

## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References

Adams RL, Broughton KS. Insulinotropic effects of whey: mechanisms of action, recent clinical trials, and clinical applications. *Ann Nutr Metab.* 2016;69(1):56-63.

Adiamah A, Skorepa P, Weimann A, Lobo DN. The Impact of Preoperative Immune Modulating Nutrition on Outcomes in Patients Undergoing Surgery for Gastrointestinal Cancer: A Systematic Review and Meta-analysis. *Ann Surg.* 2019.

Arends J, Bachmann P, Baracos V, et al. ESPEN guidelines on nutrition in cancer patients. *Clin Nutr.* 2017;36(1):11-48.

Arner P. Lipases in cachexia. *Science.* 2011;333(6039):163-164.

Aune D, Keum N, Giovannucci E, et al. Whole grain consumption and risk of cardiovascular disease, cancer, and all cause and cause specific mortality: systematic review and dose-response meta-analysis of prospective studies. *Brit Med J.* 2016;353:i2716.

Bach J-F. The effect of infections on susceptibility to autoimmune and allergic diseases. *New Eng J Med.* 2002;347(12):911-920.

Bach J-F. The hygiene hypothesis in autoimmunity: the role of pathogens and commensals. *Nat Rev Immunol.* 2018;18(2):105.

Baracos V. Clinical trials of cancer cachexia therapy, now and hereafter. *J Clin Oncol.* 2013;31(10):1257.

Baracos VE, Martin L, Korc M, Guttridge DC, Fearon KC. Cancer-associated cachexia. *Nat Rev Dis Primers.* 2018;4:17105.

Baum J, Kim I-Y, Wolfe R. Protein consumption and the elderly: what is the optimal level of intake? *Nutrients.* 2016;8(6):359.

Berg A, Rooyackers O, Bellander B-M, Wernerman J. Whole body protein kinetics during hypocaloric and normocaloric feeding in critically ill patients. *Crit Care.* 2013;17(4):R158.

Calle EE, Rodriguez C, Walker-Thurmond K, Thun MJ. Overweight, obesity, and mortality from cancer in a prospectively studied cohort of US adults. *New Eng J Med.* 2003;348(17):1625-1638.

Carter ME, Soden ME, Zweifel LS, Palmiter RD. Genetic identification of a neural circuit that suppresses appetite. *Nature.* 2013;503(7474):111.

## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References Continued

Compher C, Chittams J, Sammarco T, Nicolo M, Heyland DK. Greater protein and energy intake may be associated with improved mortality in higher risk critically ill patients: a multicenter, multinational observational study. *Crit Care Med*. 2017;45(2):156-163.

Coussens LM, Werb Z. Inflammation and cancer. *Nature*. 2002;420(6917):860.

Dalli J, Colas RA, Quintana C, et al. Human sepsis eicosanoid and pro-resolving lipid mediator temporal profiles: correlations with survival and clinical outcomes. *Crit Care Med*. 2017;45(1):58.

Davies R, Carson B, Jakeman P. The effect of whey protein supplementation on the temporal recovery of muscle function following resistance training: A systematic review and meta-analysis. *Nutrients*. 2018;10(2):221.

de van der Schueren MA, Laviano A, Blanchard H, Jourdan M, Arends J, Baracos V. 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*. 2018;29(5):1141-1153.

Del Valle HB, Yaktine AL, Taylor CL, Ross AC. Dietary reference intakes for calcium and vitamin D. National Academies Press; 2011.

Deutz NE, Ashurst I, Ballesteros MD, et al. The Underappreciated Role of Low Muscle Mass in the Management of Malnutrition. *J Am Med Dir Assoc*. 2019;20(1):22-27.

Deutz NE, Wolfe RR. Is there a maximal anabolic response to protein intake with a meal? *Clin Nutr*. 2013;32(2):309-313.

Di Sebastiano KM, Murthy G, Campbell KL, Desroches S, Murphy RA. Nutrition and Cancer Prevention: Why is the Evidence Lost in Translation? *Adv Nutr*. 2019;10(3):410-418.

