care in cancer patients. *Nowotw. J Oncol* 71: 158–161. doi:10.5603/NJO.a2021.0016
- Jansen, A.K., Generoso, S. de V., Guedes, E.G., Rodrigues, A.M., Miranda, L.A.V. de O., & Henriques, G.S., 2017. Development of enteral homemade diets for elderly persons receiving home care and analysis of macro and micronutrient composition. *Rev. Bras. Geriatr. Gerontol., Rio Janeiro* 20: 387–397.
- Jensen, S.B., Pedersen, A.M.L., Vissink, A., Andersen, E., Brown, C.G., Davies, A.N., et al., 2010. A systematic review of salivary gland hypofunction and xerostomia induced by cancer therapies : management strategies and economic impact. *Support Care Cancer* 1061–1079. doi:10.1007/s00520-010-0837-6
- Jiang, W., Ding, H., Li, W., Ling, Y., Hu, C., Shen, C., et al., 2019. Benefits of Oral Nutritional Supplements in Patients with Locally Advanced Nasopharyngeal Cancer during Concurrent Chemoradiotherapy : An Exploratory Prospective Randomized Trial Benefits of Oral Nutritional Supplements in Patients with Locally Advanced N. *Nutr. Cancer* 0: 1–9. doi:10.1080/01635581.2018.1557222
- Jones, L.W., & Alfano, C.M., 2013. Exercise-oncology research: Past, present, and future. *Acta Oncol. (Madr)*. 52: 195–215. doi:10.3109/0284186X.2012.742564
- Joyce, J.A., & Pollard, J.W., 2009. Microenvironmental regulation of metastasis. *Nat. Rev. Cancer* 9: 239–252. doi:10.1038/nrc2618
- Jung, E.H., Hiratsuka, Y., Suh, S., Won, S., Choi, S., Kang, B., et al., 2022. Association between mid-upper arm circumference and functional status in patients with advanced cancer. *Clin. Nutr. Open Sci.* 45: 72–79. doi:10.1016/j.nutos.2022.08.002
- Kailasapathy, K., 2009. Encapsulation technologies for functional foods and nutraceutical product development. *CAB Rev. Perspect. Agric. Vet. Sci. Nutr. Nat. Resour.* 4. doi:10.1079/PAVSNNR20094033
- Kaito, S., Kanemasa, Y., Sasaki, Y., & Okuya, T., 2018. A new prognostic score comprising lactate dehydrogenase , albumin and neutrophil to lymphocyte ratio to predict sensitivity to first - line chemotherapy in patients with peripheral T - cell lymphomas. *Int. J. Hematol.* 107: 451–459. doi:10.1007/s12185-017-2362-6
- Kalma, 2018. Studi Kadar C-Reactive Protein (CRP) pada Penderita Diabetes Melitus Tipe 2. *J.*

*Media Anal. Kesehat.* 1: 62–68.

- Karin, M., 2006. Nuclear factor- $\kappa$ B in cancer development and progression. *Nature* 441: 431–436. doi:10.1038/nature04870
- Karlsen, A., Retterstøl, L., Laake, P., Paur, I., Kjølsvrud-bøhn, S., & Sandvik, L., 2007. Anthocyanins Inhibit Nuclear Factor- $\kappa$ B Activation in Monocytes and Reduce Plasma Concentrations of Pro-Inflammatory Mediators in Healthy Adults 1 – 3. *J. Nutr.* 137: 1951–1954. doi:10.1093/jn/137.8.1951
- Kartika, A., Kurniawan, A., & Kresna, A., 2023. Analysis of the Temperature Effect on the Liquids Viscosity. *J. Penelit. dan Pembelajaran Fis. Indones.* 5. doi:10.29303/jppfi.v5i1.214
- Kaźmierczak-siedlecka, K., Dąca, A., Folwarski, M., Makarewicz, W., & Lebieczińska, A., 2020. Immunonutritional support as an important part of multidisciplinary anti-cancer therapy. *Centr Eur J Immunol* 45: 454–460.
- Kelvianto, A., Witjaksono, F., & Sekarutami, S.M., 2019. Protein intake, prognostic nutritional index and quality of life in head and neck cancer patients undergoing radiotherapy. *Indones. Biomed. J.* 11: 70–77. doi:10.18585/inabj.v11i1.570
- Kementerian Kesehatan Republik Indonesia, 2018. Hasil utama riskesdas 2018, Riset Kesehatan Dasar. Jakarta, Indonesia.
- Kemp, S.E., Hollowood, T., & Hort, J., 2009. Sensory Evaluation, A practical handbook, 1st ed. Wiley-Blackwell, Iowa.
- Khoshnoudi-Nia, S., Forghani, Z., & Jafari, S.M., 2022. A systematic review and meta-analysis of fish oil encapsulation within different micro/nanocarriers. *Crit. Rev. Food Sci. Nutr.* 62: 2061–2082. doi:10.1080/10408398.2020.1848793
- Kilgour, R.D., Viganò, A., Trutschnigg, B., Lucar, E., Borod, M., & Morais, J.A., 2013. Handgrip strength predicts survival and is associated with markers of clinical and functional outcomes in advanced cancer patients. *Support. Care Cancer* 21: 3261–3270. doi:10.1007/s00520-013-1894-4
- Kim, C.R., Jeon, Y.-J., & Jeong, T., 2019. Risk factors associated with low handgrip strength in the older Korean population. *PLoS One* 14: 1–14.
- Kim, J., Hong, S., Song, B., Sohn, H., Baik, H., & Sung, M., 2020. Efficacy of Cereal-based Oral Nutrition Supplement on Nutritional Status, Inflammatory Cytokine Secretion and Quality of Life in Cancer Patients Under Cancer Therapy. *J Cancer Prev* 25: 55–63.
- Kim, J.K., Leeman, J.E., McBride, S., Tsai, C.J., & Lee, N.Y., 2018. Proton Therapy for Head and Neck Cancer. *Curr. Treat. Options in Oncol.* 19: 1–14. doi:10.1007/s11864-018-0546-9
- Kiss, N.K., Krishnasamy, M., Loeliger, J., Granados, A., Dutu, G., & Corry, J., 2012. A dietitian-led clinic for patients receiving (chemo)radiotherapy for head and neck cancer. *Support. Care Cancer* 20: 2111–2120. doi:10.1007/s00520-011-1321-7
- Klek, S., Jankowski, M., Kruszkowski, W.J., Fijuth, J., Kapala, A., Kabata, P., et al., 2015. Clinical nutrition in oncology: Polish recommendations. *Oncol. Clin. Pract.* 65: 320–337. doi:10.5603/NJO.2015.0062
- Kliwer, K.L., Ke, J., Tian, M., Cole, R.M., Andridge, R.R., Kliwer, K.L., et al., 2015. Adipose tissue lipolysis and energy metabolism in early cancer cachexia in mice Adipose tissue lipolysis and energy metabolism in early cancer cachexia in mice. *Cancer Biol. Ther.* 16: 886–897. doi:10.4161/15384047.2014.987075
- Kono, T., Sakamoto, K., Shinden, S., & Ogawa, K., 2017. Pre-therapeutic nutritional assessment for predicting severe adverse events in patients with head and neck cancer treated by radiotherapy. *Clin. Nutr.* 36: 1681–1685. doi:10.1016/j.clnu.2016.10.021
- Krisna, D.D.A., 2011. Pengaruh Regelatnasi dan Modifikasi Hidrotermal Terhadap Sifat Fisik pada Pembuatan Edible Film dari Pati Kacang Merah (*Vigna Angularis* Sp.). *Thesis*.
- Kubota, H., Matsumoto, H., Higashida, M., Murakami, H., Nakashima, H., Oka, Y., et al., 2013. Eicosapentaenoic acid modifies cytokine activity and inhibits cell proliferation in an oesophageal cancer cell line. *Anticancer Res.* 33: 4319–4324.
- Langius, J.A.E., Doornaert, P., Spreeuwenberg, M.D., Langendijk, J.A., Leemans, C.R., & Schueren, M.A.E.V.B. Van Der, 2010. Radiotherapy on the neck nodes predicts severe weight loss in patients with early stage laryngeal cancer. *Radiother. Oncol.* 97: 80–85. doi:10.1016/j.radonc.2010.02.017
- Langius, J.A.E., Kruizenga, H.M., Uitdehaag, B.M.J., Langendijk, J.A., Doornaert, P., Leemans, C.R., et al., 2012. Resting energy expenditure in head and neck cancer patients before and during radiotherapy. *Clin. Nutr.* 31: 549–554. doi:10.1016/j.clnu.2011.12.009
- Lechevalier, V., Croguennec, T., Anton, M., & Nau, F., 2011. Processed egg products, in: Improving the Safety and Quality of Eggs and Egg Products: Egg Chemistry, Production and Consumption. Woodhead Publishing Limited, pp. 538–581. doi:10.1533/9780857093912.4.538

