

## DAFTAR PUSTAKA

- Arnold, A. R., & Chassaing, B. (2019). Maltodextrin, Modern Stressor of the Intestinal Environment. *CMGH*, 7(2), 475–476. <https://doi.org/10.1016/j.jcmgh.2018.09.014>
- Awad, S., Varadhan, K. K., Ljungqvist, O., & Lobo, D. N. (2013). A meta-analysis of randomised controlled trials on preoperative oral carbohydrate treatment in elective surgery. *Clinical Nutrition*, 32(1), 34–44. <https://doi.org/10.1016/j.clnu.2012.10.011>
- Bednarski, D., & Krzych, Ł. J. (2025). Perioperative glycemic control in patients undergoing cardiac surgery. In *Kardiochirurgia i Torakochirurgia Polska* (Vol. 22, Issue 1, pp. 44–52). Termedia Publishing House Ltd. <https://doi.org/10.5114/kitp.2025.148548>
- Berhe, Y. W., Gebregzi, A. H., & Endalew, N. S. (2017). Guideline on peri-operative glycemic control for adult patient with diabetic mellitus: Resource limited areas. *International Journal of Surgery Open*, 9, 1–6. <https://doi.org/10.1016/j.ijso.2017.07.001>
- Canelli, R., Louca, J., Gonzalez, M., Sia, M., Baker, M. B., Varghese, S., Dienes, E., & Bilotta, F. (2024). Preoperative Carbohydrate Load Does Not Alter Glycemic Variability in Diabetic and Non-Diabetic Patients Undergoing Major Gynecological Surgery: A Retrospective Study. *Journal of Clinical Medicine*, 13(16). <https://doi.org/10.3390/jcm13164704>
- Chandel, N. S. (2021). Carbohydrate metabolism. *Cold Spring Harbor Perspectives in Biology*, 13(1), 1–15. <https://doi.org/10.1101/cshperspect.a040568>
- Chang, S., Xu, M., Wang, Y., & Zhang, Y. (2023). Acute Glycemic Variability and Early Outcomes after Cardiac Surgery: A Meta-Analysis. *Hormone and Metabolic Research*, 55(11), 771–780. <https://doi.org/10.1055/a-2106-5539>
- Clement, K. C., Suarez-Pierre, A., Sebestyen, K., Alejo, D., DiNatale, J., Whitman, G. J. R., Matthew, T. L., & Lawton, J. S. (2019). Increased Glucose Variability Is Associated With Major Adverse Events After Coronary Artery Bypass. *Annals of Thoracic Surgery*, 108(5), 1307–1313. <https://doi.org/10.1016/j.athoracsur.2019.06.046>

- Desalegn, M., Shitemaw, T., Sitot, M., & Getachew, L. (2022). Magnitude and associated factors of postoperative hyperglycemia among an adult nondiabetic patient who underwent surgery at 2 tertiary hospitals in Ethiopia. *International Journal of Surgery: Global Health*, 5(5), e86–e86. <https://doi.org/10.1097/gh9.0000000000000086>
- Duggan, E. W., Carlson, K., & Umpierrez, G. E. (2017). Perioperative Hyperglycemia Management: An Update. *Anesthesiology*, 126(3), 547–560. <https://doi.org/10.1097/ALN.0000000000001515>
- Feldheiser, A., Aziz, O., Baldini, G., Cox, B. P. B. W., Fearon, K. C. H., Feldman, L. S., Gan, T. J., Kennedy, R. H., Ljungqvist, O., Lobo, D. N., Miller, T., Radtke, F. F., Ruiz Garces, T., Schricker, T., Scott, M. J., Thacker, J. K., Ytrebø, L. M., & Carli, F. (2016). Enhanced Recovery After Surgery (ERAS) for gastrointestinal surgery, part 2: Consensus statement for anaesthesia practice. In *Acta Anaesthesiologica Scandinavica* (Vol. 60, Issue 3, pp. 289–334). <https://doi.org/10.1111/aas.12651>
- Frontoni, S., Di Bartolo, P., Avogaro, A., Bosi, E., Paolisso, G., & Ceriello, A. (2013). Glucose variability: An emerging target for the treatment of diabetes mellitus. *Diabetes Research and Clinical Practice*, 102(2), 86–95. <https://doi.org/10.1016/j.diabres.2013.09.007>
- Garg, R., Grover, A., McGurk, S., & Rawn, J. D. (2013). Predictors of hyperglycemia after cardiac surgery in nondiabetic patients. *Journal of Thoracic and Cardiovascular Surgery*, 145(4), 1083–1087. <https://doi.org/10.1016/j.jtcvs.2012.07.089>
- Gómez, A. M., Muñoz, O. M., Marin, A., Fonseca, M. C., Rondon, M., Robledo Gómez, M. A., Sanko, A., Lujan, D., García-Jaramillo, M., & León Vargas, F. M. (2018). Different Indexes of Glycemic Variability as Identifiers of Patients with Risk of Hypoglycemia in Type 2 Diabetes Mellitus. *Journal of Diabetes Science and Technology*, 12(5), 1007–1015. <https://doi.org/10.1177/1932296818758105>
- Gonzalez, J. T., & Betts, J. A. (2019). Dietary sugars, exercise and hepatic carbohydrate metabolism. *Proceedings of the Nutrition Society*, 78(2), 246–256. <https://doi.org/10.1017/S0029665118002604>