Drover JW, Dhaliwal R, Weitzel L, Wischmeyer PE, Ochoa JB, Heyland DK. Perioperative use of arginine-supplemented diets: a systematic review of the evidence. *J Am Col Surgeons*. 2011;212(3):385-399. e381.

Eltweri A, Thomas A, Metcalfe M, Calder P, Dennison A, Bowrey D. Potential applications of fish oils rich in omega-3 polyunsaturated fatty acids in the management of gastrointestinal cancer. *Clin Nutr*. 2017;36(1):65-78.

Fearon KC. Cancer cachexia and fat-muscle physiology. *New Eng J Med*. 2011;365(6):565-567.

## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References Continued

Fearon K, Arends J, Baracos V. Understanding the mechanisms and treatment options in cancer cachexia. *Nat Rev Clin Oncol*. 2013;10(2):90.

Fearon K, Strasser F, Anker SD, et al. Definition and classification of cancer cachexia: an international consensus. *Lancet Oncol*. 2011;12(5):489-495.

Gibson DJ, Burden ST, Strauss BJ, Todd C, Lal S. The role of computed tomography in evaluating body composition and the influence of reduced muscle mass on clinical outcome in abdominal malignancy: a systematic review. *Eur J Clin Nutr*. 2015;69(10):1079.

Gray SR, Mittendorfer B. Fish oil-derived n-3 polyunsaturated fatty acids for the prevention and treatment of sarcopenia. *Curr Opin Clin Nutr*. 2018;21(2):104-109.

Greene ER, Huang S, Serhan CN, Panigrahy D. Regulation of inflammation in cancer by eicosanoids. *Prostag Oth Lipid M*. 2011;96(1-4):27-36.

Ham DJ, Lynch GS, Koopman R. Amino acid sensing and activation of mechanistic target of rapamycin complex 1: implications for skeletal muscle. *Curr Opin Clin Nutr*. 2016;19(1):67-73.

Hickmann CE, Castanares-Zapatero D, Deldicque L, et al. Impact of very early physical therapy during septic shock on skeletal muscle: a randomized controlled trial. *Crit Care Med*. 2018;46(9):1436.

Hsu J-Y, Crawley S, Chen M, et al. Non-homeostatic body weight regulation through a brainstem-restricted receptor for GDF15. *Nature*. 2017;550(7675):255.

Hsu MY, Porporato PE, Wyart E. Assessing Metabolic Dysregulation in Muscle During Cachexia. In: *Cancer Metabolism*. Springer; 2019:337-352.

Hurt RT, McClave SA, Martindale RG, et al. Summary points and consensus recommendations from the International Protein Summit. *Nutr Clin Pract*. 2017;32(1\_suppl):142S-151S.

Israël M, Schwartz L. The metabolic advantage of tumor cells. *Mol Cancer*. 2011;10(1):70.

Jung B, Nougaret S, Conseil M, et al. Sepsis Is Associated with a Preferential Diaphragmatic Atrophy A Critically Ill Patient Study Using Tridimensional Computed Tomography. *Anesthesiology*. 2014;120(5):1182-1191.

Kamp DW, Shacter E, Weitzman SA. Chronic Inflammation and Cancer: The Role of the Mitochondria: Page 2 of 3. *Oncology*. 2011;25(5).

## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References Continued

Kirk PS, Friedman JF, Cron DC, et al. One-year postoperative resource utilization in sarcopenic patients. *J Surg Res.* 2015;199(1):51-55.

Laviano A, Di Lazzaro L, Koverech A. Nutrition support and clinical outcome in advanced cancer patients. *P Nutr Soc.* 2018;77(4):388-393.

Laviano A, Koverech A, Mari A. Cachexia: clinical features when inflammation drives malnutrition. *P Nutr Soc.* 2015;74(4):348-354.

Laviano A, Rianda S, Molfino A, Fanelli FR. Omega-3 fatty acids in cancer. *Curr Opin Clin Nutr.* 2013;16(2):156-161.

Laviano A, Rossi Fanelli F. Toxicity in chemotherapy—when less is more. *New Eng J Med.* 2012;366(24):2319-2320.

Lee C, Raffaghello L, Brandhorst S, et al. Fasting cycles retard growth of tumors and sensitize a range of cancer cell types to chemotherapy. *Sci Transl Med.* 2012;4(124):124ra127-124ra127.