- Lechien, J.R., Nassri, A., Kindt, N., Brown, D.N., Journe, F., & Saussez, S., 2017. Role of macrophage migration inhibitory factor in head and neck cancer and novel therapeutic targets : A systematic review. *Head Neck* 1–12. doi:10.1002/hed.24939
- Lecot, P., Sarabi, M., Abrantes, M.P., Mussard, J., & Michallet, M., 2019. Neutrophil Heterogeneity in Cancer: From Biology to Therapies. *Front. Immunol.* 10: 1–19. doi:10.3389/fimmu.2019.02155
- Lee, A., Ko, J., Ahn, S., Kim, H.J., Min, S., & Kim, E., 2021. Potential Effects of Pigmented rice on Immunity: A Review Focusing on Anthocyanins. *J. Food Nutr. Res.* 9: 26–31. doi:10.12691/jfnr-9-1-4
- Lee, F., Yang, P., Chien, M., Lee, J., Leung, C., & Cheng, S., 2018. An Increased Neutrophil-to-Lymphocyte Ratio Predicts Incomplete Response to Therapy in Differentiated Thyroid Cancer. *Int. J. Med. Sci.* 15: 1757–1763. doi:10.7150/ijms.28498
- Lee, H., Havrila, C., Bravo, V., Shantz, K., Diaz, K., Lerner, J., et al., 2008. Effect of oral nutritional supplementation on weight loss and percutaneous endoscopic gastrostomy tube rates in patients treated with radiotherapy for oropharyngeal carcinoma. *Support Care Cancer* 16: 285–289. doi:10.1007/s00520-007-0313-0
- Lee, J.H., & Paik, H.D., 2019. Anticancer and immunomodulatory activity of egg proteins and peptides: a review. *Poult. Sci.* 98: 6505–6516. doi:10.3382/ps/pez381
- Lee, N., Puri, D.R., Blanco, A.I., & Chao, K.S.C., 2007. Intensity-modulated radiation therapy in head and neck cancers: an update. *HeadNeck* 387–400. doi:10.1002/hed
- Legaspi, A., Jeevanandam, M., Starnes, H.F., & Brennan, M.F., 1987. Whole body lipid and energy metabolism in the cancer patient. *Metabolism* 36: 958–963. doi:10.1016/0026-0495(87)90132-6
- Leifler, K.S., Svensson, S., Bendrik, C., Robertson, J., Olsson, A., & Dabrosin, C., 2013. Inflammation Induced by MMP-9 Enhances Tumor Regression of Experimental Breast Cancer. *J Immunol* 190: 4420–4430. doi:10.4049/jimmunol.1202610
- León, X., Pardo, L., Sansa, A., Puig, R., Serrano, C., López, M., et al., 2020. Prognostic Significance of Albumin Levels Prior to Treatment in Patients With Head and Neck Squamous Cell Carcinoma. *Acta Otorrinolaringol. (English Ed.* 71: 204–211. doi:10.1016/j.otoeng.2019.06.004
- Lestari S, Rahmawati M, Shita D, E.L., 2019. Modification of powdered, ready to brew hospital-made formula. *J. Gizi dan Kesehatan.* 11: 11–18.
- Lestari, S., Rahmawati, M., Shita, D., & Eka, L., 2019. Modifikasi formula enteral rumah sakit siap seduh. *J. Gizi dan Kesehatan.* 11: 11–18.
- Lestari, I.A., Kadriyan, H., Sulaksana, M.A., Firdausy, M.S.A.P., Harahap, I.L., Karuniawati, T.P., et al., 2021. The trend of hemoglobin levels in nasopharyngeal cancer patients treated with chemotherapy in low human development index region in Indonesia. *IOP Conf. Ser. Earth Environ. Sci.* 712. doi:10.1088/1755-1315/712/1/012015
- Lewis, C.E., Pollard, J.W., Lewis, C.E., & Pollard, J.W., 2006. Distinct Role of Macrophages in Different Tumor Microenvironments Distinct Role of Macrophages in Different Tumor Microenvironments. *Cancer Res* 66: 605–612. doi:10.1158/0008-5472.CAN-05-4005
- Li, J., Sun, F., Yang, C., Zhou, H., Gao, M., Zhang, Q., et al., 2021. GEO data mining and TCGA analysis reveal altered branched chain amino acid metabolism in pancreatic cancer patients. *Aging (Albany, NY).* 13: 11907–11918.
- Li, K., Xu, Y., Hu, Y., Liu, Y., Chen, X., & Zhou, Y., 2019. Effect of Enteral Immunonutrition on Immune, Inflammatory Markers and Nutritional Status in Gastric Cancer Patients Undergoing Gastrectomy: A Randomized Double-Blinded Controlled Trial. *J. Investig. Surg.* 33: 950–959. doi:10.1080/08941939.2019.1569736
- Li, L., Li, Wenqian, Xu, D., He, H., Yang, W., Guo, H., et al., 2023. Association Between Visceral Fat Area and Cancer Prognosis: A Population-Based Multicenter Prospective Study. *Am. J. Clin. Nutr.* 118: 507–517. doi:10.1016/j.ajcnut.2023.07.001
- Li, W.L., Yu, H.Y., Zhang, X.J., Ke, M., & Hong, T., 2018. Purple sweet potato anthocyanin exerts antitumor effect in bladder cancer. *Oncol. Rep.* 40: 73–82. doi:10.3892/or.2018.6421
- Li, X., Zhou, J., Chu, C., You, Q., Zhong, R., Rao, Z., et al., 2019. Home enteral nutrition may prevent myelosuppression of patients with nasopharyngeal carcinoma treated by concurrent chemoradiotherapy. *Head Neck* 41: 3525–3534. doi:10.1002/hed.25861
- Liang, H., Peng, H., & Chen, L., 2021. Prognostic value of sarcopenia and systemic inflammation markers in patients undergoing definitive radiotherapy for esophageal cancer. *Cancer Manag. Res.* 13: 181–192. doi:10.2147/CMAR.S288522
- Liao, K.-H., 2016. Handgrip strength in low, medium, and high Body Mass Index males and females. *Middle East J Rehabil Heal.* 3: 1–7.
- Lim, S., Xu, J., Kim, J., Chen, T., Su, X., Standard, J., et al., 2014. Role of Anthocyanin-enriched Purple-fleshed Sweet Potato P40 in Colorectal Cancer Prevention. *Mol Nutr Food Res* 57:

- 1908–1917. doi:10.1002/mnfr.201300040.Role
- Lim, S., Xu, J., Kim, J., Chen, T., Su, X., & Standard, J., 2013. Role of anthocyanin-enriched purple-fleshed sweet potato p40 in colorectal cancer prevention. *Mol. Nutr. Food Res* 57: 1908–1917. doi:10.1002/mnfr.201300040
- Lin, B.W., Gong, C.C., Song, H.F., & Cui, Y.Y., 2017. Effects of anthocyanins on the prevention and treatment of cancer. *Br. J. Pharmacol.* 174: 1226–1243. doi:10.1111/bph.13627
- Lin, W., & Karin, M., 2007. Review series A cytokine-mediated link between innate immunity , inflammation , and cancer. *J. Clin. Invest* 117: 1183. doi:10.1172/JCI31537.data
- Liu, J., Abdelmagid, S.A., Pinelli, C.J., Monk, J.M., Liddle, D.M., Hillyer, L.M., et al., 2018. Marine fish oil is more potent than plant-based n-3 polyunsaturated fatty acids in the prevention of mammary tumors. *J. Nutr. Biochem.* 55: 41–52. doi:10.1016/j.jnutbio.2017.12.011
- Llor, X., Pons, E., Roca, A., Álvarez, M., Mañé, J., Fernández-Bañares, F., et al., 2003. The effects of fish oil, olive oil, oleic acid and linoleic acid on colorectal neoplastic processes. *Clin. Nutr.* 22: 71–79. doi:10.1054/clnu.2002.0627
- Lochs, H., Allison, S.P., Meier, R., Pirlich, M., Kondrup, J., Schneider, S., et al., 2006. Introductory to the ESPEN Guidelines on Enteral Nutrition : Terminology , Definitions and General Topics. *Clin. Nutr.* 25: 180–186. doi:10.1016/j.clnu.2006.02.007
- Loman, B.R., Luo, M., Baggs, G.E., Mitchell, D.C., Nelson, J.L., Ziegler, T.R., et al., 2019. Specialized High-Protein Oral Nutrition Supplement Improves Home Nutrient Intake of Malnourished Older Adults Without Decreasing Usual Food Intake. *J. Parenter. Enter. Nutr.* 43: 794–802. doi:10.1002/jpen.1467
- Lyu, J., Shi, A., Li, T., Li, J., Zhao, R., Zhu, S., et al., 2022. Effects of Enteral Nutrition on Patients With Oesophageal Carcinoma Treated With Concurrent Chemoradiotherapy: A Prospective, Multicentre, Randomised, Controlled Study. *Front. Oncol.* 12: 1–9. doi:10.3389/fonc.2022.839516
- Ma, S., Zhao, S., Zhang, Y., Yu, Y., Liu, J., & Xu, M., 2013. Quality characteristic of spray-drying egg white powders. *Mol. Biol. Rep.* 40: 5677–5683. doi:10.1007/s11033-013-2669-1
- Ma, Y., Zhang, J., Chen, X., & Chen, X., 2021. Lymphocyte-to-Monocyte Ratio is Associated with the Poor Prognosis of Breast Cancer Patients Receiving Neoadjuvant Chemotherapy Lymphocyte-to-Monocyte Ratio is Associated with the Poor Prognosis of Breast Cancer Patients Receiving Neoadjuvant Chemotherapy. *Cancer Manag. Res.* 13: 1571–1580. doi:10.2147/CMAR.S292048
- Machon, C., Thezenas, S., Dupuy, A.M., Assenat, E., Michel, F., Mas, E., et al., 2012. Immunonutrition before and during radiochemotherapy: Improvement of inflammatory parameters in head and neck cancer patients. *Support. Care Cancer* 20: 3129–3135. doi:10.1007/s00520-012-1444-5
- MacHon, C., Thezenas, S., Dupuy, A.M., Assenat, E., Michel, F., Mas, E., et al., 2012. Immunonutrition before and during radiochemotherapy: Improvement of inflammatory parameters in head and neck cancer patients. *Support. Care Cancer* 20: 3129–3135. doi:10.1007/s00520-012-1444-5
- Madureira, A.R., Pereira, C.I., Gomes, A.M.P., Pintado, M.E., & Xavier Malcata, F., 2007. Bovine whey proteins - Overview on their main biological properties. *Food Res. Int.* 40: 1197–1211. doi:10.1016/j.foodres.2007.07.005
- Magalhaes, M.A.O., Glogauer, J.E., & Glogauer, M., 2014. Neutrophils and oral squamous cell carcinoma : lessons learned and future directions. *J. Leukoc. Biol.* 96: 695–702. doi:10.1189/jlb.4RU0614-294R
- Mahdavi, R., Faramarzi, E., Mohammad-Zadeh, M., Ghaeammaghami, J., & Jabbari, M. V., 2007. Consequences of radiotherapy on nutritional status, dietary intake, serum zinc and copper levels in patients with gastrointestinal tract and head and neck cancer. *Saudi Med. J.* 28: 435–440.
- Mantovani, A., Allavena, P., Sica, A., & Balkwill, F., 2008. Cancer-related inflammation. *Nature* 454: 436–444. doi:10.1038/nature07205
- Manzanares, W., & Hardy, G., 2009. Selenium supplementation in the critically ill : posology and pharmacokinetics. *Curr Opin Clin Nutr Metab Care* 12: 273–280. doi:10.1097/MCO.0b013e32832a0cc2
- Marcillo-Parra, V., Tupuna-Yerovi, D.S., González, Z., & Ruales, J., 2021. Encapsulation of bioactive compounds from fruit and vegetable by-products for food application – A review. *Trends Food Sci. Technol.* 116: 11–23. doi:10.1016/j.tifs.2021.07.009
- Marcu, L.G., 2013. Improving therapeutic ratio in head and neck cancer with adjuvant and cisplatin-based treatments. *Biomed Res. Int.* 2013: 1–9. doi:10.1155/2013/817279
- Marshall, K.M., Loeliger, J., Nolte, L., & Kelaart, A., 2018. Prevalence of malnutrition and impact on clinical outcomes in cancer services : A comparison of two time points. *Clin. Nutr.* 1–8.

