

Poznámky

KAPITOLA 1

1. Emerging Risk Factors Collaboration, Sarwar N., Gao P., Seshasai S. R., Gobin R., Kaptoge S., Di Angelantonio E., Ingelsson E., Lawlor D. A., Selvin E., Stampfer M., Stehouwer C. D., Lewington S., Pennells L., Thompson A., Sattar N., White I. R., Ray K. K., Danesh J.: Diabetes mellitus, fasting blood glucose concentration, and risk of vascular disease: a collaborative meta-analysis of 102 prospective studies. *Lancet*. 26. června 2010; č. 375 (9733), s. 2215–2222. doi: 10.1016/S0140-6736(10)60484-9. Erratum in: *Lancet*. 18. září 2010; č. 376 (9745): s. 958. Hillage H. L. [opraveno na Hillege H. L.].
2. <https://www.cdc.gov/diabetes/basics/index.html>.
3. <https://www.heart.org/en/health-topics/diabetes/why-diabetes-matters/cardiovascular-disease-diabetes>.
4. <https://spectrum.diabetesjournals.org/content/27/4/276>.
5. Li S., Williams P. L., Douglass C. W.: Development of a clinical guideline to predict undiagnosed diabetes in dental patients. *J Am Dent Assoc*. Leden 2011; č. 142 (1), s. 28–37. doi: 10.14219/jada.archive.2011.0025.
6. Diabetes and depression: Coping with the two conditions – Mayo Clinic, www.mayoclinic.org/diseases-conditions/diabetes/expert-answers/diabetes-and-depression/faq-20057904.
7. <https://dermnetnz.org/topics/diabetic-foot-ulcer>.
8. Thong E. P., Codner E., Laven J. S. E., Teede H.: Diabetes: a metabolic and reproductive disorder in women. *Lancet Diabetes Endocrinol*. Únor 2020; č. 8 (2), s. 134–149. doi: 10.1016/S2213-8587(19)30345-6. Epub 18. října 2019.

KAPITOLA 2

1. Konopka R. J., Benzer S.: Clock mutants of *Drosophila melanogaster*. *Proc Nat Acad Sci USA*. 1971; č. 68 (9), s. 2112–2116. doi: 10.1073/pnas.68.9.2112.
2. Mure L. S., Le H. D., Benegiamo G., Chang M. W., Rios L., Jillani N., Ngotho M., Kariuki T., Dkhissi-Benyahya O., Cooper H. M., Panda S.: Diurnal transcriptome atlas of a primate across major neural and peripheral tissues. *Science*. 16. března 2018; č. 359 (6381), s. eaao0318. doi: 10.1126/science.aao0318. Epub 8. února 2018.
3. Panda S. et al. Coordinated transcription of key pathways in the mouse by the circadian clock. *Cell* 2002; 109 (3), s. 307–320.
4. Coomans C. P., van den Berg S. A., Lucassen E. A., Houben T., Pronk A. C., van der Spek R. D., Kalsbeek A., Biermasz N. R., Willems van Dijk K., Romijn J. A., Meijer J. H.: The suprachiasmatic nucleus controls circadian energy metabolism and hepatic insulin sensitivity. *Diabetes*. Duben 2013; č. 62 (4), s. 1102–1108. doi: 10.2337/db12-0507. Epub 28. prosince 2012.
5. Chaix A., Panda S.: Ketone bodies signal opportunistic food-seeking activity. *Trends Endocrinol Metab*. Červen 2016; č. 27 (6), s. 350–352. doi: 10.1016/j.tem.2016.03.014. Epub 30. března 2016.
6. Puchalska P., Crawford P. A.: Multi-dimensional roles of ketone bodies in fuel metabolism, signaling, and therapeutics. *Cell Metab*. 7. února 2017; č. 25 (2), s. 262–284. doi: 10.1016/j.cmet.2016.12.022.
7. Wilmsen E. N.: Studies in diet, nutrition, and fertility among a group of Kalahari Bushmen in Botswana. *Social Science Information*. 1982; č. 21 (1), s. 95–125. doi: 10.1177/053901882021001006.
8. Boulos Z., Terman M.: Food availability and daily biological rhythms. *Neurosci Biobehav Rev* 1980; č. 4 (2), s. 119–131. doi: 10.1016/0149-7634(80)90010-x.
9. Vollmers C. et al.: Time of feeding and the intrinsic circadian clock drive rhythms in hepatic gene expression. *Proc Nat Acad Sci USA*. 2009; č. 106 (50), s. 21453–21458.
10. Gill S., Panda S.: A smartphone app reveals erratic diurnal eating patterns in humans that can be modulated for health benefits. *Cell Metab*. 3. listopadu 2015; č. 22 (5), s. 789–798. doi: 10.1016/j.cmet.2015.09.005. Epub 24. září 2015.
11. Sandhu A., Milan S., Gurm H. S.: Daylight savings time and myocardial infarction. *Open Heart* 2014; č. 1 (1), s. e000019.
12. Eckel R. H., Depner C. M., Perreault L., Markwald R. R., Smith M. R., McHill A. W., Higgins J., Melanson E. L., Wright K. P. Jr.: Morning circadian misalignment during short sleep duration impacts insulin sensitivity. *Curr Biol*. 16. listopadu 2015; č. 25 (22), s. 3004–3010. doi: 10.1016/j.cub.2015.10.011. Epub 5. listopadu 2015.

13. McHill A. W., Wright K. P. Jr.: Role of sleep and circadian disruption on energy expenditure and in metabolic predisposition to human obesity and metabolic disease. *Obes Rev.* Únor 2017; č. 18. Příl. 1, s. 15–24. doi: 10.1111/obr.12503.
14. Knutsson A., Kempe A.: Shift work and diabetes – a systematic review. *Chronobiol Int.* Prosinec 2014; č. 31 (10), s. 1146–1151. doi: 10.3109/07420528.2014.957308. Epub 7. října 2014.