- Gümüs, K., Pirhan, Y., Aydın, G., Keloglan, S., Tasova, V., & Kahveci, M. (2021). The Effect of Preoperative Oral Intake of Liquid Carbohydrate on Postoperative Stress Parameters in Patients Undergoing Laparoscopic Cholecystectomy: An Experimental Study. *Journal of Perianesthesia Nursing*, 36(5), 526–531. <https://doi.org/10.1016/j.jopan.2020.10.012>
- Guntero, V. A., Peralta, M., Noriega, P., Kneeteman, M. N., & Ferretti, C. A. (2020). One-Pot Selective Functionalization of Polysaccharides with Urea. *The 24th International Electronic Conference on Synthetic Organic Chemistry*, 74. <https://doi.org/10.3390/ecsoc-24-08346>
- Guntero, V. A., Peralta, M., Noriega, P., Kneeteman, M. N., & Ferretti, C. A. (2021). *One-Pot Selective Functionalization of Polysaccharides with Urea*. 74. <https://doi.org/10.3390/ECSOC-24-08346>
- Hofman, D. L., van Buul, V. J., & Brouns, F. J. P. H. (2016). Nutrition, Health, and Regulatory Aspects of Digestible Maltodextrins. *Critical Reviews in Food Science and Nutrition*, 56(12), 2091–2100. <https://doi.org/10.1080/10408398.2014.940415>
- Hosseini, S., Vahdat Shariatpanahi, Z., Maleki, M., Noohi, F., Totonchi, Z., Mahdih, N., & Hosseini, S. (2022). Insulin Resistance and Carbohydrate Loading Insulin Resistance Improvement After Cardiac Surgery by Preoperative Carbohydrate Loading: A Randomized Controlled Trial. In *Iranian Heart Journal* (Vol. 23, Issue 3).
- Kotfis, K., Jamioł-Milc, D., Skonieczna-żydecka, K., Folwarski, M., & Stachowska, E. (2020). The effect of preoperative carbohydrate loading on clinical and biochemical outcomes after cardiac surgery: A systematic review and meta-analysis of randomized trials. *Nutrients*, 12(10), 1–21. <https://doi.org/10.3390/nu12103105>
- Lai, Y., Cai, Y., Ding, Z., Huang, C., Luo, Z., & Zhou, Z. (2025). Effect of Preoperative Carbohydrate Loading on Postoperative Recovery of Individuals Who Have Type 2 Diabetes After Total Knee Arthroplasty: A Randomized Controlled Trial. *Journal of Arthroplasty*, 40(3), 665–671. <https://doi.org/10.1016/j.arth.2024.09.016>