doi:10.1016/j.clnu.2018.04.007

- Martin, R.C.G., Agle, S., Schlegel, M., Hayat, T., Scoggins, C.R., McMasters, K.M., et al., 2017. Efficacy of preoperative immunonutrition in locally advanced pancreatic cancer undergoing irreversible electroporation (IRE). *Eur. J. Surg. Oncol.* 43: 772–779. doi:10.1016/j.ejso.2017.01.002
- Mayer, K., Schaefer, M.B., & Seeger, W., 2006. Fish oil in the critically ill : from experimental to clinical data. *Curr Opin Clin Nutr Metab Care* 9: 140–148.
- Mazzuca, F., Roberto, M., Arrivi, G., Sarfati, E., Schipilliti, F.M., Crimini, E., et al., 2019. Clinical impact of highly purified, whey proteins in patients affected with colorectal cancer undergoing chemotherapy: preliminary results of a placebo-controlled study. *Integr. Cancer Ther.* 18: 1–11. doi:10.1177/1534735419866920
- Mcgranahan, N., Rosenthal, R., Hiley, C.T., Herrero, J., & Swanton, C., 2017. Allele-Specific HLA Loss and Immune Escape in Lung Cancer Evolution. *Cell* 171: 1259–1271. doi:10.1016/j.cell.2017.10.001
- McKelvey, K.J., Hudson, A.L., Back, M., Eade, T., & Diakos, C.I., 2018. Radiation, inflammation and the immune response in cancer. *Mamm. Genome* 29: 843–865. doi:10.1007/s00335-018-9777-0
- McKeown, D.J., Brown, D.J.F., Kelly, A., Wallace, A.M., & Mcmillan, D.C., 2004. The relationship between circulating concentrations of C-reactive protein , inflammatory cytokines and cytokine receptors in patients with non-small-cell lung cancer. *Br. J. Cancer* 91: 1993–1995. doi:10.1038/sj.bjc.6602248
- McMurray, R.G., Soares, J., Caspersen, C.J., & McCurdy, T., 2014. Examining variations of resting metabolic rate of adults: A public health perspective. *Med. Sci. Sports Exerc.* 46: 1352–1358. doi:10.1249/MSS.0000000000000232
- Meij, B.S. van der, Deutz, N.E.P., Rodriguez, R.E., & Engelen, M.P.K.J., 2020. Early Signs of Impaired Gut Function Affect Daily Functioning in Patients With Advanced Cancer Undergoing Chemotherapy. *JPEN. J. Parenter. Enteral Nutr.* 45. doi:10.1002/jpen.1941
- Meira, L.B., Bugni, J.M., Green, S.L., Lee, C., Pang, B., Borenshtein, D., et al., 2008. DNA damage induced by chronic inflammation contributes to colon carcinogenesis in mice. *J. Clin. Invest* 118: 2516–2525. doi:10.1172/JCI35073.2516
- Mellors, K., Ye, X., Van Den Brande, J., Wai Ray Mak, T., Brown, T., Findlay, M., et al., 2021. Comparison of prophylactic percutaneous endoscopic gastrostomy with reactive enteral nutrition in patients with head and neck cancer undergoing radiotherapy or chemoradiotherapy: A systematic review. *Clin. Nutr. ESPEN* 46: 87–98. doi:10.1016/j.clnesp.2021.09.724
- Menendez, J., & Lupu, R., 2006. Mediterranean dietary traditions for the olecular Treatment of Human Cancer: anti-oncogenic actions of the main olive oils monounsaturated fatty acid oleic acid (18:1n-9). *Curr. Pharm. Biotechnol.* 7: 495–502. doi:10.2174/138920106779116900
- Meng, L., Wei, J., Ji, R., Wang, B., Xu, X., Xin, Y., et al., 2019. Effect of early nutrition intervention on advanced nasopharyngeal carcinoma patients receiving chemoradiotherapy. *J. Cancer* 10: 3650–3656. doi:10.7150/jca.33475
- Mestas, J., & Hughes, C.C.W., 2006. Of Mice and Not Men: Differences between Mouse and Human Immunology. *J Immunol* 172: 2731–2738. doi:10.4049/jimmunol.172.5.2731
- Meydani, M., 2002. The Boyd Orr Lecture: Nutrition interventions in aging and age-associated disease. *Proc. Nutr. Soc.* 61: 165–171. doi:10.1079/pns2002144
- Mine, Y., 2007. Egg proteins and peptides in human health-chemistry, bioactivity and production. *Curr. Pharm. Des.* 13: 875–884. doi:10.2174/138161207780414278
- Mine, Y., & Kovacs-nolan, J., 2004. Biologically Active Hen Egg Components in Human Health and Disease. *J. Poult. Sci.* 41: 1–29.
- Mitchell, W.K., Williams, J., Atherton, P., Larvin, M., Lund, J., & Narici, M., 2012. Sarcopenia, dynapenia, and the impact of advancing age on human skeletal muscle size and strength; a quantitative review. *Front. Physiol.* 3 JUL: 1–18. doi:10.3389/fphys.2012.00260
- Miyata, H., Yano, M., Yasuda, T., Yamasaki, M., Murakami, K., Makino, T., et al., 2016. Randomized study of the clinical effects of u -3 fatty acid – containing enteral nutrition support during neoadjuvant chemotherapy on chemotherapy-related toxicity in patients with esophageal cancer. *Nutrition* 33: 204–210. doi:10.1016/j.nut.2016.07.004
- Mocellin, S., Marincola, F.M., & Young, H.A., 2005. Interleukin-10 and the immune response against cancer: a counterpoint. *J. Leukoc. Biol.* 78: 1043–1051. doi:10.1189/jlb.0705358
- Moskovitz, D.N., Kim, Y., & Frpc, C., 2004. Does Perioperative Immunonutrition Reduce Postoperative Complications in Patients with Gastrointestinal Cancer Undergoing Operations? *Nutr. Rev.* 62: 443–447. doi:10.1301/nr.2004.nov.443-447
- Mourtzakis, M., Prado, C.M.M., Lieffers, J.R., Reiman, T., McCargar, L.J., & Baracos, V.E., 2008. A practical and precise approach to quantification of body composition in cancer patients using