KAPITOLA 3

1. Chaix A., Lin T., Le H. D., Chang M. W., Panda S.: Time-Restricted Feeding Prevents Obesity and Metabolic Syndrome in Mice Lacking a Circadian Clock. *Cell Metab.* 5. února 2019; č. 29 (2), s. 303–319.e4. doi: 10.1016/j.cmet.2018.08.004. Epub 30. srpna 2018.
2. Morikawa Y., Nakagawa H., Miura K., Soyama Y., Ishizaki M., Kido T., Naruse Y., Suwazono Y., Nogawa K.: Shift work and the risk of diabetes mellitus among Japanese male factory workers. *Scand J Work Environ Health.* Červen 2005; č. 31 (3), s. 179–183. doi: 10.5271/sjweh.867.
3. Toshihiro M., Saito K., Takikawa S., Takebe N., Onoda T., Satoh J.: Psychosocial factors are independent risk factors for the development of type 2 diabetes in Japanese workers with impaired fasting glucose and/or impaired glucose tolerance. *Diabet Med.* Říjen 2008; č. 25 (10), s. 1211–1217. doi: 10.1111/j.1464-5491.2008.02566.x.
4. Scheer F. A., Hilton M. F., Mantzoros C. S., Shea S. A.: Adverse metabolic and cardiovascular consequences of circadian misalignment. *Proc Nat Acad Sci USA.* 17. března 2009; č. 106 (11), s. 44538. doi: 10.1073/pnas.0808180106. Epub 2. března 2009.
5. Eriksson A. K., van den Donk M., Hilding A., Östenson C. G.: Work stress, sense of coherence, and risk of type 2 diabetes in a prospective study of middle-aged Swedish men and women. *Diabetes Care.* Září 2013; č. 36 (9), s. 2683–2689. doi: 10.2337/dc12-1738. Epub 1. května 2013.
6. Pan A., Schernhammer E., Sun Q. et al. (2011): Rotating night shift work and risk of type 2 diabetes: two prospective cohort studies in women. *PloS Med.* 2011; č. 8: s. e1001141.
7. Chalernvanichakorn T., Sithisarankul P., Hiransuthikul N.: Shift work and type 2 diabetic patients' health. *J Med Assoc Thai.* 2008; č. 91, s. 1093–1096.
8. Dupuis J. et al.: New genetic loci implicated in fasting glucose homeostasis and their impact on type 2 diabetes risk. *Nat Genet.* Únor 2010; č. 42 (2), s. 105–116. doi: 10.1038/ng.520. Epub 17. ledna 2010. Erratum in: *Nat Genet.* Květen 2010; č. 42 (5), s. 464.

9. Prokopenko I. et al.: Variants in MTNR1B influence fasting glucose levels. *Nat Genet.* Leden 2009; č. 41 (1), s. 77–81. doi: 10.1038/ng.290. Epub 7. prosince 2008.
10. Lyssenko V., Nagorny C. L., Erdos M. R., Wierup N., Jonsson A., Spégel P., Bugliani M., Saxena R., Fex M., Pulizzi N., Isomaa B., Tuomi T., Nilsson P., Kuusisto J., Tuomilehto J., Boehnke M., Altshuler D., Sundler F., Eriksson J. G., Jackson A. U., Laakso M., Marchetti P., Watanabe R. M., Mulder H., Groop L.: Common variant in MTNR1B associated with increased risk of type 2 diabetes and impaired early insulin secretion. *Nat Genet.* Leden 2009; č. 41 (1), s. 82–88. doi: 10.1038/ng.288. Epub 7. prosince 2008.
11. Bouatia-Naji N. et al.: A variant near MTNR1B is associated with increased fasting plasma glucose levels and type 2 diabetes risk. *Nat Genet.* Leden 2009; č. 41 (1), s. 89–94. doi: 10.1038/ng.277. Epub 7. prosince 2008.
12. Rönn T., Wen J., Yang Z., Lu B., Du Y., Groop L., Hu R., Ling C.: A common variant in MTNR1B, encoding melatonin receptor 1B, is associated with type 2 diabetes and fasting plasma glucose in Han Chinese individuals. *Diabetologia.* Květen 2009; č. 52 (5), s. 830–833. doi: 10.1007/s00125-009-1297-8. Epub 25. února 2009.
13. Persaud S. J., Jones P. M.: A wake-up call for type 2 diabetes? *N Engl J Med.* 15. září 2016; č. 375 (11), s. 1090–1092. doi: 10.1056/NEJMcibr1607950.
14. Rudic R. D., McNamara P., Curtis A. M., Boston R. C., Panda S., Hogenesch J. B., Fitzgerald G. A.: BMAL1 and CLOCK, two essential components of the circadian clock, are involved in glucose homeostasis. *PloS Biol.* Listopad 2004; č. 2 (11), s. e377. doi: 10.1371/journal.pbio.0020377. Epub 2. listopadu 2004.
15. Panda S., Antoch M. P., Miller B. H., Su A. I., Schook A. B., Straume M., Schultz P. G., Kay S. A., Takahashi J. S., Hogenesch J. B.: Coordinated transcription of key pathways in the mouse by the circadian clock. *Cell.* 3. května 2002; č. 109 (3), s. 307–320. doi: 10.1016/s0092-8674(02)00722-5.
16. Acosta-Rodriguez V. A. et al.: Mice under caloric restriction self-impose a temporal restriction of food intake as revealed by an automated feeder system. *Cell Metab.* 2017; č. 26 (1), s. 267–277.e2.
17. Chaix A., Lin T., Le H. D., Chang M. W., Panda S.: Time-Restricted Feeding Prevents Obesity and Metabolic Syndrome in Mice Lacking a Circadian Clock. *Cell Metab.* 5. února 2019; č. 29 (2), s. 303–319.e4. doi: 10.1016/j.cmet.2018.08.004. Epub 30. srpna 2018.
18. Gill S., Panda S.: A smartphone app reveals erratic diurnal eating patterns in humans that can be modulated for health benefits. *Cell Metab.* 2015; č. 22 (5), s. 789–798.
19. Garaulet M. et al.: Timing of food intake predicts weight loss effectiveness. *Int J Obes.* 2013; č. 37 (4), s. 604–611.

