

## 9.0 REFERENCES

- Allison, L. A. (2021). *Fundamental molecular biology*. John Wiley & Sons.
- Arnao, M. B., Cano, A., & Acosta, M. (2001). The hydrophilic and lipophilic contribution to total antioxidant activity. *Food chemistry*, *73*(2), 239-244.
- Bigagli, E., & Lodovici, M. (2019). Circulating oxidative stress biomarkers in clinical studies on type 2 diabetes and its complications. In *Oxidative Medicine and Cellular Longevity* (Vol. 2019). <https://doi.org/10.1155/2019/5953685>
- Bisht, S., Faiq, M., Tolahunase, M., & Dada, R. (2017). Oxidative stress and male infertility. *Nature Reviews Urology*, *14*(8), 470–485. <https://doi.org/10.1038/nrurol.2017.69>
- Bock, B. C., Thind, H., Fava, J. L., Dunsiger, S., Guthrie, K. M., Stroud, L., Gopalakrishnan, G., Sillice, M., & Wu, W. (2019). Feasibility of yoga as a complementary therapy for patients with type 2 diabetes: The Healthy Active and in Control (HA1C) study. *Complementary Therapies in Medicine*, *42*, 125–131. <https://doi.org/10.1016/j.ctim.2018.09.019>
- Bommer, C., Sagalova, V., Heesemann, E., Manne-Goehler, J., Atun, R., Bärnighausen, T., Davies, J., & Vollmer, S. (2018). Global Economic Burden of Diabetes in Adults: Projections From 2015 to 2030. *Diabetes Care*, *41*(5), 963–970. <https://doi.org/10.2337/dc17-1962>
- Bornstein, S. R., Rubino, F., Khunti, K., Mingrone, G., Hopkins, D., Birkenfeld, A. L., Boehm, B., Amiel, S., Holt, R. I., Skyler, J. S., DeVries, J. H., Renard, E., Eckel, R. H., Zimmet, P., Alberti, K. G., Vidal, J., Geloneze, B., Chan, J. C., Ji, L., & Ludwig, B. (2020). Practical recommendations for the management of diabetes in patients with COVID-19. In *The Lancet Diabetes and Endocrinology* (Vol. 8, Issue 6, pp. 546–550). [https://doi.org/10.1016/S2213-8587\(20\)30152-2](https://doi.org/10.1016/S2213-8587(20)30152-2)
- Bradford, M. M. (1976). A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. *Analytical Biochemistry*, *72*(1–2), 248–254. [https://doi.org/10.1016/0003-2697\(76\)90527-3](https://doi.org/10.1016/0003-2697(76)90527-3)
- Chow, C. K., Ramasundarahettige, C., Hu, W., AlHabib, K. F., Avezum, A., Cheng, X., Chifamba, J., Dagenais, G., Dans, A., Egbujie, B. A., Gupta, R., Iqbal, R., Ismail, N., Keskinler, M. v., Khatib, R., Kruger, L., Kumar, R., Lanus, F., Lear, S., ... Yusuf, S. (2018). Availability and affordability of essential medicines for diabetes across high-income, middle-income, and low-income countries: a prospective epidemiological study. *The Lancet Diabetes and Endocrinology*, *6*(10), 798–808. [https://doi.org/10.1016/S2213-8587\(18\)30233-X](https://doi.org/10.1016/S2213-8587(18)30233-X)
- Dhawan, V., Kumar, M., Deka, D., Malhotra, N., Dadhwal, V., Singh, N., & Dada, R. (2018). Meditation & yoga: Impact on oxidative DNA damage & dysregulated sperm transcripts in male partners of couples with recurrent pregnancy loss. *Indian Journal of Medical Research*, *148*(7), 134–139. [https://doi.org/10.4103/ijmr.IJMR\\_1988\\_17](https://doi.org/10.4103/ijmr.IJMR_1988_17)
- di Minno, A., Turnu, L., Porro, B., Squellerio, I., Cavalca, V., Tremoli, E., & di Minno, M. N. D. (2016). 8-Hydroxy-2-Deoxyguanosine Levels and Cardiovascular Disease: A

Systematic Review and Meta-Analysis of the Literature. In *Antioxidants and Redox Signaling* (Vol. 24, Issue 10, pp. 548–555). Mary Ann Liebert Inc.  
<https://doi.org/10.1089/ars.2015.6508>