- computed tomography images acquired during routine care. *Appl. Physiol. Nutr. Metab.* 33: 997–1006. doi:10.1139/H08-075
- Murtaza, B., Hichami, A., Khan, A.S., Ghiringhelli, F., & Khan, N.A., 2017. Alteration in taste perception in cancer: Causes and strategies of treatment. *Front. Physiol.* 8: 1–10. doi:10.3389/fphys.2017.00134
- Musa, I.R., Omar, S.M., & Adam, I., 2022. Mid-upper arm circumference as a substitute for body mass index in the assessment of nutritional status among adults in eastern Sudan. *BMC Public Health* 22: 1–8. doi:10.1186/s12889-022-14536-4
- Muscaritoli, M., Arends, J., Bachmann, P., Baracos, V., Barthelemy, N., Bertz, H., et al., 2021. ESPEN practical guideline: Clinical Nutrition in cancer. *Clin. Nutr.* 40: 2898–2913. doi:10.1016/j.clnu.2021.02.005
- Muscaritoli, M., Lucia, S., Farcomeni, A., Lorusso, V., Barone, C., Plastino, F., et al., 2017. Prevalence of malnutrition in patients at first medical oncology visit: the PreMiO study. *Oncotarget* 8: 79884–79896. doi:10.18632/oncotarget.20168
- Mutwiri, E., Mwenda, E., & Karanja, S., 2016. Effects of Temperature Dependent Viscosity and Viscous Dissipation on Fluid Flow past a Moving Isothermal Flat Plate. *Int. J. Innov. Sci. Eng. Technol.* 3.
- National Collaborating Centre for Acute Care, 2006. Nutrition Support for Adults Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition Nutrition support in adults Oral nutrition support, enteral tube feeding and parenteral nutrition. National Collaborating Centre for Acute Care at The Royal College of Surgeons of England, London.
- Naugler, W.E., & Karin, M., 2008. The wolf in sheep's clothing: the role of interleukin-6 in immunity, inflammation and cancer. *Trends Mol. Med.* 14: 109–119. doi:10.1016/j.molmed.2007.12.007
- Nazari, V., Pashaki, A.S., & Hasanzadeh, E., 2021. The reliable predictors of severe weight loss during the radiotherapy of Head and Neck Cancer. *Cancer Treat. Res. Commun.* 26: 100281. doi:10.1016/j.ctarc.2020.100281
- Nazha, B., Moussaly, E., Zaarour, M., Weerasinghe, C., & Azab, B., 2015. Hypoalbuminemia in colorectal cancer prognosis: Nutritional marker or inflammatory surrogate? *World J Gastrointest Surg* 7: 370–377.
- Ndife, J., EJIKEME Udobi, C., Chinonyerem Amaechi, N., Ejikeme, C., & Amaechi, N., 2010. Effect of oven drying on the functional and nutritional properties of whole egg and its components. *African J. Food Sci.* 4: 254–257.
- Neoh, M.K., Zaid, Z.A., Azuan, Z., Daud, M., & Yusop, N.B., 2020. Changes in Nutrition Impact Symptoms, Nutritional and Functional Status during Head and Neck Cancer Treatment. *Nutrients* 12: 1–16.
- Ng, M.L., Mak, M.W.C., Mak, W.T.J., & Xiong, M., 2022. Effect of temperature on thickness of starch- and gum-based thickened liquids for dysphagic individuals. *Food Hydrocoll. Heal.* 2: 100076. doi:10.1016/j.fhfh.2022.100076
- Nguyen, T.Y.V., Batterham, M.J., & Edwards, C., 2016. Comparison of Resting Energy Expenditure between Cancer Subjects and Healthy Controls: A Meta-Analysis. *Nutr. Cancer* 68: 374–387. doi:10.1080/01635581.2016.1153667
- Nicolini, A., Ferrari, P., Chiara, M., Fini, M., Pagani, S., Giampietro, O., et al., 2013. Malnutrition, anorexia and cachexia in cancer patients: A mini-review on pathogenesis and treatment. *Biomed. Pharmacother.* 67: 807–817. doi:10.1016/j.biopha.2013.08.005
- Niederhuber, J.E., Armitage, J.O., Kastan, M.B., Doroshow, J.H., & Tepper, J.E., 2020. *Abeloff's Clinical Oncology*, Sixth Edition, Sixth. ed. Elsevier Inc., Philadelphia.
- Nikolaidis, A., Andreadis, M., & Moschakis, T., 2017. Effect of heat, pH, ultrasonication and ethanol on the denaturation of whey protein isolate using a newly developed approach in the analysis of difference-UV spectra. *Food Chem.* 232: 425–433. doi:10.1016/j.foodchem.2017.04.022
- Nishikawa, H., & Sakaguchi, S., 2010. Regulatory T cells in tumor immunity. *Int. J. Cancer* 127: 759–767. doi:10.1002/ijc.25429
- Notarnicola, M., Pisanti, S., Tutino, V., Bocale, D., Rotelli, M.T., Gentile, A., et al., 2011. Effects of olive oil polyphenols on fatty acid synthase gene expression and activity in human colorectal cancer cells. *Genes Nutr.* 6: 63–69. doi:10.1007/s12263-010-0177-7
- Ockermann, P., Headley, L., Lizio, R., & Hansmann, J., 2021. A review of the properties of anthocyanins and their influence on factors affecting cardiometabolic and cognitive health. *Nutrients* 13: 1–24.
- Okamoto, Y., Okano, A.E.K., Izuishi, K., & Usuki, A.E.H., 2009. Attenuation of the Systemic Inflammatory Response and Infectious Complications After Gastrectomy with Preoperative Oral Arginine and  $\omega$ -3 Fatty Acids Supplemented Immunonutrition. *World J Surg.* 33: 1815–1821. doi:10.1007/s00268-009-0140-1
- Okazaki, I., Kotani, A., & Honjo, T., 2007. Role of AID in Tumorigenesis. *Adv. Immunol.* 94: 245–265.

doi:10.1016/S0065-2776(06)94008-5

- Orell, H., Schwab, U., Saarilahti, K., Österlund, P., Ravasco, P., & Mäkitie, A., 2019. Nutritional counseling for head and neck cancer patients undergoing (chemo) radiotherapy—a prospective randomized trial. *Front. Nutr.* 6. doi:10.3389/fnut.2019.00022
- Orrevall, Y., Tishelman, C., Permert, J., & Cederholm, T., 2009. The use of artificial nutrition among cancer patients enrolled in palliative home care services. *Palliat. Med.* 23: 556–564. doi:10.1177/0269216309105811
- Ozkan, G., Franco, P., De Marco, I., Xiao, J., & Capanoglu, E., 2019. A review of microencapsulation methods for food antioxidants: Principles, advantages, drawbacks and applications. *Food Chem.* 272: 494–506. doi:10.1016/j.foodchem.2018.07.205
- Paccagnella, A., Morello, M., Da Mosto, M.C., Baruffi, C., Marcon, M.L., Gava, A., et al., 2010. Early nutritional intervention improves treatment tolerance and outcomes in head and neck cancer patients undergoing concurrent chemoradiotherapy. *Support. Care Cancer* 18: 837–845. doi:10.1007/s00520-009-0717-0
- Paek, J., & Choi, Y.J., 2019. Association between hand grip strength and impaired health-related quality of life in Korean cancer survivors: A cross-sectional study. *BMJ Open* 9: 1–8. doi:10.1136/bmjopen-2019-030938
- Paixão, E.M.D.S., Oliveira, A.C.D.M., Pizato, N., Muniz-Junqueira, M.I., Magalhães, K.G., Nakano, E.Y., et al., 2017. The effects of EPA and DHA enriched fish oil on nutritional and immunological markers of treatment naïve breast cancer patients: A randomized double-blind controlled trial. *Nutr. J.* 16: 1–11. doi:10.1186/s12937-017-0295-9
- Palucka, A.K., Coussens, L.M., Biology, C., Health, O., & Hall, J., 2016. The Basis of Onc Immunology. *Cell* 164: 1233–1247. doi:10.1016/j.cell.2016.01.049.
- Park, B., Yee, C., & Lee, K.M., 2014. The effect of radiation on the immune response to cancers. *Int. J. Mol. Sci.* 15: 927–943. doi:10.3390/ijms15010927
- Parodi, P.W., 2007. A Role for Milk Proteins and their Peptides in Cancer Prevention. *Curr. Pharm. Des.* 13: 813–828.
- Pereira, A.A.C., Zaia, R.D., Souza, G.H.G., Luizeti, B.O., Andreola, R., Junior, A.O.V., et al., 2020. The Correlation between Hand Grip Strength and Nutritional Variables in Ambulatory Cancer Patients. *Nutr. Cancer* 1–9. doi:10.1080/01635581.2020.1750662
- Philpott, M., Gould, K.S., Markham, K.R., Lewthwaite, S.L., & Ferguson, L.R., 2003. Enhanced coloration reveals high antioxidant potential in new sweetpotato cultivars. *J. Sci. Food Agric.* 83: 1076–1082. doi:10.1002/jsfa.1504
- Piotrowski, I., Kulcenty, K., & Suchorska, W., 2020. Interplay between inflammation and cancer. *Reports Pract. Oncol. Radiother.* 25: 422–427. doi:10.1016/j.rpor.2020.04.004
- Planas, M., Álvarez-Hernández, J., León-Sanz, M., Celaya-Pérez, S., Araujo, K., & García de Lorenzo, A., 2016. Prevalence of hospital malnutrition in cancer patients: a sub-analysis of the PREDyCES® study. *Support. Care Cancer* 24: 429–435. doi:10.1007/s00520-015-2813-7
- Platek, M.E., 2012. The role of dietary counseling and nutrition support in head and neck cancer patients. *Curr. Opin. Support. Palliat. Care* 6: 438–445. doi:10.1097/SPC.0b013e32835999d5
- Poggioli, R., Hirani, K., Jogani, V.G., & Ricordi, C., 2023. Modulation of inflammation and immunity by Omega-3 fatty acids: a possible role for prevention and to halt disease progression in autoimmune, viral, and age-related disorders. *Eur. Rev. Med. Pharmacol. Sci.* 27: 7380–7400. doi:10.26355/eurrev\_202308\_33310
- Poulia, K.-A., & de van der Schueren, M.A.E., 2016. Approach to Oral and Enteral Nutrition in Adults. Module 8.2. Hospital Diet and Oral Nutritional Supplements (Sip Feeds ). Module 8.2 Hospital Diet and Oral Nutritional Supplements (Sip Feeds). *ESPEN LLL Program.* 1–14.
- Powrozek, T., Dziwota, J., & Małacka-massalska, T., 2021. Nutritional Deficiencies in Radiotherapy-Treated Head and Neck Cancer Patients. *J. Clin. Med.* 10: 1–17.
- Prado, C.M.M., Baracos, V.E., McCargar, L.J., Reiman, T., Mourtzakis, M., Tonkin, K., et al., 2009. Sarcopenia as a determinant of chemotherapy toxicity and time to tumor progression in metastatic breast cancer patients receiving capecitabine treatment. *Clin. Cancer Res.* 15: 2920–2926. doi:10.1158/1078-0432.CCR-08-2242
- Prevost, V., Joubert, C., Heutte, N., & Babin, E., 2014. Assessment of nutritional status and quality of life in patients treated for head and neck cancer. *Eur. Ann. Otorhinolaryngol. Head Neck Dis.* 131: 113–120. doi:10.1016/j.anorl.2013.06.007
- Pries, R., & Wollenberg, B., 2006. Cytokines in head and neck cancer 17: 141–146. doi:10.1016/j.cytogfr.2006.02.001
- Purcell, S.A., Elliott, S.A., Baracos, V.E., Chu, Q.S.C., & Prado, C.M., 2016. Key determinants of energy expenditure in cancer and implications for clinical practice. *Eur. J. Clin. Nutr.* 70: 1230–1238. doi:10.1038/ejcn.2016.96
- Putri, A.M., 2019. Uji Angka Lempeng Total (ALT) Pada Formula Oral Nutritional Supplement (ONS)

Berbasis Tempe Dan Pisang Kepok Dengan Prinsip Tinggi Energi Tinggi Protein (TETP) Dan Rendah Laktosa.