20. Sutton E. F., Beyl R., Early K. S., Cefalu W. T., Ravussin E., Peterson C. M.: Early Time-Restricted Feeding Improves Insulin Sensitivity, Blood Pressure, and Oxidative Stress Even without Weight Loss in Men with Prediabetes. *Cell Metab.* 5. června 2018; č. 27 (6), s. 1212–1221.e3. doi: 10.1016/j.cmet.2018.04.010. Epub 10. května 2018.
21. Wilkinson M. J., Manoogian E. N. C., Zadourian A., Lo H., Fakhouri S., Shoghi A., Wang X., Fleischer J. G., Navlakha S., Panda S., Taub P. R.: Ten-Hour Time-Restricted Eating Reduces Weight, Blood Pressure, and Atherogenic Lipids in Patients with Metabolic Syndrome. *Cell Metab.* 7. ledna 2020; č. 31 (1), s. 92–104.e5. doi: 10.1016/j.cmet.2019.11.004. Epub 5. prosince 2019.
22. Zomer E., Gurusamy K., Leach R., Trimmer C., Lobstein T., Morris S., James W. P. T., Finer N.: Interventions that cause weight loss and the impact on cardiovascular risk factors: a systematic review and meta-analysis. *Obesity Rev.* 2016; č. 17 (10), s. 1001–1011.
23. Watanabe M. et al.: Bile acids induce energy expenditure by promoting intracellular thyroid hormone activation. *Nature* 2006; č. 439 (7075), s. 484–489.
24. Chaix A. et al.: Time-restricted feeding is a preventative and therapeutic intervention against diverse nutritional challenges. *Cell Metab.* 2014; č. 20 (6), s. 991–1005.
25. Hopkins P. N.: Molecular biology of atherosclerosis. *Physiol Rev.* 2013; č. 93 (3), s. 1317–1542.

KAPITOLA 4

1. Mohren D. C. et al.: Prevalence of common infections among employees in different work schedules. *J Occupat Environ Med.* 2002; č. 44 (11), s. 1003–1611.
2. Greer S., Goldstein A., Walker M.: The impact of sleep deprivation on food desire in the human brain. *Nat Commun.* 2013; č. 4 (2259). <https://doi.org/10.1038/ncomms3259>.
3. Chalernvanichakorn T., Sithisarankul P., Hiransuthikul N.: Shift work and type 2 diabetic patients' health. *J Med Assoc Thai.* Červenec 2008; č. 91 (7), s. 1093–1096.
4. Chetty R., Stepner M., Abraham S. et al.: The association between income and life expectancy in the United States, 2001–2014. *JAMA* 2016; č. 315 (16), s. 1750–1766. doi:10.1001/jama.2016.4226.
5. Althoff T., Sosič R., Hicks J. et al.: Large-scale physical activity data reveal worldwide activity inequality. *Nature* 2017; č. 547, s. 336–339. <https://doi.org/10.1038/nature23018>.

6. Dunster G. P., de la Iglesia L., Ben-Hamo M., Nave C., Fleischer J. G., Panda S., de la Iglesia H. O.: Sleep more in Seattle: later school start times are associated with more sleep and better performance in high school students. *Sci. Adv.* 12. prosince 2018; č. 4 (12), s. eaau6200. doi: 10.1126/sciadv.aau6200.
7. Kellar D., Craft S.: Brain insulin resistance in Alzheimer's disease and related disorders: mechanisms and therapeutic approaches. *Lancet Neurol.* Září 2020; č. 19 (9), s. 758–766. doi: 20.1016/S1474-4422(10)30231-3. Epub 27. července 2020.
8. Van Cauter E., Polonsky K. S., Scheen A. J.: Roles of circadian rhythmicity and sleep in human glucose regulation. *Endocrinol Rev.* Říjen 1997; č. 18 (5), s. 716–738. doi: 10.1210/edrv.18.5.0317.
9. Gill S., Panda S.: A smartphone app reveals erratic diurnal eating patterns in humans that can be modulated for health benefits. *Cell Metab.* 2015; č. 22 (5), s. 789–798.
10. Gupta N. J., Kumar V., Panda S.: A camera-phone based study reveals erratic eating pattern and disrupted daily eating-fasting cycle among adults in India. *PLoS ONE.* 2017; č. 12 (3), s. e0172852.
11. Ohayon M. et al.: National Sleep Foundation's sleep quality recommendations: first report. *Sleep Health.* 2017; č. 3 (1), s. 6–19.
12. Hirshkowitz M. et al.: National Sleep Foundation's sleep time duration recommendations: methodology and results summary. *Sleep Health.* 2015; č. 1 (1), s. 40–43.
13. Hirshkowitz M. et al.: National Sleep Foundation's updated sleep duration recommendations: final report. *Sleep Health.* 2015; č. 1 (4), s. 233–243.
14. Dixon J. B., O'Brien P. E.: Health outcomes of severely obese type 2 diabetic subjects 1 year after laparoscopic adjustable gastric banding. *Diabetes Care.* Únor 2002; č. 25 (2), s. 358–363. doi: 10.2337/diacare.25.2.358.

KAPITOLA 5

1. Diabetes Prevention Program (DPP) Research Group: The Diabetes Prevention Program (DPP): description of lifestyle intervention. *Diabetes Care.* Prosinec 2002; č. 25 (12), s. 2165–2171. doi: 10.2337/diacare.25.12.2165.
2. Carter S., Clifton P. M., Keogh J. B.: Effect of intermittent compared with continuous energy restricted diet on glycemic control in patients with type 2 diabetes: a randomized noninferiority trial. *JAMA Netw Open.* 6. července 2018; č. 1 (3), s. e180756. doi: 10.1001/jamanetworkopen.2018.0756.
3. Cienfuegos S., Gabel K., Kalam F., Ezpeleta M., Wiseman E., Pavlou V., Lin S., Oliveira M. L., Varady K. A.: Effects of 4- and 6-h time-restricted feeding on weight and cardiometabolic health: a randomized controlled trial in