- Lalasa, P., Vishal Gupta, N., Raghunandan, H. V., Prathusha, P. L., & Athkuri, K. (2013). A review on applications of GAMP -5 in pharmaceutical industries. *International Journal of Drug Development and Research*, 5(3), 4–16.
- Lazar, S., Ionita, I., Reurean-Pintilei, D., & Timar, B. (2024). How to Measure Glycemic Variability? A Literature Review. *Medicina (Lithuania)*, 60(1). <https://doi.org/10.3390/medicina60010061>
- Lee, B., Kim, S. Y., Cho, B., & Suh, S. (2022). Preoperative Carbohydrate Drink Intake Increases Glycemic Variability in Patients with Type 2 Diabetes Mellitus in Total Joint Arthroplasty: A Prospective Randomized Trial. *World Journal of Surgery*, 46. <https://doi.org/10.1007/s00268-021-06437-1>
- Lin, M. W., Chen, C. I., Cheng, T. T., Huang, C. C., Tsai, J. W., Feng, G. M., Hwang, T. Z., & Lam, C. F. (2021). Prolonged preoperative fasting induces postoperative insulin resistance by er-stress mediated glut4 down-regulation in skeletal muscles. *International Journal of Medical Sciences*, 18(5), 1189–1197. <https://doi.org/10.7150/ijms.52701>
- Liu, B., Wang, Y., Liu, S., Zhao, T., Zhao, B., Jiang, X., Ye, L., Zhao, L., Lv, W., Zhang, Y., Zheng, T., Xue, Y., Chen, L., Chen, L., Wu, Y., Li, Z., Yan, J., Wang, S., Sun, X., ... He, S. (2019). A randomized controlled study of preoperative oral carbohydrate loading versus fasting in patients undergoing elective craniotomy. *Clinical Nutrition*, 38(5), 2106–2112. <https://doi.org/https://doi.org/10.1016/j.clnu.2018.11.008>
- Long, C. A., Fang, Z. B., Hu, F. Y., Arya, S., Brewster, L. P., Duggan, E., & Duwayri, Y. (2019). Poor glycemic control is a strong predictor of postoperative morbidity and mortality in patients undergoing vascular surgery. *Journal of Vascular Surgery*, 69(4), 1219–1226. <https://doi.org/10.1016/j.jvs.2018.06.212>
- Mo, Y., Lu, J., & Zhou, J. (2024). Glycemic variability: Measurement, target, impact on complications of diabetes and does it really matter? *Journal of Diabetes Investigation*, 15(1), 5–14. <https://doi.org/10.1111/jdi.14112>
- Moorthy, V., Sim, M. A., Liu, W., Chew, S. T. H., Ti, L. K., & Kim, Y. K. (2019). Risk factors and impact of postoperative hyperglycemia in nondiabetic patients after cardiac

- surgery: A prospective study. *Medicine (United States)*, 98(23).  
<https://doi.org/10.1097/MD.00000000000015911>
- Nam, K., Jeon, Y., Kim, W. H., Jung, D. E., Kwon, S. M., Kang, P., Cho, Y. J., & Kim, T. K. (2019). Intraoperative glucose variability, but not average glucose concentration, may be a risk factor for acute kidney injury after cardiac surgery: a retrospective study. *Canadian Journal of Anesthesia*, 66(8), 921–933. <https://doi.org/10.1007/s12630-019-01349-0>
- Pacilli, M., & Willetts, I. E. (2015). Endocrine and metabolic response to surgery and its management. In *Pediatric Urology* (pp. 35–47).  
<https://doi.org/https://doi.org/10.1002/9781118473382.ch5>
- Pędziwiatr, M., Pisarska, M., Matłok, M., Major, P., Kisielewski, M., Wierdak, M., Natkaniec, M., Budzyński, P., Rubinkiewicz, M., & Budzyński, R. (2015). Randomized clinical trial to compare the effects of preoperative oral carbohydrate loading versus placebo on insulin resistance and cortisol level after laparoscopic cholecystectomy. *Polski Przegląd Chirurgiczny/ Polish Journal of Surgery*, 87(8), 402–408.  
<https://doi.org/10.1515/pjs-2015-0079>
- Pexe-Machado, P. A., de Oliveira, B. D., Dock-Nascimento, D. B., & de Aguilar-Nascimento, J. E. (2013). Shrinking preoperative fast time with maltodextrin and protein hydrolysate in gastrointestinal resections due to cancer. *Nutrition (Burbank, Los Angeles County, Calif.)*, 29(7–8), 1054–1059.  
<https://doi.org/10.1016/j.nut.2013.02.003>
- Pillinger, N. L., Robson, J. L., & Kam, P. C. A. (2018). Nutritional Prehabilitation: Physiological Basis and Clinical Evidence. *Anaesthesia and Intensive Care*, 46(5), 453–462. <https://doi.org/10.1177/0310057X1804600505>
- Polderman, J. A. W., Hermanides, J., & Hulst, A. H. (2024). Update on the perioperative management of diabetes mellitus. In *BJA Education* (Vol. 24, Issue 8, pp. 261–269). Elsevier Ltd. <https://doi.org/10.1016/j.bjae.2024.04.007>
- Qaseem, A., Humphrey, L. L., Chou, R., Snow, V., & Shekelle, P. (2011). *Use of Intensive Insulin Therapy for the Management of Glycemic Control in Hospitalized Patients: A*