- Putri, A.Y., Prajoko, Y.W., Dewantiningrum, J., & Priharsanti, C.N., 2021. The effect of radiotherapy on blood components of cervical cancer patients. *Diponegoro Med. J.* 10: 418–425. doi:10.3233/JRS-1990-1113
- Putri, W.A. kurnia, Zaki, I., & Ramadhan, G.R., 2022. Kandungan Gizi Formula Enteral Berbasis Ubi Ungu, Ikan Lele, Tempe Kedelai, Labu Kuning. *J. Gipas* 6: 33–49. doi:10.20884/1.jgipas.2022.6.2.6949
- Qiu, Y., You, J., Wang, K., Cao, Y., Hu, Y., Zhang, H., et al., 2020. Effect of whole-course nutrition management on patients with esophageal cancer undergoing concurrent chemoradiotherapy: A randomized control trial. *Nutrition* 69: 1–9. doi:10.1016/j.nut.2019.110558
- Qu, X., Tang, Y., & Hua, S., 2018. Immunological approaches towards cancer and inflammation: A cross talk. *Front. Immunol.* 9. doi:10.3389/fimmu.2018.00563
- Rahmadanti, T.S., Candra, A., & Nissa, C., 2020. Pengembangan formula enteral hepatogomax untuk penyakit hati berbasis tepung kedelai dan tepung susu kambing. *J. Gizi Indones. (The Indones. J. Nutr.* 9: 1–10. doi:10.14710/jgi.9.1.1-10
- Ralli, M., Grasso, M., Gilardi, A., Ceccanti, M., Messina, M.P., Tirassa, P., et al., 2020. The role of cytokines in head and neck squamous cell carcinoma: A review. *CLin Ter* 171: 1–7. doi:10.7417/CT.2020.
- Rao, P.S., Nolasco, E., Handa, A., Naldrett, M.J., Alvarez, S., & Majumder, K., 2020. Effect of pH and heat treatment on the antioxidant activity of egg white protein-derived peptides after simulated in-vitro gastrointestinal digestion. *Antioxidants* 9: 1–14. doi:10.3390/antiox9111114
- Rathod, G., & Kairam, N., 2018. Preparation of omega 3 rich oral supplement using dairy and non-dairy based ingredients. *J. Food Sci. Technol.* 55: 760–766. doi:10.1007/s13197-017-2988-7
- Rauf, R., & Utami, A., 2020. Nutrition value and viscosity of polymeric enteral nutrition products based on purple sweet potato flour with variation of maltodextrin levels. *J. Gizi Indones. (The Indones. J. Nutr.* 8: 119–125. doi:10.14710/jgi.8.2.119-125
- Ravasco, P., 2019. Nutrition in Cancer Patients. *J. Clin. Med.* 8: 1–13. doi:10.1001/jama.1961.03040100088029
- Ravasco, P., Monteiro-Grillo, I., Vidal, P.M., & Camilo, M.E., 2005. Impact of nutrition on outcome: A prospective randomized controlled trial in patients with head and neck cancer undergoing radiotherapy. *Head Neck* 27: 659–668. doi:10.1002/hed.20221
- Ravindranathan, D., Master, V.A., & Bilen, M.A., 2021. Inflammatory markers in cancer immunotherapy. *Biology (Basel)*. 10: 1–12. doi:10.3390/biology10040325
- Raymond, J.L., & Morrow, K., 2021. Krause and Mahan's Food & The Nutrition Care Process, 15th Edition, Elsevier.
- Ricardi, J.L., Marcadenti, A., de Souza, S.P., & Ribeiro, A.S., 2013. Oral nutritional supplements intake and nutritional status among inpatients admitted in a tertiary hospital. *Nutr. Hosp.* 28: 1357–1360. doi:10.3305/nh.2013.28.4.6499
- Ricciotti, E., & Fitzgerald, G.A., 2011. Prostaglandins and inflammation. *Arterioscler. Thromb. Vasc. Biol.* 31: 986–1000. doi:10.1161/ATVBAHA.110.207449
- Rickles, A.S., Iannuzzi, J.C., Mironov, O., Deeb, A.P., Sharma, A., Fleming, F.J., et al., 2013. Visceral Obesity and Colorectal Cancer: Are We Missing the Boat with BMI? *J. Gastrointest. Surg.* 17: 133–143. doi:10.1007/s11605-012-2045-9
- Ries, A., Trottenberg, P., Elsner, F., Stiel, S., Haugen, D., Kaasa, S., et al., 2012. A systematic review on the role of fish oil for the treatment of cachexia in advanced cancer: An EPCRC cachexia guidelines project. *Palliat. Med.* 26: 294–304. doi:10.1177/0269216311418709
- Rini, F.S., Murbawani, E.A., Fasitasari, M., Puruhita, N., & Khairuddin, 2023. The relationship between nutritional status before chemotherapy with nutritional status after chemotherapy in locoregionally advanced nasopharyngeal carcinoma patients. *Bali Med. J.* 12: 843–850. doi:10.15562/bmj.v12i1.4070
- Romdhoni, A.C., Alkaff, F.F., Kahdina, M., Masturina, M., & Ramadhani, R., 2020. Radiotherapy Effect on Complete Blood Count Parameter in Patients With Nasopharyngeal Carcinoma. *Int. J. Nasopharyngeal Carcinoma* 2: 07–09. doi:10.32734/ijnpc.v2i01.3505
- Ruan, G.T., Ge, Y.Z., Xie, H.L., Hu, C.L., Zhang, Q., Zhang, X., et al., 2022. Association Between Systemic Inflammation and Malnutrition With Survival in Patients With Cancer Sarcopenia—A Prospective Multicenter Study. *Front. Nutr.* 8: 1–13. doi:10.3389/fnut.2021.811288
- Ryan, A.M., Reynolds, J. V., Healy, L., Byrne, M., Moore, J., Brannelly, N., et al., 2009. Enteral nutrition enriched with eicosapentaenoic acid (EPA) preserves lean body mass following esophageal cancer surgery: Results of a double-blinded randomized controlled trial. *Ann. Surg.* 249: 355–363. doi:10.1097/SLA.0b013e31819a4789
- Salucci, S., Bartoletti-stella, A., Bavelloni, A., Aramini, B., Blalock, W.L., Fabbri, F., et al., 2022. Extra

- Virgin Olive Oil (EVOO), a Mediterranean Diet Component, in the Management of Muscle Mass and Function Preservation. *Nutrients* 14: 1–16.
- Sánchez-lara, K., Turcott, J.G., Juárez-hernández, E., Nuñez-valencia, C., Villanueva, G., Guevara, P., et al., 2014. Effects of an oral nutritional supplement containing eicosapentaenoic acid on nutritional and clinical outcomes in patients with advanced non-small cell lung cancer: Randomised trial q. *Clin. Nutr.* 1–7. doi:10.1016/j.clnu.2014.03.006
- Sandoval-Ramírez, B.A., Catalán, Ú., Llauradó, E., Valls, R.M., Salamanca, P., Rubió, L., et al., 2022. The health benefits of anthocyanins: an umbrella review of systematic reviews and meta-analyses of observational studies and controlled clinical trials. *Nutr. Rev.* 80: 1515–1530. doi:10.1093/nutrit/nuab086
- Sangthawan, D., Phungrassami, T., & Sinkitjarurnchai, W., 2015. Effects of Zinc Sulfate Supplementation on Cell-Mediated Immune Response in Head and Neck Cancer Patients Treated with Radiation Therapy Effects of Zinc Sulfate Supplementation on Cell-Mediated Immune Response in Head and Neck Cancer Patients Treated wit. *Nutr. Cancer* 67: 449–456. doi:10.1080/01635581.2015.1004735
- Santaolalla, A., Sollie, S., Rislán, A., Josefs, D.H., Hammar, N., Walldius, G., et al., 2021. Association between serum markers of the humoral immune system and inflammation in the Swedish AMORIS study. *BMC Immunol.* 22: 1–12. doi:10.1186/s12865-021-00448-2
- Schofield, K.L., Thorpe, H., & Sims, S.T., 2019. Resting metabolic rate prediction equations and the validity to assess energy deficiency in the athlete population. *Exp. Physiol.* 104: 469–475. doi:10.1113/EP087512
- Schreiber, R.D., Old, L.J., & Smyth, M.J., 2011a. Cancer immunoediting: Integrating immunity's roles in cancer suppression and promotion. *Science (80-. )*. 331: 1565–1570. doi:10.1126/science.1203486
- Schreiber, R.D., Old, L.J., & Smyth, M.J., 2011b. Cancer Immunoediting: Integrating Immunity's Roles in Cancer Suppression and Promotion. *Science (80-. )*. 331: 1565–1570.
- Schueren, M.A.E. de van der, 2019. Use and effects of oral nutritional supplements in patients with cancer. *Nutrition* 67–68: 110550. doi:10.1016/j.nut.2019.07.002
- Schueren, M.A.E. de van der, Laviano, A., Blanchard, H., Jourdan, M., Arends, J., & Baracos, V.E., 2018. Systematic review and meta-analysis of the evidence for oral nutritional intervention on nutritional and clinical outcomes during chemo(radio)therapy: Current evidence and guidance for design of future trials. *Ann. Oncol.* 29: 1141–1153. doi:10.1093/annonc/mdy114
- Sciubba, J.J., & Goldenberg, D., 2006. Oral complications of radiotherapy. *Lancet Oncol* 7: 175–183.
- Segota, I., Li, Y., Elme, L., Long, T., Peterson, S.N., Ronai, Z.A., et al., 2020. Prebiotic-Induced Anti-tumor Immunity Attenuates Tumor Growth Article Prebiotic-Induced Anti-tumor Immunity Attenuates Tumor Growth. *Cell Rep.* 30: 1753–1766. doi:10.1016/j.celrep.2020.01.035
- Seguin, P., Locher, C., Boudjema, K., Hamon, C., Mouchel, C., Malledant, Y., et al., 2016. Effect of a Perioperative Nutritional Supplementation with Oral Impact® in Patients undergoing Hepatic Surgery for Liver Cancer: A Double-Blind Study. *Nutr. Cancer* 5581: 1–9. doi:10.1080/01635581.2016.1153670
- Shahid, S., 2016. Review of hematological indices of cancer patients receiving combined chemotherapy & radiotherapy or receiving radiotherapy alone. *Crit. Rev. Oncol. Hematol.* 105: 145–155. doi:10.1016/j.critrevonc.2016.06.001
- Sharif, N., Khoshnoudi-Nia, S., & Jafari, S.M., 2020. Nano/microencapsulation of anthocyanins; a systematic review and meta-analysis. *Food Res. Int.* 132: 109077. doi:10.1016/j.foodres.2020.109077
- Shi, M., Zhao, W., Zhou, F., Chen, H., Tang, L., Su, B., et al., 2020. Neutrophil or platelet-to-lymphocyte ratios in blood are associated with poor prognosis of pulmonary large cell neuroendocrine carcinoma. *Transl. Lung Cancer Res.* 9: 45–54. doi:10.21037/tlcr.2020.01.17
- Shi, N., Chen, X., & Chen, T., 2021. Anthocyanins in colorectal cancer prevention review. *Antioxidants* 10: 1–20. doi:10.3390/antiox10101600
- Sica, A., Allavena, P., & Mantovani, A., 2008. Cancer related inflammation: The macrophage connection. *Cancer Lett.* 264: 204–215. doi:10.1016/j.canlet.2008.03.028
- Siddiqui, F., Raben, D., Lu, J.J., Grecula, J.C., Lo, S.S., Mayr, N.A., et al., 2011. Emerging applications of stereotactic body radiation therapy for head and neck cancer. *Expert Rev. Anticancer Ther.* 11: 1429–1436.
- Sierzega, M., Szczepanek, K., Steinhoff-nowak, M., & Figula, K., 2011. Commercial Enteral Formulas and Nutrition Support Teams Improve the Outcome of Home Enteral Tube Feeding.
- Silva, J. de A.P., Trindade, E.B.S. de M., Fabre, M.E. de S., Menegotto, V.M., Gevaerd, S., Buss, Z. da S., et al., 2012a. Fish oil supplement alters markers of inflammatory and nutritional status in colorectal cancer patients. *Nutr. Cancer* 64: 267–273. doi:10.1080/01635581.2012.643133
- Silva, J. de A.P., Trindade, E.B.S. de M., Fabre, M.E. de S., Menegotto, V.M., Gevaerd, S., Buss, Z.