- adults with obesity. *Cell Metab.* 1. září 2020; č. 32 (3), s. 366–378.e3. doi: 10.1016/j.cmet.2020.06.018. Epub 15. července 2020.
4. Chow L. S., Manoogian E. N. C., Alvear A., Fleischer J. G., Thor H., Dietsche K., Wang Q., Hodges J. S., Esch N., Malaeb S., Harindhanavudhi T., Nair K. S., Panda S., Mashek D. G.: Time-restricted eating effects on body composition and metabolic measures in humans who are overweight: a feasibility study. *Obesity* (Silver Spring). Květen 2020; č. 28 (5), s. 860–869. doi: 10.1002/oby.22756. Epub 9. dubna 2020.
5. Carter S., Clifton P. M., Keogh J. B.: Effect of intermittent compared with continuous energy restricted diet on glycemic control in patients with type 2 diabetes: a randomized noninferiority trial. *JAMA Netw Open.* 6. července 2018; č. 1 (3), s. e180756. doi: 10.1001/jamanetworkopen.2018.0756.
6. Kant A. K., Graubard B. I.: 40-year trends in meal and snack eating behaviors of American adults. *J Acad Nutr Dietetics.* 2015; č. 115 (1), s. 50–63.
7. Gill S., Panda S.: A smartphone app reveals erratic diurnal eating patterns in humans that can be modulated for health benefits. *Cell Metab.* 2015; č. 22 (5), s. 789–798.
8. Gupta N. J., Kumar V., Panda S.: A camera-phone based study reveals erratic eating pattern and disrupted daily eating-fasting cycle among adults in India. *PLoS ONE.* 2017; č. 12 (3), s. e0172852.
9. Jakubowicz D., Landau Z., Tsameret S., Wainstein J., Raz I., Ahren B., Chapnik N., Barnea M., Ganz T., Menaged M., Mor N., Bar-Dayana Y., Froy O.: Reduction in glycosylated hemoglobin and daily insulin dose alongside circadian clock upregulation in patients with type 2 diabetes consuming a three-meal diet: a randomized clinical trial. *Diabetes Care.* Prosinec 2019; č. 42 (12), s. 2171–2180. doi: 10.2337/dc19-1142. Epub 23. září 2019.
10. Kahleova H., Belinova L., Malinska H. et al.: Eating two larger meals a day (breakfast and lunch) is more effective than six smaller meals in a reduced-energy regimen for patients with type 2 diabetes: a randomised crossover study. *Diabetologia* 2014; č. 57, s. 1552–1560. <https://doi.org/10.1007/s00125-014-3253-5>.
11. Garaulet M., Gómez-Abellán P., Albuquerque-Béjar J. J., Lee Y. C., Ordovás J. M., Scheer F. A.: Timing of food intake predicts weight loss effectiveness. *Int J Obes (London).* Duben 2013; č. 37 (4), s. 604–611. doi: 10.1038/ijo.2012.229. Epub 29. ledna 2013. Erratum in: *Int J Obes (London).* Duben 2013; č. 37 (4), s. 624.
12. Stunkard A. J., Grace W. J., Wolff H. G.: The night-eating syndrome; a pattern of food intake among certain obese patients. *Am J Med.* Červenec 1955; č. 19 (1), s. 78–86. doi: 10.1016/0002-9343(55)90276-x.
13. Takeda E., Terao J., Nakaya Y., Miyamoto K., Baba Y., Chuman H., Kaji R., Ohmori T., Rokutan K.: Stress control and human nutrition. *J Med Invest.* Srpen 2004; č. 51 (3–4), s. 139–145. doi: 10.2152/jmi.51.139.

14. Liu Z. et al.: PER1 phosphorylation specifies feeding rhythm in mice. *Cell Rep.* 2014; č. 7 (5), s. 1509–1520.

KAPITOLA 6

1. Yancy W. S. Jr., Foy M., Chalecki A. M., Vernon M. C., Westman E. C.: A low-carbohydrate, ketogenic diet to treat type 2 diabetes. *Nutr Metab* (London). 1. prosince 2015; č. 2, s. 34. doi: 10.1186/1743-7075-2-34.
2. Chaix A., Zarrinpar A., Miu P., Panda S.: Time-restricted feeding is a preventative and therapeutic intervention against diverse nutritional challenges. *Cell Metab.* 2. prosince 2014; č. 20 (6), s. 991–1005. doi: 10.1016/j.cmet.2014.11.001.
3. Crosby P., Hamnett R., Putker M., Hoyle N. P., Reed M., Karam C. J., Maywood E. S., Stangherlin A., Chesham J. E., Hayter E. A., Rosenbriar-Ribeiro L., Newham P., Clevers H., Bechtold D. A., O'Neill J. S.: Insulin/IGF-1 drives PERIOD synthesis to entrain circadian rhythms with feeding time. *Cell.* 2. května 2019; č. 177 (4), s. 896–909.e20. doi: 10.1016/j.cell.2019.02.017. Epub 25. dubna 2019.
4. <https://www.wsj.com/graphics/what-americans-should-eat-dietary-guidelines>.
5. Suez J., Korem T., Zeevi D., Zilberman-Schapira G., Thaiss C. A., Maza O., Israeli D., Zmora N., Gilad S., Weinberger A., Kuperman Y., Harmelin A., Kolodkin-Gal I., Shapiro H., Halpern Z., Segal E., Elinav E.: Artificial sweeteners induce glucose intolerance by altering the gut microbiota. *Nature.* 9. října 2014; č. 514 (7521), s. 181–186. doi: 10.1038/nature13793. Epub 17. září 2014.
6. Estruch R., Martínez-González M. A., Corella D., Salas-Salvadó J., Ruiz-Gutiérrez V., Covas M. I., Fiol M., Gómez-Gracia E., López-Sabater M. C., Vinyoles E., Arós F., Conde M., Lahoz C., Lapetra J., Sáez G., Ros E.; PREDIMED Study Investigators: Effects of a Mediterranean-style diet on cardiovascular risk factors: a randomized trial. *Ann Intern Med.* 4. července 2006; č. 145 (1), s. 1–11. doi: 10.7326/0003-4819-145-1-200607040-00004. Erratum in: *Ann Intern Med.* 21. srpna 2018; č. 169 (4), s. 270–271.
7. Castro-Diehl C., Wood A. C., Redline S., Reid M., Johnson D. A., Maras J. E., Jacobs D. R. Jr., Shea S., Crawford A., St-Onge M. P.: Mediterranean diet pattern and sleep duration and insomnia symptoms in the Multi-Ethnic Study of Atherosclerosis. *Sleep.* 1. listopadu 2018; č. 41 (11), s. zsy158. doi: 10.1093/sleep/zsy158.
8. Hall K. D., Ayuketah A., Brychta R., Cai H., Cassimatis T., Chen K. Y., Chung S. T., Costa E., Courville A., Darcey V., Fletcher L. A., Forde C. G., Gharib A. M., Guo J., Howard R., Joseph P. V., McGehee S., Ouwerkerk R.,