*Clinical Practice Guideline From the American College of Physicians.*  
[www.annals.org](http://www.annals.org)

- Qi, L., Wu, Y., Shan, L., Dong, Y., Mao, G., Liang, G., Gong, H., Xu, C., Jiang, H., & Huang, Z. (2020). A clinical study of preoperative carbohydrate administration to improve insulin resistance in patients with multiple injuries. *Annals of Palliative Medicine*, 9(5), 3278–3287. <https://doi.org/10.21037/apm-20-1424>
- Qin, H., Ji, J., Miao, Y., Liu, T., Zhao, D., Jia, Z., Jiang, J., Liu, J., Li, Q., Ji, X., Fu, W., Lou, D., Xia, W., & Li, N. (2022). Efficacy of the Oral Administration of Maltodextrin Fructose Before Major Abdominal Surgery: A Prospective, Multicenter Clinical Study. *World Journal of Surgery*, 46(9), 2132–2140. <https://doi.org/10.1007/s00268-022-06455-7>
- Rajan, S., Rahman, A., & Kumar, L. (2021). Preoperative oral carbohydrate loading: Effects on intraoperative blood glucose levels, post-operative nausea and vomiting, and intensive care unit stay. *Journal of Anaesthesiology Clinical Pharmacology*, 37(4), 622–627. [https://doi.org/10.4103/joacp.JOACP\\_382\\_19](https://doi.org/10.4103/joacp.JOACP_382_19)
- Rangasamy, V., Xu, X., Susheela, A. T., & Subramaniam, B. (2020). Comparison of Glycemic Variability Indices: Blood Glucose, Risk Index, and Coefficient of Variation in Predicting Adverse Outcomes for Patients Undergoing Cardiac Surgery. *Journal of Cardiothoracic and Vascular Anesthesia*, 34(7), 1794–1802. <https://doi.org/10.1053/j.jvca.2019.12.032>
- Rodbard, D. (2018). Glucose Variability: A Review of Clinical Applications and Research Developments. *Diabetes Technology and Therapeutics*, 20, S25–S216. <https://doi.org/10.1089/dia.2018.0092>
- Sahap, M. (2025). Perioperative Management of Hyperglycemia and Hypoglycemia. *European Archives of Medical Research*, 125–130. <https://doi.org/10.14744/eamr.2025.45762>
- Sebestyén, A. R., Turan, C., Szemere, A., Virág, M., Ocskay, K., Dembrovszky, F., Szabó, L., Hegyi, P., Engh, M. A., & Molnár, Z. (2025). Preoperative carbohydrate loading reduces length of stay after major elective, non-cardiac surgery when compared to