Liberti MV, Locasale JW. The Warburg effect: how does it benefit cancer cells? *Trends Biochem Sci.* 2016;41(3):211-218.

Liebau F, Norberg Å, Rooyackers O. Does feeding induce maximal stimulation of protein balance? *Curr Opin Clin Nutr.* 2016;19(2):120-124.

Liebau F, Wernerman J, Van Loon LJ, Rooyackers O. Effect of initiating enteral protein feeding on whole-body protein turnover in critically ill patients. *Am J Clin Nutr.* 2015;101(3):549-557.

Lira FS, Yamashita AS, Rosa JC, et al. Hypothalamic inflammation is reversed by endurance training in anorectic-cachectic rats. *Nutr Metab.* 2011;8(1):60.

Longo VD, Mattson MP. Fasting: molecular mechanisms and clinical applications. *Cell Metab.* 2014;19(2):181-192.

Magne H, Savary-Auzeloux I, Rémond D, Dardevet D. Nutritional strategies to counteract muscle atrophy caused by disuse and to improve recovery. *Nutr Res Rev.* 2013;26(2):149-165.

Marimuthu K, Varadhan KK, Ljungqvist O, Lobo DN. A meta-analysis of the effect of combinations of immune modulating nutrients on outcome in patients undergoing major open gastrointestinal surgery. *Ann Surg.* 2012;255(6):1060-1068.

## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References Continued

Mattson MP, Longo VD, Harvie M. Impact of intermittent fasting on health and disease processes. *Ageing Res Rev.* 2017;39:46-58.

Mazaki T, Ishii Y, Murai I. Immunoenhancing Enteral and Parenteral Nutrition for Gastrointestinal Surgery. 2014.

McClave SA, Martindale RG, Vanek VW, et al. Guidelines for the provision and assessment of nutrition support therapy in the adult critically ill patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (ASPEN). *JPEN J Parenter Enteral Nutr.* 2009;33(3):277-316.

Moisey LL, Mourtzakis M, Cotton BA, et al. Skeletal muscle predicts ventilator-free days, ICU-free days, and mortality in elderly ICU patients. *Crit Care.* 2013;17(5):R206.

Moore DR, Churchward-Venne TA, Witard O, et al. Protein ingestion to stimulate myofibrillar protein synthesis requires greater relative protein intakes in healthy older versus younger men. *J Gerontol A-Biol.* 2014;70(1):57-62.

Morowitz MJ, Babrowski T, Carlisle EM, et al. The human microbiome and surgical disease. *Ann Surg.* 2011;253(6):1094.

Murphy R, Yeung E, Mazurak V, Mourtzakis M. Influence of eicosapentaenoic acid supplementation on lean body mass in cancer cachexia. *Brit J Cancer.* 2011;105(10):1469.

Nabuco H, Tomeleri C, Sugihara Junior P, et al. Effects of whey protein supplementation pre-or post-resistance training on muscle mass, muscular strength, and functional capacity in pre-conditioned older women: a randomized clinical trial. *Nutrients.* 2018;10(5):563.

Okumura S, Kaido T, Hamaguchi Y, et al. Impact of preoperative quality as well as quantity of skeletal muscle on survival after resection of pancreatic cancer. *Surgery.* 2015;157(6):1088-1098.

O'Leary JP, Tabuenca A, Capote LR. The physiologic basis of surgery. Lippincott Williams & Wilkins; 2008. Osland E, Hossain MB, Khan S, Memon MA. Effect of timing of pharmaconutrition (immunonutrition) administration on outcomes of elective surgery for gastrointestinal malignancies: a systematic review and meta-analysis. *JPEN J Parenter Enteral Nutr.* 2014;38(1):53-69.

Parent BA, Seaton M, Djukovic D, et al. Parenteral and enteral nutrition in surgical critical-care: plasma metabolomics demonstrates divergent effects on nitrogen, fatty-acid, ribonucleotide and oxidative metabolism. *J Trauma Acute Care.* 2017;82(4):704.

## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References Continued

Patel BK, Pohlman AS, Hall JB, Kress JP. Impact of early mobilization on glycemic control and ICU-acquired weakness in critically ill patients who are mechanically ventilated. *Chest*. 2014;146(3):583-589.

Pedersen L, Idorn M, Olofsson GH, et al. Voluntary running suppresses tumor growth through epinephrine- and IL-6-dependent NK cell mobilization and redistribution. *Cell Metab*. 2016;23(3):554-562.

Penet M-F, Bhujwala ZM. Cancer cachexia, recent advances, and future directions. *Cancer J*. 2015;21(2):117.

Peng P, Hyder O, Firoozmand A, et al. Impact of sarcopenia on outcomes following resection of pancreatic adenocarcinoma. *J Gastrointest Surg*. 2012;16(8):1478-1486.

Plank LD, Hill GL. Sequential metabolic changes following induction of systemic inflammatory response in patients with severe sepsis or major blunt trauma. *World J Surg*. 2000;24(6):630-638.

Poff A, Koutnik AP, Egan KM, Sahebjam S, D'Agostino D, Kumar NB. Targeting the Warburg effect for cancer treatment: Ketogenic diets for management of glioma. *Seminars in Cancer Biology* 2017.

Potter M, Newport E, Morten KJ. The Warburg effect: 80 years on. *Biochem Soc T*. 2016;44(5):1499-1505.

Prado CM, Lieffers JR, McCargar LJ, et al. Prevalence and clinical implications of sarcopenic obesity in patients with solid tumours of the respiratory and gastrointestinal tracts: a population-based study. *Lancet Oncol*. 2008;9(7):629-635.

Prado CM, Purcell SA, Alish C, et al. Implications of low muscle mass across the continuum of care: a narrative review. *Ann Med*. 2018;50(8):675-693.

Prevete N, Liotti F, Amoresano A, Pucci P, de Paulis A, Melillo RM. New perspectives in cancer: Modulation of lipid metabolism and inflammation resolution. *Pharmacol Res*. 2018;128:80-87.

Puthuchery ZA, Rawal J, McPhail M, et al. Acute skeletal muscle wasting in critical illness. *J Am Med Assoc*. 2013;310(15):1591-1600.

Ravasco P, Monteiro-Grillo I, Camilo M. Individualized nutrition intervention is of major benefit to colorectal cancer patients: long-term follow-up of a randomized controlled trial of nutritional therapy. *Am J Clin Nutr*. 2012;96(6):1346-1353.

Ravasco P, Monteiro-Grillo I, Vidal PM, Camilo ME. Cancer: disease and nutrition are key determinants of patients' quality of life. *Support Care Cancer*. 2004;12(4):246-252.



## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References Continued

Rehal MS, Liebau F, Tjäder I, Norberg Å, Rooyackers O, Wernerman J. A supplemental intravenous amino acid infusion sustains a positive protein balance for 24 hours in critically ill patients. *Crit Care*. 2017;21(1):298.

Reynolds A, Mann J, Cummings J, Winter N, Mete E, Te Morenga L. Carbohydrate quality and human health: a series of systematic reviews and meta-analyses. *Lancet*. 2019;393(10170):434-445.

Rooyackers O, Kouček-Zadeh R, Tjäder I, Norberg Å, Klaude M, Wernerman J. Whole body protein turnover in critically ill patients with multiple organ failure. *Clin Nutr*. 2015;34(1):95-100.

Rudrappa SS, Wilkinson DJ, Greenhaff PL, Smith K, Idris I, Atherton PJ. Human skeletal muscle disuse atrophy: effects on muscle protein synthesis, breakdown, and insulin resistance—a qualitative review. *Frontiers Physiol*. 2016;7:361.

Samant SA, Pillai V, Gupta M. Cellular mechanisms promoting cachexia and how they are opposed by sirtuins. *Can J Physiol Pharm*. 2019;97(4):235-245.

Schaller MS, Zahner GJ, Gasper WJ, et al. Relationship between the omega-3 index and specialized pro-resolving lipid mediators in patients with peripheral arterial disease taking fish oil supplements. *J Clin Lipidol*. 2017;11(5):1289-1295.

Schultz C, Meier M, Schmid H-P. Nutrition, dietary supplements and adenocarcinoma of the prostate. *Maturitas*. 2011;70(4):339-342.