- Raisinger K., Rozga I., Stagliano M., Walter M., Walter P. J., Yang S., Zhou M.: Ultra-processed diets cause excess calorie intake and weight gain: an inpatient randomized controlled trial of ad libitum food intake. *Cell Metab.* 6. října 2020; č. 32 (4), s. 690. doi: 10.1016/j.cmet.2020.08.014. Erratum pro: *Cell Metab.* 2. července 2019; č. 30 (1), s. 67–77.e3.
9. Jakubowicz D., Wainstein J., Landau Z., Ahren B., Barnea M., Bar-Dayana Y., Froy O.: High-energy breakfast based on whey protein reduces body weight, postprandial glycemia and HbA1c in type 2 diabetes. *J Nutr Biochem.* Listopad 2017; č. 49, s. 1–7. doi: 10.1016/j.jnutbio.2017.07.005. Epub 21. července 2017.
10. <https://www.wsj.com/graphics/what-americans-should-eat-dietary-guidelines>.
11. Deer R. R., Volpi E.: Protein intake and muscle function in older adults. *Curr Opin Clin Nutr Metab Care.* Květen 2015; č. 18 (3), s. 248–253. doi: 10.1097/MCO.0000000000000162.

KAPITOLA 7

- De Cabo R., Mattson M. P.: Effects of intermittent fasting on health, aging, and disease. *N Engl J Med.* 26. prosince 2019; č. 381 (26), s. 2541–2551. doi: 10.1056/NEJMr1905136. Erratum in: *N Engl J Med.* 16. ledna 2020; č. 382 (3), s. 298. Erratum in: *N Engl J Med.* 5. března 2020; č. 382 (10), s. 978.
- Schellenberg E. S., Dryden D. M., Vandermeer B., Ha C., Korownyk C.: Lifestyle interventions for patients with and at risk for type 2 diabetes: a systematic review and meta-analysis. *Ann Intern Med.* 2013; č. 159, s. 543–551.
- Chen L., Pei J. H., Kuang J. et al.: Effect of lifestyle intervention in patients with type 2 diabetes: a meta-analysis. *Metabolism.* 2015; č. 64, s. 338–347.
- Lin X., Zhang X., Guo J. et al.: Effects of exercise training on cardiorespiratory fitness and biomarkers of cardiometabolic health: a systematic review and meta-analysis of randomized controlled trials. *J Am Heart Assoc.* 2015; č. 4, s. 4.
- Yardley J. E., Hay J., Abou-Setta A. M., Marks S. D., McGavock J.: A systematic review and meta-analysis of exercise interventions in adults with type 1 diabetes. *Diabetes Res Clin Pract.* 2014; č. 106, s. 393–400.
- Syrow L., Kleinert M., Richter E. A., Jensen T. E.: Exercise-stimulated glucose uptake – regulation and implications for glycaemic control. *Nat Rev Endocrinol.* Březen 2017; č. 13 (3), s. 133–148. doi: 10.1038/nrendo.2016.162. Epub 14. října 2016.
- Snedeker J. G., Gautieri A.: The role of collagen crosslinks in ageing and diabetes – the good, the bad, and the ugly. *Muscles Ligaments Tendons J.* 17. listopadu 2014; č. 4 (3), s. 303–308.

8. Edgar D. M. et al.: Influence of running wheel activity on free-running sleep/wake and drinking circadian rhythms in mice. *Physiol Behav.* 1991; č. 50 (2), s. 373–378.
9. Brand S. et al.: High exercise levels are related to favorable sleep patterns and psychological functioning in adolescents: a comparison of athletes and controls. *J Adoles Heal.* 2010; č. 46 (2), s. 133–141.
10. Reid K. J. et al.: Aerobic exercise improves self-reported sleep and quality of life in older adults with insomnia. *Sleep Med.* 2010; č. 11 (9), s. 934–940.
11. Tworoger S. S. et al.: Effects of a yearlong moderate-intensity exercise and a stretching intervention on sleep quality in postmenopausal women. *Sleep.* 2003; č. 26 (7), s. 830–836.
12. Van Someren E. J. et al.: Long-term fitness training improves the circadian rest-activity rhythm in healthy elderly males. *J Biol Rhythms.* 1997; č. 12 (2), s. 146–156.
13. Kubota T. et al.: Interleukin-15 and interleukin-2 enhance non-REM sleep in rabbits. *Am J Physiol:Regul Integ Comp Physiol.* 2001; č. 281 (3), s. R1004–1012.
14. Li Y. et al.: Association of serum irisin concentrations with the presence and severity of obstructive sleep apnea syndrome. *J Clin Lab Anal.* 2016; č. 31 (5), s. e22077.
15. Awad K. M. et al.: Exercise is associated with a reduced incidence of sleep-disordered breathing. *Am J Med.* 2012; č. 125 (5), s. 485–490.
16. Sleiman S. F., Henry J., Al-Haddad R., El Hayek L., Abou Haidar E., Stringer T., Ulja D., Karuppagounder S. S., Holson E. B., Ratan R. R., Ninan I., Chao M. V.: Exercise promotes the expression of brain derived neurotrophic factor (BDNF) through the action of the ketone body β -hydroxybutyrate. *Elife.* 2. června 2016; č. 5, s. e15092. doi: 10.7554/eLife.15092.
17. Atkinson G., Davenne D.: Relationships between sleep, physical activity and human health. *Physiol Behav.* 28. února 2007; č. 90 (2–3), s. 229–235. doi: 10.1016/j.physbeh.2006.09.015. Epub 25. října 2006.
18. Yang N., Meng Q. J.: Circadian clocks in articular cartilage and bone: a compass in the sea of matrices. *J Biol Rhythms.* 2016; č. 31 (5), s. 415–427.
19. Schroder E. A. et al.: Intrinsic muscle clock is necessary for musculoskeletal health. *J Physiol.* 2015; č. 593 (24), s. 5387–5404.
20. Aoyama S., Shibata S.: The role of circadian rhythms in muscular and osseous physiology and their regulation by nutrition and exercise. *Frontiers in Neurosci.* 2017; 11, č. 63.
21. Woldt E. et al.: Rev-erb- α modulates skeletal muscle oxidative capacity by regulating mitochondrial biogenesis and autophagy. *Nature Med.* 2013; č. 19 (8), s. 1039–1046.
22. Thun E., Bjorvatn B., Flo E., Harris A., Pallesen S.: Sleep, circadian rhythms, and athletic performance. *Sleep Med. Rev.* říjen 2015; č. 23, s. 1–9. doi: 10.1016/j.smrv.2014.11.003. Epub 20. listopadu 2014.