- fasting: a systematic review and meta-analysis. *Scientific Reports*, 15(1).  
<https://doi.org/10.1038/s41598-025-00767-z>
- Shuford, R., & Miller-Ocuin, J. L. (2023). Hyperglycemia in the Perioperative Period. In *Clinics in Colon and Rectal Surgery* (Vol. 36, Issue 3, pp. 198–200). Thieme Medical Publishers, Inc. <https://doi.org/10.1055/s-0043-1761153>
- Singh, J. P. (2018). Preoperative oral carbohydrate drink improves surgical outcome. *MOJ Surgery*, 6(2). <https://doi.org/10.15406/MOJS.2018.06.00128>
- Sreedharan, R., Khanna, S., & Shaw, A. (2023). Perioperative glycemic management in adults presenting for elective cardiac and non-cardiac surgery. *Perioperative Medicine*, 12(1). <https://doi.org/10.1186/s13741-023-00302-6>
- Sumin, A. N., Bezdenezhnykh, N. A., Bezdenezhnykh, A. V., Osokina, A. V., Kuzmina, A. A., Sinitskaya, A. V., & Barbarash, O. L. (2023). The Role of Insulin Resistance in the Development of Complications after Coronary Artery Bypass Grafting in Patients with Coronary Artery Disease. *Biomedicines*, 11(11).  
<https://doi.org/10.3390/biomedicines11112977>
- Talutis, S. D., Lee, S. Y., Cheng, D., Rosenkranz, P., Alexanian, S. M., & McAneny, D. (2020). The impact of preoperative carbohydrate loading on patients with type II diabetes in an enhanced recovery after surgery protocol. *American Journal of Surgery*, 220(4), 999–1003. <https://doi.org/10.1016/j.amjsurg.2020.03.032>
- Tan, Z., Gong, X., Wang, C. C., Zhang, T., & Huang, J. (2023). Diminished Ovarian Reserve in Endometriosis: Insights from In Vitro, In Vivo, and Human Studies—A Systematic Review. In *International Journal of Molecular Sciences* (Vol. 24, Issue 21). Multidisciplinary Digital Publishing Institute (MDPI).  
<https://doi.org/10.3390/ijms242115967>
- Tong, E., Chen, Y., Ren, Y., Zhou, Y., Di, C., Zhou, Y., Shao, S., Qiu, S., Hong, Y., Yang, L., & Tan, X. (2022). Effects of preoperative carbohydrate loading on recovery after elective surgery: A systematic review and Bayesian network meta-analysis of randomized controlled trials. In *Frontiers in Nutrition* (Vol. 9). Frontiers Media S.A.  
<https://doi.org/10.3389/fnut.2022.951676>

- Townsend, J., Beauchamp, R., Evers, B., & Mattox, K. (2016). *Sabiston Textbook of Surgery* (20th ed.). Elsevier.
- Urai, S., Hashimoto, N., Takabe, M., Kawashima, M., Satake, Y., Nishimoto, Y., Kuroda, M., Yamane, Y., Doi, K., Oue, T., Murakami, H., Mukohara, N., & Ohara, T. (2022). Dynamic changes in insulin requirements with post-operative time using bedside artificial pancreas to maintain normoglycemia without hypoglycemia after cardiac surgery. *Journal of Artificial Organs*, 25(1), 72–81. <https://doi.org/10.1007/s10047-021-01286-0>
- Wang, S., Zhang, J., Liu, Q., & Deng, L. (2025). Clinical value of preoperative oral carbohydrate loading in patients with diabetes: a cross-sectional study. *BMC Anesthesiology*, 25(1). <https://doi.org/10.1186/s12871-025-03165-0>
- Zhang, L., Li, F., Liu, H. H., Zhang, Z. Y., Yang, F., Qian, L. L., & Wang, R. X. (2022). Glycaemic variability and risk of adverse cardiovascular events in acute coronary syndrome. *Diabetes and Vascular Disease Research*, 19(6). <https://doi.org/10.1177/14791641221137736>
- Zou, Y., Wang, W., Zheng, D., & Hou, X. (2021). Glycemic deviation index: a novel method of integrating glycemic numerical value and variability. *BMC Endocrine Disorders*, 21(1). <https://doi.org/10.1186/s12902-021-00691-z>
- Biglioli, P., Cannata, A., Alamanni, F., et al. (2003). *Biological effects of off-pump vs on-pump coronary artery surgery: focus on inflammation, hemostasis and oxidative stress. European Journal of Cardio-Thoracic Surgery.*