Serhan CN. Treating inflammation and infection in the 21st century: new hints from decoding resolution mediators and mechanisms. *FASEB J*. 2017;31(4):1273-1288.

Serhan CN, Chiang N, Dalli J. New pro-resolving n-3 mediators bridge resolution of infectious inflammation to tissue regeneration. *Mol Aspects Med*. 2018;64:1-17.

Serhan CN, Levy BD. Resolvins in inflammation: emergence of the pro-resolving superfamily of mediators. *J Clin Invest*. 2018;128(6).

Shirai Y, Okugawa Y, Hishida A, et al. Fish oil-enriched nutrition combined with systemic chemotherapy for gastrointestinal cancer patients with cancer cachexia. *Sci Rep*. 2017;7(1):4826.

Shils ME, Shike M. Modern nutrition in health and disease. Lippincott Williams & Wilkins; 2006.

Suerbaum S, Michetti P. Helicobacter pylori infection. *New Eng J Med*. 2002;347(15):1175-1186.

## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References Continued

Sulciner ML, Serhan CN, Gilligan MM, et al. Resolvins suppress tumor growth and enhance cancer therapy. *J Exp Med*. 2018;215(1):115-140.

Suzuki H, Asakawa A, Amitani H, Nakamura N, Inui A. Cancer cachexia—pathophysiology and management. *J Gastroenterol*. 2013;48(5):574-594.

Thacher TD, Clarke BL. Vitamin D insufficiency. *Mayo Clinic Proceedings*. 2011;86(1):50.

Ticinesi A, Lauretani F, Milani C, et al. Aging gut microbiota at the cross-road between nutrition, physical frailty, and sarcopenia: is there a gut–muscle axis? *Nutrients*. 2017;9(12):1303.

Uno H, Furukawa K, Suzuki D, et al. Immunonutrition suppresses acute inflammatory responses through modulation of resolvin E1 in patients undergoing major hepatobiliary resection. *Surgery*. 2016;160(1):228-236.

van Vliet S, Burd NA, van Loon LJ. The skeletal muscle anabolic response to plant-versus animal-based protein consumption. *J Nutr*. 2015;145(9):1981-1991.

Varian BJ, Goureshetti S, Poutahidis T, et al. Beneficial bacteria inhibit cachexia. *Oncotarget*. 2016;7(11):11803.

Von Haehling S, Anker SD. Treatment of cachexia: an overview of recent developments. *Int J Cardiol*. 2015;184:736-742.

Verbruggen SC, Coss-Bu J, Wu M, et al. Current recommended parenteral protein intakes do not support protein synthesis in critically ill septic, insulin-resistant adolescents with tight glucose control. *Crit Care Med*. 2011;39(11):2518-2525.

Weijs PJ, Looijaard WG, Beishuizen A, Girbes AR, Oudemans-van Straaten HM. Early high protein intake is associated with low mortality and energy overfeeding with high mortality in non-septic mechanically ventilated critically ill patients. *Crit Care*. 2014;18(6):701.

Wollersheim T, Woehlecke J, Krebs M, et al. Dynamics of myosin degradation in intensive care unit-acquired weakness during severe critical illness. *Intens Care Med*. 2014;40(4):528-538.

Wu S, Feng B, Li K, et al. Fish consumption and colorectal cancer risk in humans: a systematic review and meta-analysis. *Am J Med*. 2012;125(6):551-559. e555.

Zitvogel L, Pietrocola F, Kroemer G. Nutrition, inflammation and cancer. *Nat Immunol*. 2017;18(8):843.



## Nutrition in Cancer Therapy: Opportunities for Prevention and Treatment

### References Continued

Zong G, Gao A, Hu FB, Sun Q. Whole grain intake and mortality from all causes, cardiovascular disease, and cancer: a meta-analysis of prospective cohort studies. *Circulation*. 2016;133(24):2370-2380.

Zusman O, Theilla M, Cohen J, Kagan I, Bendavid I, Singer P. Resting energy expenditure, calorie and protein consumption in critically ill patients: a retrospective cohort study. *Crit Care*. 2016;20(1):367.