23. Chang J., Garva R., Pickard A., Yeung C. C., Mallikarjun V., Swift J., Holmes D. F., Calverley B., Lu Y., Adamson A., Raymond-Hayling H., Jensen O., Shearer T., Meng Q. J., Kadler K. E.: Circadian control of the secretory pathway maintains collagen homeostasis. *Nat Cell Biol.* Leden 2020; č. 22 (1), s. 74–86. doi: 10.1038/s41556-019-0441-z. Epub 6. ledna 2020.
24. Steidle-Kloc E. et al.: Does exercise training impact clock genes in patients with coronary artery disease and type 2 diabetes mellitus? *Eur J Prev Card.* 2016; č. 23 (13), s. 1375–1382.
25. Chimen M., Kennedy A., Nirantharakumar K., Pang T. T., Andrews R., Narendran P.: What are the health benefits of physical activity in type 1 diabetes mellitus? A literature review. *Diabetologia.* 2012; č. 55, s. 542–551.
26. Snowling N. J., Hopkins W. G.: Effects of different modes of exercise training on glucose control and risk factors for complications in type 2 diabetic patients: a metaanalysis. *Diabetes Care* 2006; č. 29, s. 2518–2527.
27. Jelleyman C., Yates T., O'Donovan G. et al.: The effects of high-intensity interval training on glucose regulation and insulin resistance: a meta-analysis. *Obes Rev.* 2015; č. 16, s. 942–961.
28. Tonoli C., Heyman E., Roelands B. et al.: Effects of different types of acute and chronic (training) exercise on glycaemic control in type 1 diabetes mellitus: a meta-analysis. *Sports Med.* 2012; č. 42, s. 1059–1080.
29. Innes K. E., Selfe T. K.: Yoga for adults with type 2 diabetes: a systematic review of controlled trials. *J Diabetes Res.* 2016; č. 2016, s. 6979370.
30. Ahn S., Song R.: Effects of tai chi exercise on glucose control, neuropathy scores, balance, and quality of life in patients with type 2 diabetes and neuropathy. *J Alt Complement Med.* 2012; č. 18, s. 1172–1178.
31. Althoff T. et al.: Large-scale physical activity data reveal worldwide activity inequality. *Nature* 2017; č. 547 (7663), s. 336–339.
32. Bassett D. R., Schneider P. L., Huntington G. E.: Physical activity in an Old Order Amish community. *Med Sci Sports and Exercise.* 2004; č. 36 (1), s. 79–85.
33. De la Iglesia H. O. et al.: Access to electric light is associated with shorter sleep duration in a traditionally hunter-gatherer community. *J Biol Rhythms.* 2015; č. 30 (4), s. 342–350.
34. Van Praag H. et al.: Running enhances neurogenesis, learning, and long-term potentiation in mice. *Proc Nat Acad Sci USA.* 1999; č. 96 (23), s. 13427–13431.
35. Van Marken Lichtenbelt W. D. et al.: Cold-activated brown adipose tissue in healthy men. *N Eng J Med.* 2009; č. 360 (15), s. 1500–1508.
36. Ouellet V. et al.: Brown adipose tissue oxidative metabolism contributes to energy expenditure during acute cold exposure in humans. *J Clin Invest.* 2012; č. 122 (2), s. 545–552.

37. Pasiëka A. M., Rafacho A.: Impact of glucocorticoid excess on glucose tolerance: clinical and preclinical evidence. *Metabolites*. 3. srpna 2016; č. 6 (3), s. 24. doi: 10.3390/metabo 6030024.
38. Thun E. et al.: Sleep, circadian rhythms, and athletic performance. *Sleep Med Rev*. 2015; č. 23, s. 1–9.
39. King N. A., Burley V. J., Blundell J. E.: Exercise-induced suppression of appetite: effects on food intake and implications for energy balance. *Eur J Clin Nutr*. 1994; č. 48 (10), s. 715–724.
40. Richter E. A., Hargreaves M.: Exercise, GLUT4, and skeletal muscle glucose uptake. *Phys Rev*. 2013; č. 93 (3), s. 993–1017.
41. Van Cauter E. et al.: Nocturnal decrease in glucose tolerance during constant glucose infusion. *J Clin Endocrin Metab*. 1989; č. 69 (3), s. 604–611.
42. Sturis J. et al.: 24-hour glucose profiles during continuous or oscillatory insulin infusion: demonstration of the functional significance of ultradian insulin oscillations. *J Clin Invest*. 1995; č. 95 (4), s. 1464–1471.
43. Chaix A. et al.: Time-restricted feeding is a preventative and therapeutic intervention against diverse nutritional challenges. *Cell Metab*. 2014; č. 20 (6), s. 991–1005.
44. King N. A., Burley V. J., Blundell J. E.: Exercise-induced suppression of appetite: effects on food intake and implications for energy balance. *Eur J Clin Nutr*. Říjen 1994; č. 48 (10), s. 715–724.

KAPITOLA 8

1. Grandner M. A., Seixas A., Shetty S., Shenoy S.: Sleep duration and diabetes risk: population trends and potential mechanisms. *Curr Diab Rep*. Listopad 2016; č. 16 (11), s. 106. doi: 10.1007/s11892-016-0805-8.
2. Spiegel K., Leproult R., Van Cauter E.: Impact of sleep debt on metabolic and endocrine function. *Lancet*. 23. října 1999; č. 354 (9188), s. 1435–1439. doi: 10.1016/S0140-6736(99)01376-8.
3. Wu J. C., Gillin J. C., Buchsbaum M. S., Hershey T., Hazlett E., Sicotte N., Bunney W. E. Jr.: The effect of sleep deprivation on cerebral glucose metabolic rate in normal humans assessed with positron emission tomography. *Sleep*. Duben 1991; č. 14 (2), s. 155–162.
4. De Havas J. A., Parimal S., Soon C. S., Chee M. W.: Sleep deprivation reduces default mode network connectivity and anti-correlation during rest and task performance. *Neuroimage*. 16. ledna 2012; č. 59 (2), s. 1745–1751. doi: 10.1016/j.neuroimage.2011.08.026. Epub 18. srpna 2011.
5. Gujar N., Yoo S. S., Hu P., Walker M. P.: The unrested resting brain: sleep deprivation alters activity within the default-mode network.