- da S., et al., 2012b. Fish Oil Supplement Alters Markers of Inflammatory and Nutritional Status in Colorectal Cancer Patients. *Nutr. Cancer* 64: 267–273. doi:10.1080/01635581.2012.643133
- Sim, E., Kim, J.M., Lee, S.M., Chung, M.J., Song, S.Y., Kim, E.S., et al., 2022. The effect of omega,3 enriched oral nutrition supplement on nutritional indices and quality of life in gastrointestinal cancer patients: a randomized clinical trial. *Asian Pacific J. Cancer Prev.* 23: 485–494. doi:10.31557/APJCP.2022.23.2.485
- Smyth, M.J., Dunn, G.P., & Schreiber, R.D., 2006. Cancer Immunosurveillance and Immunoediting : The Roles of Immunity in Suppressing Tumor Development and Shaping Tumor Immunogenicity. *Adv. Immunol.* 90: 1–36. doi:10.1016/S0065-2776(06)90001-7
- Soares, Jéssika D P, Howell, S.L., Teixeira, F.J., & Pimentel, G.D., 2020. Dietary Amino Acids and Immunonutrition Supplementation in Cancer-Induced Skeletal Muscle Mass Depletion : A Mini-Review Dietary Amino Acids and Immunonutrition Supplementation in Cancer-Induced Skeletal Muscle Mass Depletion : A Mini-Review. *Curr. Pharm. Des.* 26: 1–9. doi:10.2174/1381612826666200218100420
- Soares, Jessica D P, Howell, S.L., Teixeira, F.J., & Pimentel, G.D., 2020. Dietary Amino Acids and Immunonutrition Supplementation in Cancer-Induced Skeletal Muscle Mass Depletion: A Mini-Review. *Curr. Pharm. Des.* 26: 970–978. doi:10.2174/1381612826666200218100420
- Solak, B.B., & Akin, N., 2012. Health benefits of whey protein: a review. *J. Food Sci. Eng.* 2: 129–137. doi:10.17265/2159-5828/2012.03.001
- Sorensen, L.T.C.D., McCarthy, M., Baumgartner, M.A.J.B., & Demars, C.P.T.S., 2009. Perioperative immunonutrition in head and neck cancer. *Laryngoscope* 119: 1358–1364. doi:10.1002/lary.20494
- Sotirovic, J., Peric, A., Vojvodic, D., Baletic, N., Zaletel, I., Stanojevic, I., et al., 2017. Serum cytokine profile of laryngeal squamous cell carcinoma patients. *J. of Laryngology Otol.* 1–7. doi:10.1017/S0022215117000573
- Souza, M.T.P. de, Ozorio, G.A., Oliveira, G.N. de, Lopez, R.V.M., Alves-Almeida, M.M.F., Kulcsar, M.A.V., et al., 2022. Effect of age on resting energy expenditure in patients with cancer. *Nutrition* 102: 1–6. doi:10.1016/j.nut.2022.111740
- Souza, M.T.P., Singer, P., Ozorio, G.A., Rosa, V.M., Alves, M.M.F., Mendoza López, R.V., et al., 2018. Resting energy expenditure and body composition in patients with head and neck cancer: An observational study leading to a new predictive equation. *Nutrition* 51–52: 60–65. doi:10.1016/j.nut.2017.12.006
- Speck, R.M., Courneya, K.S., Mâsse, L.C., Duval, S., & Schmitz, K.H., 2010. An update of controlled physical activity trials in cancer survivors: A systematic review and meta-analysis. *J. Cancer Surviv.* 4: 87–100. doi:10.1007/s11764-009-0110-5
- Stableforth, W.D., Thomas, S., & Lewis, S.J.A., 2009. A systematic review of the role of immunonutrition in patients undergoing surgery for head and neck cancer. *Int. J. Oral Maxillofac. Surg* 38: 103–110. doi:10.1016/j.ijom.2008.12.008
- Stockmann, C., Doedens, A., Weidemann, A., Zhang, N., Takeda, N., Greenberg, J.I., et al., 2008. Deletion of vascular endothelial growth factor in myeloid cells accelerates tumorigenesis. *Nature* 456: 814–819. doi:10.1038/nature07445
- Stoiber, D., & Assinger, A., 2020. Platelet-Leukocyte Interplay in Cancer Development and Progression. *Cells* 9: 1–17.
- Strachan, S., 2010. Trace elements. *Curr. Anaesth. Crit. Care* 21: 44–48. doi:10.1016/j.cacc.2009.08.004
- Sugata, M., Lin, C.Y., & Shih, Y.C., 2015. Anti-Inflammatory and Anticancer Activities of Taiwanese Purple-Fleshed Sweet Potatoes (*Ipomoea batatas* L. Lam) Extracts. *Biomed Res. Int.* 2015. doi:10.1155/2015/768093
- Sunpaweravong, S., Puttawibul, P., Ruangsins, S., Laohawiriyakamol, S., Sunpaweravong, P., Sangthawan, D., et al., 2014. Randomized study of antiinflammatory and immune-modulatory effects of enteral immunonutrition during concurrent chemoradiotherapy for esophageal cancer. *Nutr. Cancer* 66: 1–5. doi:10.1080/01635581.2014.847473
- Susetyowati, Lestari, L.A., Setyopranoto, I., Astuti, H., & Wijayanti, P.M., 2019. Potential of local food-based enteral nutrition to improve patient's nutrition status in hospital in Yogyakarta, Indonesia. *J. Food Nutr. Res.* 7: 568–572. doi:10.12691/jfnr-7-8-3
- Susetyowati, S., Hadi, H., Asdie, A.H., & Hakimi, M., 2014. Penerapan algoritma proses asuhan gizi terstandar berbasis skrining gizi. *J. Gizi Klin. Indones.* 11: 20. doi:10.22146/ijcn.18880
- Susetyowati, S., Lestari, L.A., Astuti, H., Setyopranoto, I., & Probosuseno, P., 2020. Analisis Mikrobial dan Organoleptik Makanan Cair Instan Berbasis Pangan Lokal untuk Perbaikan Status Gizi Pasien. *Amerta Nutr* 225–230. doi:10.20473/amnt.v4i3.2020.225-230
- Swann, J.B., & Smyth, M.J., 2007. Review series Immune surveillance of tumors. *J. Clin. Invest.* 117: 1137–1146. doi:10.1172/JCI31405.antigens