- J Cogn Neurosci*. Srpen 2010; č. 22 (8), s. 1637–1648. doi: 10.1162/jocn.2009.21331.
6. Xie L., Kang H., Xu Q., Chen M. J., Liao Y., Thiyagarajan M., O'Donnell J., Christensen D. J., Nicholson C., Iliff J. J., Takano T., Deane R., Nedergaard M.: Sleep drives metabolite clearance from the adult brain. *Science*. 18. října 2013; č. 342 (6156), s. 373–377. doi: 10.1126/science.1241224.
 7. Mestre H., Mori Y., Nedergaard M.: The brain's glymphatic system: current controversies. *Trends Neurosci*. Červenec 2020; č. 43 (7), s. 458–466. doi: 10.1016/j.tins.2020.04.003. Epub 15. května 2020.
 8. Benedict C., Brooks S. J., O'Daly O. G., Almèn M. S., Morell A., Åberg K., Gingnell M., Schultes B., Hallschmid M., Broman J. E., Larsson E. M., Schiöth H. B.: Acute sleep deprivation enhances the brain's response to hedonic food stimuli: an fMRI study. *J Clin Endocrinol Metab*. Březen 2012; č. 97 (3), s. E443–447. doi: 10.1210/jc.2011-2759. Epub 18. ledna 2012.
 9. Redwine L., Hauger R. L., Gillin J. C., Irwin M.: Effects of sleep and sleep deprivation on interleukin-6, growth hormone, cortisol, and melatonin levels in humans. *J Clin Endocrinol Metab*. Říjen 2000; č. 85 (10), s. 3597–3603. doi: 10.1210/jcem.85.10.6871.
 10. McHill A. W. et al.: Impact of circadian misalignment on energy metabolism during simulated nightshift work. *Proc Nat Acad Sci USA*. 2014; č. 111 (48), s. 17302–17307.
 11. Grandner M. A., Seixas A., Shetty S., Shenoy S.: Sleep duration and diabetes risk: population trends and potential mechanisms. *Curr Diab Rep*. Listopad 2016; č. 16 (11), s. 106. doi: 10.1007/s11892-016-0805-8.
 12. Leproult R., Copinschi G., Buxton O., Van Cauter E.: Sleep loss results in an elevation of cortisol levels the next evening. *Sleep*. Říjen 1997; č. 20 (10), s. 865–870.
 13. McAlpine C. S., Kiss M. G., Rattik S., He S., Vassalli A., Valet C., Anzai A., Chan C. T., Mindur J. E., Kahles F., Poller W. C., Frodermann V., Fenn A. M., Gregory A. F., Halle L., Iwamoto Y., Hoyer F. F., Binder C. J., Libby P., Tafti M., Scammell T. E., Nahrendorf M., Swirski F. K.: Sleep modulates haematopoiesis and protects against atherosclerosis. *Nature*. Únor 2019; č. 566 (7744), s. 383–387. doi: 10.1038/s41586-019-0948-2. Epub 13. února 2019.
 14. Irwin M. R., Olmstead R., Carroll J. E.: Sleep disturbance, sleep duration, and inflammation: a systematic review and meta-analysis of cohort studies and experimental sleep deprivation. *Biol Psychiatry*. 1. července 2016; č. 80 (1), s. 40–52. doi: 10.1016/j.biopsych.2015.05.014. Epub 1. června 2015.
 15. Gaspar L. S. et al.: Obstructive sleep apnea and hallmarks of aging. *Trends Mol Med*. 2017; č. 23 (8), s. 675–692.
 16. Reichmuth K. J., Austin D., Skatrud J. B., Young T.: Association of sleep apnea and type II diabetes: a population-based study. *Am J Respir Crit*

- Care Med. 15. prosince 2005; č. 172 (12), s. 1590–1595. doi: 10.1164/rccm.200504-637OC. Epub 28. září 2005.
17. Dawson A., Abel S. L., Loving R. T., Dailey G., Shadan F. F., Cronin J. W., Kripke D. F., Kline L. E.: CPAP therapy of obstructive sleep apnea in type 2 diabetics improves glycemic control during sleep. *J Clin Sleep Med*. 15. prosince 2008; č. 4 (6), s. 538–542.
 18. Kronfeld-Schor N., Einat H.: Circadian rhythms and depression: human psychopathology and animal models. *Neuropharm*. 2012; č. 62 (1), s. 101–114.
 19. Coles M. E., Schubert J. R., Nota J. A.: Sleep, circadian rhythms, and anxious traits. *Curr Psych Rep*. 2015; č. 17 (9), s. 73.
 20. Kripke D. F. et al.: Mortality associated with sleep duration and insomnia. *Arch Gen Psych*. 2002; č. 59 (2), s. 131–136.
 21. Hirshkowitz M. et al.: National Sleep Foundation's sleep time duration recommendations: methodology and results summary. *Sleep Health*. 2015; č. 1 (1), s. 40–43.
 22. Hirshkowitz M. et al.: National Sleep Foundation's updated sleep duration recommendations: final report. *Sleep Health*. 2015; č. 1 (4), s. 233–243.
 23. Hansen A. L., Dahl L., Olson G., Thornton D., Graff I. E., Frøyland L., Thayer J. F., Pallesen S.: Fish consumption, sleep, daily functioning, and heart rate variability. *J Clin Sleep Med*. 15. května 2014; č. 10 (15), s. 567–575. doi: 10.5664/jcsm.3714.
 24. Rondanelli M., Opizzi A., Monteferrario F., Antoniello N., Manni R., Klersy C.: The effect of melatonin, magnesium, and zinc on primary insomnia in long-term care facility residents in Italy: a double-blind, placebo-controlled clinical trial. *J Am Geriatr Soc*. Leden 2011; č. 59 (1), s. 82–90. doi: 10.1111/j.1532-5415.2010.03232.x.
 25. Muscogiuri G., Barrea L., Aprano S., Framondi L., Di Matteo R., Laudisio D., Pugliese G., Savastano S., Colao A., on behalf of the Opera Prevention Project: Sleep quality in obesity: does adherence to the Mediterranean diet matter? *Nutrients*. 10. května 2020; č. 12 (5), s. 1364. doi: 10.3390/nu12051364.
 26. Gill S., Panda S.: A smartphone app reveals erratic diurnal eating patterns in humans that can be modulated for health benefits. *Cell Metab*. 2015; č. 22 (5), s. 789–798.
 27. Wilkinson M. J., Manoogian E. N. C., Zadourian A., Lo H., Fakhouri S., Shoghi A., Wang X., Fleischer J. G., Navlakha S., Panda S., Taub P. R.: Ten-hour time-restricted eating reduces weight, blood pressure, and atherogenic lipids in patients with metabolic syndrome. *Cell Metab*. 7. ledna 2020; č. 31 (1), s. 92–104.e5. doi: 10.1016/j.cmet.2019.11.004. Epub 5. prosince 2019.
 28. Martin B., Mattson M. P., Maudsley S.: Caloric restriction and intermittent fasting: two potential diets for successful brain aging. *Ageing Res Rev*. 2006; č. 5 (3), s. 332–353.