- Syahbani, D.R.N., Islamanto, S.J.S., & Indriani, V., 2020. Hemoglobin Levels before and after Chemotherapy ( Cisplatin-Paclitaxel ) of Nasopharyngeal Cancer Patients at Prof . Dr . Margono Soekarjo Hospital. *Int. J. Nasopharyngeal Carcinoma* 02: 121–123. doi:10.32734/ijnpc.v2i04.4818
- Tagliabue, M., D'Ecclesiis, O., De Berardinis, R., Gaeta, A., Martinoli, C., Piana, A.F., et al., 2022. The prognostic role of sex and hemoglobin levels in patients with oral tongue squamous cell carcinoma. *Front. Oncol.* 12: 1–12. doi:10.3389/fonc.2022.1018886
- Talvas, J., Garrait, G., Goncalves-Mendes, N., Rouanet, J., Vergnaud-Gauduchon, J., Kwiatkowski, F., et al., 2015. Immunonutrition stimulates immune functions and antioxidant defense capacities of leukocytes in radiochemotherapy-treated head & neck and esophageal cancer patients: A double-blind randomized clinical trial. *Clin. Nutr.* 34: 810–817. doi:10.1016/j.clnu.2014.12.002
- Talwar, B., Donnelly, R., Skelly, R., & Donaldson, M., 2016. Nutritional management in head and neck cancer : United Kingdom National Multidisciplinary Guidelines. *J. of Laryngology Otol.* 130: 32–40. doi:10.1017/S0022215116000402
- Tan, C.S.Y., Read, J.A., Phan, V.H., Beale, P.J., Peat, J.K., & Clarke, S.J., 2015. The relationship between nutritional status, inflammatory markers and survival in patients with advanced cancer: a prospective cohort study. *Support. Care Cancer* 23: 385–391. doi:10.1007/s00520-014-2385-y
- Tan, S.E., Abdul Satar, N.F., & Majid, H.A., 2022. Effects of Immunonutrition in Head and Neck Cancer Patients Undergoing Cancer Treatment – A Systematic Review. *Front. Nutr.* 9. doi:10.3389/fnut.2022.821924
- Tang, P., Wang, H., Lin, H., Liu, W., & Chen, L., 2018. Body Composition Early Identifies Cancer Patients With Radiotherapy at Risk for Malnutrition. *J. Pain Symptom Manage.* 55: 864–871.
- Tao, X., Zhou, Q., & Rao, Z., 2022. Efficacy of  $\omega$  -3 Polyunsaturated Fatty Acids in Patients with Lung Cancer Undergoing Radiotherapy and Chemotherapy : A Meta-Analysis. *Int. J. Clin. Pract.* 2022: 1–11.
- Tauriello, F., Palomo-ponce, S., Stork, D., Berenguer-Illergo, A., Badia-ramentol, J., Iglesias, M., et al., 2018. TGF  $\beta$  drives immune evasion in genetically. *Nat. Publ. Gr.* 554: 538–543. doi:10.1038/nature25492
- Teixeira, F.J., Santos, H.O., Howell, S.L., & Pimentel, G.D., 2019. Whey protein in cancer therapy : A narrative review. *Pharmacol. Res.* 144: 245–256. doi:10.1016/j.phrs.2019.04.019
- Templeton, A.J., Mcnamara, M.G., Šeruga, B., Vera-badillo, F.E., Aneja, P., Ocaña, A., et al., 2014. Prognostic Role of Neutrophil-to-Lymphocyte Ratio in Solid Tumors : A Systematic Review and Meta-Analysis. *J Natl Cancer Inst* 106: 1–11. doi:10.1093/jnci/dju124
- Tepaske, R., 1997. immunonutrition. *Curr. Opin. Anaesthesiol.* 10: 86–91.
- Therdyothin, A., Phiphophatsanee, N., & Isanejad, M., 2023. The Effect of Omega-3 Fatty Acids on Sarcopenia: Mechanism of Action and Potential Efficacy. *Mar. Drugs* 21: 1–18. doi:10.3390/md21070399
- Thomasset, S., Berry, D.P., Cai, H., West, K., Marczylo, T.H., Marsden, D., et al., 2009. Pilot study of oral anthocyanins for colorectal cancer chemoprevention. *Cancer Prev. Res.* 2: 625–633. doi:10.1158/1940-6207.CAPR-08-0201
- Thompson, K.L., Elliott, L., Fuchs-Tarlovsky, V., Levin, R.M., Voss, A.C., & Piemonte, T., 2017. Oncology Evidence-Based Nutrition Practice Guideline for Adults. *J. Acad. Nutr. Diet.* 117: 297–310.e47. doi:10.1016/j.jand.2016.05.010
- Tisdale, M.J., 2009. Mechanisms of cancer cachexia. *Physiol. Rev.* 89: 381–410. doi:10.1152/physrev.00016.2008
- Tolentino, E.D.S., Centurion, B.S., Helena, L., Ferreira, C., De, A.P., Lq, L., et al., 2011. Oral adverse effects of head and neck radiotherapy : literature review and suggestion of a clinical oral care guideline for irradiated patients. *J Appl Oral Sci* 19: 448–454.
- Topping, K.P., Fletcher, L.M., Agada, F.O., Alhamarneh, O., Stafford, N.D., & Greenman, J., 2009. Head and neck tumour immunology : basic concepts and new clinical implications. *J. Laryngol. Otol.* 123: 9–18. doi:10.1017/S0022215108003368
- Trabal, J., Leyes, P., Forga, M., & Maurel, J., 2010. Potential usefulness of an EPA-enriched nutritional supplement on chemotherapy tolerability in cancer patients without overt malnutrition. *Nutr Hosp* 25: 736–740. doi:10.3305/nh.2010.25.5.4616
- Trichopoulos, D., Psaltopoulou, T., Orfanos, P., Trichopoulou, A., & Boffetta, P., 2006. Plasma C-Reactive Protein and Risk of Cancer : A Prospective Study from Greece. *Cancer Epidemiol Biomarkers Prev* 15: 381–4. doi:10.1158/1055-9965.EPI-05-0626
- Uí Dhuibhir, P., Collura, N., & Walsh, D., 2019. Complete Oral Nutritional Supplements: Dietitian Preferences and Clinical Practice. *J. Diet. Suppl.* 16: 40–50. doi:10.1080/19390211.2018.1428260

- Ulyarti, U., Lavlinesia, L., Nuzula, N., & Nazarudin, N., 2019. Sifat Fungsional Pati Ubi Kelapa Kuning (*Dioscorea alata*) dan Pemanfaatannya sebagai Pengental pada Saus Tomat. *agriTECH* 38: 235. doi:10.22146/agritech.30965
- Unal, D., Orhan, O., Eroglu, C., & Kaplan, B., 2013. Prealbumin is a more sensitive marker than albumin to assess the nutritional status in patients undergoing radiotherapy for head and neck cancer. *Wspolczesna Onkol.* 17: 276–280. doi:10.5114/wo.2013.35281
- Uster, A., Sc, M., D, U.R.R., D, M.R.R., D, M.P.M., D, M.S.M., et al., 2013. Influence of a nutritional intervention on dietary intake and quality of life in cancer patients: A randomized controlled trial. *Nutrition* 29: 1342–1349. doi:10.1016/j.nut.2013.05.004
- Valentini, V., Marazzi, F., Bossola, M., Micciché, F., Nardone, L., Balducci, M., et al., 2012. Nutritional counselling and oral nutritional supplements in head and neck cancer patients undergoing chemoradiotherapy. *J. Hum. Nutr. Diet.* 25: 201–208. doi:10.1111/j.1365-277X.2011.01220.x
- van der Meij, B.S., Langius, J.A.E., Smit, E.F., Spreeuwenberg, M.D., von Blomberg, B.M.E., Heijboer, A.C., et al., 2010. Oral Nutritional Supplements Containing (n-3) Polyunsaturated Fatty Acids Affect the Nutritional Status of Patients with Stage III Non-Small Cell Lung Cancer during Multimodality Treatment. *J. Nutr.* 140: 1774–1780. doi:10.3945/jn.110.121202
- Van Der Meij, B.S., Langius, J.A.E., Spreeuwenberg, M.D., Slootmaker, S.M., Paul, M.A., Smit, E.F., et al., 2012. Oral nutritional supplements containing n-3 polyunsaturated fatty acids affect quality of life and functional status in lung cancer patients during multimodality treatment: An RCT. *Eur. J. Clin. Nutr.* 66: 399–404. doi:10.1038/ejcn.2011.214
- Vasson, M.P., Talvas, J., Perche, O., Dillies, A.F., Bachmann, P., Pezet, D., et al., 2014. Immunonutrition improves functional capacities in head and neck and esophageal cancer patients undergoing radiochemotherapy: A randomized clinical trial. *Clin. Nutr.* 33: 204–210. doi:10.1016/j.clnu.2013.06.008
- Vaughan, V.C., Hassing, M.R., & Lewandowski, P.A., 2013. Marine polyunsaturated fatty acids and cancer therapy. *Br. J. Cancer* 108: 486–492. doi:10.1038/bjc.2012.586
- Victoria-Montesinos, D., García-Muñoz, A.M., Navarro-Marroco, J., Lucas-Abellán, C., Mercader-Ros, M.T., Serrano-Martínez, A., et al., 2023. Phase Angle, Handgrip Strength, and Other Indicators of Nutritional Status in Cancer Patients Undergoing Different Nutritional Strategies: A Systematic Review and Meta-Analysis. *Nutrients* 15: 1–14. doi:10.3390/nu15071790
- Vieira, S.A., McClements, D.J., & Decker, E.A., 2015. Challenges of utilizing healthy fats in foods. *Adv. Nutr.* 6: 309S–317S. doi:10.3945/an.114.006965
- Visser, K.E. De, Eichten, A., & Coussens, L.M., 2006. Paradoxical roles of the immune system during cancer development. *Nat. Rev. Cancer* 6: 24–37. doi:10.1038/nrc1782
- Vissink, A., Jansma, J., Spijkervet, F.K.L., Burlage, F.R., & Coppes, R.P., 2003. Oral Sequelae of Head and Neck Radiotherapy. *Crit Rev Oral Biol Med* 14: 199–212. doi:10.1177/154411130301400305
- Wagner, A.D., Oertelt-Prigione, S., Adjei, A., Buclin, T., Cristina, V., Csajka, C., et al., 2019. Gender medicine and oncology: Report and consensus of an ESMO workshop. *Ann. Oncol.* 30: 1914–1924. doi:10.1093/annonc/mdz414
- Wahyuni, S., 2019. Pengaruh Pemberian Air Jeruk Lemon Terhadap Kualitas Produk Nata de Coco. *Best J. (Biology Educ. Sains Technol.* 2: 42–47. doi:10.30743/best.v2i2.1817
- Wakita, M., Masui, H., Ichimaru, S., & Amagai, T., 2012. Determinant factors of the viscosity of enteral formulas: Basic analysis of thickened enteral formulas. *Nutr. Clin. Pract.* 27: 82–90. doi:10.1177/0884533611427146
- Wang, C.H., Ling, H.H., Liu, M.H., Pan, Y.P., Chang, P.H., Lin, Y.C., et al., 2022. Treatment-Interval Changes in Serum Levels of Albumin and Histidine Correlated with Treatment Interruption in Patients with Locally Advanced Head and Neck Squamous Cell Carcinoma Completing Chemoradiotherapy under Recommended Calorie and Protein Provision. *Cancers (Basel)*. 14. doi:10.3390/cancers14133112
- Wang, F., Hou, M.X., Wu, X.L., Bao, L.D., & Dong, P.D., 2015. Impact of enteral nutrition on postoperative immune function and nutritional status. *Genet. Mol. Res* 14: 6065–6072.
- Wang, H., Cao, G., & Prior, R.L., 1997. Oxygen Radical Absorbing Capacity of Anthocyanins. *J. Agric. Food Chem.* 45: 304–309. doi:10.1021/jf960421t
- Wang, L.-S., & Stoner, G.D., 2008. Anthocyanins and their role in cancer prevention. *Cancer Lett* 269: 281–290. doi:10.1038/jid.2014.371
- Wang, Y.C., Bohannon, R.W., Li, X., Sindhu, B., & Kapellusch, J., 2018. Hand-grip strength: Normative reference values and equations for individuals 18 to 85 years of age residing in the United States. *J. Orthop. Sports Phys. Ther.* 48: 685–693. doi:10.2519/jospt.2018.7851
- Wei, J., Wu, J., Meng, L., Zhu, B., Wang, H., Xin, Y., et al., 2020. Effects of early nutritional intervention on oral mucositis in patients with radiotherapy for head and neck cancer. *QJM An Int. J. Med.* 113: 37–42. doi:10.1093/qjmed/hcz222