29. Hatori M., Panda S.: The emerging roles of melanopsin in behavioral adaptation to light. *Trends Mol Med.* Říjen 2010; č. 16 (10), s. 435–446. doi: 10.1016/j.molmed.2010.07.005. Epub 31. srpna 2010.
30. Takasu N. N., Hashimoto S., Yamanaka Y., Tanahashi Y., Yamazaki A., Honma S., Honma K.: Repeated exposures to daytime bright light increase nocturnal melatonin rise and maintain circadian phase in young subjects under fixed sleep schedule. *Am J Physiol Regul Integr Comp Physiol.* Prosinec 2006; č. 291 (6), s. R1799–1807. doi: 10.1152/ajpregu.00211.2006. Epub 13. července 2006.
31. Viola A. U., James L. M., Schlangen L. J., Dijk D. J.: Blue-enriched white light in the workplace improves self-reported alertness, performance and sleep quality. *Scand J Work Environ Health.* Srpen 2008; č. 34 (4), s. 297–306. doi: 10.5271/sjweh.1268. Epub 22. září 2008.
32. Burkhart K., Phelps J. R.: Amber lenses to block blue light and improve sleep: a randomized trial. *Chronobiol Int.* Prosinec 2009; č. 26 (8), s. 1602–1612. doi: 10.3109/07420520903523719.
33. Ferracioli-Oda E., Qawasmi A., Bloch M. H.: Meta-analysis: melatonin for the treatment of primary sleep disorders. *PLoS ONE.* 2013; č. 8 (5), s. e63773.
34. Lin C. L., Yeh M. C., Harnod T., Lin C. L., Kao C. H.: Risk of Type 2 diabetes in patients with nonapnea sleep disorders in using different types of hypnotics: a population-based retrospective cohort study. *Medicine (Baltimore).* Září 2015; č. 94 (38), s. e1621. doi: 10.1097/MD.0000000000001621.

KAPITOLA 9

1. Lim S., Bae J. H., Kwon H. S., Nauck M. A.: COVID-19 and diabetes mellitus: from pathophysiology to clinical management. *Nat Rev Endocrinol.* Leden 2021; č. 17 (1), s. 11–30. doi: 10.1038/s41574-020-00435-4. Epub 13. listopadu 2020.
2. Black J. A., Simmons R. K., Boothby C. E., Davies M. J., Webb D., Khunti K., Long G. H., Griffin S. J.: Medication burden in the first 5 years following diagnosis of type 2 diabetes: findings from the ADDITION-UK trial cohort. *BMJ Open Diabetes Res Care.* 1. října 2015; č. 3 (1), s. e000075. doi: 10.1136/bmjdr-2014-000075.
3. Reinberg A., Lévi F.: Clinical chronopharmacology with special reference to NSAIDs. *Scand J Rheumatol Suppl.* 1987; č. 65, s. 118–122. doi: 10.3109/03009748709102189.
4. Buttgerit F., Doering G., Schaeffler A., Witte S., Sierakowski S., Gromnica-Ihle E., Jeka S., Krueger K., Szechinski J., Alten R.: Efficacy of modified-release versus standard prednisone to reduce duration of morning

- stiffness of the joints in rheumatoid arthritis (CAPRA-1): a double-blind randomised controlled trial. *Lancet*. 19. ledna 2008; č. 371 (9608), s. 205–214. doi: 08.1016/S0140-6736(10)60132-4.
5. Hermida R. C., Crespo J. J., Domínguez-Sardiña M., Otero A., Moyá A., Ríos M. T., Sineiro E., Castiñeira M. C., Callejas P. A., Pousa L., Salgado J. L., Durán C., Sánchez J. J., Fernández J. R., Mojón A., Ayala D. E.; Hygia Project Investigators: Bedtime hypertension treatment improves cardiovascular risk reduction: the Hygia Chronotherapy Trial. *Eur Heart J*. 21. prosince 2020; č. 41 (48), s. 4565–4576. doi: 10.1093/eurheartj/ehz754.
 6. Wilkinson M. J., Manoogian E. N. C., Zadourian A., Lo H., Fakhouri S., Shoghi A., Wang X., Fleischer J. G., Navlakha S., Panda S., Taub P. R.: Ten-hour time-restricted eating reduces weight, blood pressure, and atherogenic lipids in patients with metabolic syndrome. *Cell Metab*. 7. ledna 2020; č. 31 (1), s. 92–104. e5. doi: 10.1016/j.cmet.2019.11.004. Epub 5. prosince 2019.
 7. Hutchison A. T., Regmi P., Manoogian E. N. C., Fleischer J. G., Wittert G. A., Panda S., Heilbronn L. K.: Time-restricted feeding improves glucose tolerance in men at risk for type 2 diabetes: a randomized crossover trial. *Obesity (Silver Spring)*. Květen 2019; č. 27 (5), s. 724–732. doi: 10.1002/oby.22449. Epub 19. dubna 2019.
 8. Poolsup N., Suksomboon N., Kyaw A. M.: Systematic review and meta-analysis of the effectiveness of continuous glucose monitoring (CGM) on glucose control in diabetes. *Diabetol Metab Syndr*. 23. července 2013; č. 5, s. 39. doi: 10.1186/1758-5996-5-39.

KAPITOLA 10

1. <https://www.cdc.gov/healthyweight/assessing/index.html>.