- Werf, A. Van Der, Langius, J.A.E., Beeker, A., Tije, A.J., & Vulink, A.J., 2020. The effect of nutritional counseling on muscle mass and treatment outcome in patients with metastatic colorectal cancer undergoing chemotherapy: A randomized controlled trial. *Clin. Nutr.* 1–9. doi:10.1016/j.clnu.2020.01.009
- White, J. V., Guenter, P., Jensen, G., Malone, A., & Schofield, M., 2012. Consensus statement: Academy of nutrition and dietetics and American society for parenteral and enteral nutrition: Characteristics recommended for the identification and documentation of adult malnutrition (undernutrition). *J. Parenter. Enter. Nutr.* 36: 275–283. doi:10.1177/0148607112440285
- Wierdak, M., Surmiak, M., Milian-ciesielska, K., Rubinkiewicz, M., Rzepa, A., Wysocki, M., et al., 2021. Immunonutrition Changes Inflammatory Response in Colorectal Cancer: Results from a Pilot Randomized Clinical Trial. *Cancers (Basel)*. 13: 1–12.
- Wilkes, P.A., & Allen, D.H., 2018. Nutrition Care: Managing Symptoms From Cancer. *J. Nurse Pract.* 14: 267–275.e3. doi:10.1016/j.nurpra.2018.01.011
- Wilkinson, D.J., Piasecki, M., & Atherton, P.J., 2018. The age-related loss of skeletal muscle mass and function: Measurement and physiology of muscle fibre atrophy and muscle fibre loss in humans. *Ageing Res. Rev.* 47: 123–132. doi:10.1016/j.arr.2018.07.005
- Wisdom, A.J., Hong, C.S., Lin, A.J., Xiang, Y., Cooper, D.E., Zhang, J., et al., 2019. Neutrophils promote tumor resistance to radiation therapy. *Proc. Natl. Acad. Sci. U. S. A.* 116: 18584–18589. doi:10.1073/pnas.1901562116
- World Health Organization, 2021. Indonesia, Source: Globocan 2020. *Glob. Cancer Obs.*
- World Health Organization, 2019. Indonesia Source GLOBOCAN 2018. *Int. Agency Res. Cancer* 256: 1–2.
- Wu, H., Li, S., Lin, Y., Wang, J., Chekhonin, V.P., Peltzer, K., et al., 2022. Association between malnutrition and leucopenia in patients with osteosarcoma. *Front. Nutr.* 9: 1–11. doi:10.3389/fnut.2022.899501
- Wu, M., Lian, X.J., Jia, J.M., Cao, W.T., Yan, N., Xin, Y.M., et al., 2019. The role of the Patient-Generated Subjective Global Assessment (PG-SGA) and biochemical markers in predicting anemia patients with cancer. *Support. Care Cancer* 27: 1443–1448. doi:10.1007/s00520-018-4462-0
- Yang, L., Gao, J., Zhou, Y., Tao, Z., He, J., Yang, J., et al., 2020. Effect of Oral Nutritional Supplements on Patients with Esophageal Cancer During Radiotherapy. *Cancer Biother. Radiopharm.* 00: 1–6. doi:10.1089/cbr.2020.3888
- Yang, L., Huang, Y., Zhou, L., Dai, Y., & Hu, G., 2018. High pretreatment neutrophil-to-lymphocyte ratio as a predictor of poor survival prognosis in head and neck squamous cell carcinoma: A systematic review and meta-analysis. *Head Neck* 1–11. doi:10.1002/hed.25583
- Yang, Y., Liu, R., Ren, F., Guo, R., & Zhang, P., 2018. Prognostic and clinicopathological significance of neutrophil-to-lymphocyte ratio in patients with oral cancer: a meta-analysis. *Biosci Rep.* 2018; 38(6) 38. doi:10.1042/BSR20181550
- Yeh, K.Y., Wang, H.M., Chang, J.W.C., Huang, J.S., Lai, C.H., Lan, Y.J., et al., 2013. Omega-3 fatty acid-, micronutrient-, and probiotic-enriched nutrition helps body weight stabilization in head and neck cancer cachexia. *Oral Surg. Oral Med. Oral Pathol. Oral Radiol.* 116: 41–48. doi:10.1016/j.oooo.2013.01.015
- Yeh, S., 2010. Radiotherapy for Head and Neck Cancer. *Semin Plast Surg* 24: 127–136.
- Yu, J., Liu, L., Zhang, Y., Wei, J., & Yang, F., 2017. Effects of omega-3 fatty acids on patients undergoing surgery for gastrointestinal malignancy: A systematic review and meta-analysis. *BMC Cancer* 17: 1–9. doi:10.1186/s12885-017-3248-y
- Yusminingrum, W.T., Widajati, E., Kholidah, D., Kesehatan, P., & Malang, K., 2019. Gambaran Asuhan Gizi Pada Pasien Sirosis Hepatis Dengan Hematemesis Melena Di Rumah Sakit Umum Daerah Dr. Saiful Anwar Malang. *J. Inf. Kesehat. Indones.* 5: 79–101.
- Zanetti, M., Cappellari, G.G., Barazzoni, R., & Sanson, G., 2020. The Impact of Protein Supplementation Targeted at Improving Muscle Mass on Strength in Cancer Patients: A Scoping Review. *Nutrients* 12: 1–16.
- Zhang, Z., Zhu, Y., Ling, Y., Zhang, L., & Wan, H., 2016. Comparative effects of different enteral feeding methods in head and neck cancer patients receiving radiotherapy or chemoradiotherapy: A network meta-analysis. *Onco. Targets. Ther.* 9: 2897–2909. doi:10.2147/OTT.S101983
- Zhang, Z.F., Fan, S.H., Zheng, Y.L., Lu, J., Wu, D.M., Shan, Q., et al., 2009. Purple sweet potato color attenuates oxidative stress and inflammatory response induced by d-galactose in mouse liver. *Food Chem. Toxicol.* 47: 496–501. doi:10.1016/j.fct.2008.12.005
- Zhong, X., & Zimmers, T.A., 2020. Sex Differences in Cancer Cachexia. *Curr. Osteoporos. Rep.* 18: 646–654. doi:10.1007/s11914-020-00628-w
- Zhou, Y., Zheng, J., Li, Y., Xu, D., Li, S., Chen, Y., et al., 2016. Natural Polyphenols for Prevention

- and Treatment of Cancer. *Nutrients* 8: 1–35. doi:10.3390/nu8080515
- Zhu, Y., Si, W., Sun, Q., Qin, B., Zhao, W., & Yang, J., 2017. Platelet-lymphocyte ratio acts as an indicator of poor prognosis in patients with breast cancer. *Oncotarget* 8: 1023–1030. doi:10.18632/oncotarget.13714
- Zhu, Y., Vanga, S.K., Wang, J., & Raghavan, V., 2018. Impact of food processing on the structural and allergenic properties of egg white. *Trends Food Sci. Technol.* 78: 188–196. doi:10.1016/j.tifs.2018.06.005
- Ziętarska, M., Krawczyk-Lipiec, J., Kraj, L., Zaucha, R., & Małgorzewicz, S., 2017. Chemotherapy-related toxicity, nutritional status and quality of life in precachectic oncologic patients with, or without, high protein nutritional support. A prospective, randomized study. *Nutrients* 9. doi:10.3390/nu9101108
- Zitvogel, L., Apetoh, L., Ghiringhelli, F., & Kroemer, G., 2008. Immunological aspects of cancer chemotherapy. *Nat. Rev. Immunol.* 8: 59–73. doi:10.1038/nri2216