- Dimauro, I., Sgura, A., Pittaluga, M., Magi, F., Fantini, C., Mancinelli, R., Sgadari, A., Fulle, S., & Caporossi, D. (2017). Regular exercise participation improves genomic stability in diabetic patients: An exploratory study to analyse telomere length and DNA damage. *Scientific Reports*, 7(1), 1–12. <https://doi.org/10.1038/s41598-017-04448-4>
- Gæde, P., Lund-Andersen, H., Parving, H.-H., & Pedersen, O. (2008). Effect of a Multifactorial Intervention on Mortality in Type 2 Diabetes. *New England Journal of Medicine*, 358(6), 580–591. <https://doi.org/10.1056/NEJMoa0706245>
- Gong, Q., Zhang, P., Wang, J., Ma, J., An, Y., Chen, Y., Zhang, B., Feng, X., Li, H., Chen, X., Cheng, Y. J., Gregg, E. W., Hu, Y., Bennett, P. H., Li, G., Qian, X., Zhang, L., Hui, Y., He, S., ... Roglic, G. (2019). Morbidity and mortality after lifestyle intervention for people with impaired glucose tolerance: 30-year results of the Da Qing Diabetes Prevention Outcome Study. *The Lancet Diabetes and Endocrinology*, 7(6), 452–461. [https://doi.org/10.1016/S2213-8587\(19\)30093-2](https://doi.org/10.1016/S2213-8587(19)30093-2)
- Gordon, L. A., Morrison, E. Y., McGrowder, D. A., Young, R., Fraser, Y. T. P., Zamora, E. M., Alexander-Lindo, R. L., & Irving, R. R. (2008). Effect of exercise therapy on lipid profile and oxidative stress indicators in patients with type 2 diabetes. *BMC Complementary and Alternative Medicine*, 8, 21. <https://doi.org/10.1186/1472-6882-8-21>
- Hartfiel, N., Clarke, G., Havenhand, J., Phillips, C., & Edwards, R. T. (2017). Cost-effectiveness of yoga for managing musculoskeletal conditions in the workplace. *Occupational Medicine*, 67(9), 687–695. <https://doi.org/10.1093/occmed/kqx161>
- Hegde, S. v., Adhikari, P., Kotian, S. M., & Shastry, R. (2019). Effects of Yoga Versus Sham Yoga on Oxidative Stress, Glycemic Status, and Anthropometry in Type 2 Diabetes Mellitus: A Single-Blinded Randomized Pilot Study. *International Journal of Yoga Therapy*. <https://doi.org/10.17761/d-18-2020-00018>
- Hinokio, Y., Suzuki, S., Hirai, M., Chiba, M., Hirai, A., & Toyota, T. (1999). Oxidative DNA damage in diabetes mellitus: its association with diabetic complications. *Diabetologia*, 42(8), 995–998.
- Innes, K. E., & Selfe, T. K. (2016). Yoga for adults with type 2 diabetes: A systematic review of controlled trials. *Journal of Diabetes Research*, 2016, 10–12. <https://doi.org/10.1155/2016/6979370>
- Innes, K. E., & Vincent, H. K. (2007). The influence of yoga-based programs on risk profiles in adults with type 2 diabetes mellitus: A systematic review. *Evidence-Based Complementary and Alternative Medicine*, 4(4), 469–486. <https://doi.org/10.1093/ecam/nel103>
- Jayawardena, R., Ranasinghe, P., Chathuranga, T., Atapattu, P. M., & Misra, A. (2018). The benefits of yoga practice compared to physical exercise in the management of type 2 Diabetes Mellitus: A systematic review and meta-analysis. In *Diabetes and Metabolic*

*Syndrome: Clinical Research and Reviews* (Vol. 12, Issue 5).

<https://doi.org/10.1016/j.dsx.2018.04.008>

- Johansen, M. Y., Macdonald, C. S., Hansen, K. B., Karstoft, K., Christensen, R., Pedersen, M., Hansen, L. S., Zacho, M., Wedell-Neergaard, A. S., Nielsen, S. T., Iepsen, U. W., Langberg, H., Vaag, A. A., Pedersen, B. K., & Ried-Larsen, M. (2017). Effect of an intensive lifestyle intervention on glycemic control in patients with type 2 diabetes: A randomized clinical trial. *JAMA - Journal of the American Medical Association*, *318*(7), 637–646. <https://doi.org/10.1001/jama.2017.10169>
- Joshi, N., Caputo, G. M., Weitekamp, M. R., & Karchmer, A. W. (1999). Infections in patients with diabetes mellitus. *New England Journal of Medicine*, *341*(25), 1906–1912. <https://doi.org/10.1056/NEJM199912163412507>
- Kawahito, S., Kitahata, H., & Oshita, S. (2009). Problems associated with glucose toxicity: Role of hyperglycemia-induced oxidative stress. In *World Journal of Gastroenterology* (Vol. 15, Issue 33, pp. 4137–4142). <https://doi.org/10.3748/wjg.15.4137>
- Kroese, L. J., & Scheffer, P. G. (2014). 8-Hydroxy-2-Deoxyguanosine and Cardiovascular Disease: a Systematic Review. In *Current Atherosclerosis Reports* (Vol. 16, Issue 11, pp. 1–8). <https://doi.org/10.1007/s11883-014-0452-y>
- Kumar, P. R. V., Seshadri, M., Jaikrishan, G., & Das, B. (2015). Effect of chronic low dose natural radiation in human peripheral blood mononuclear cells: Evaluation of DNA damage and repair using the alkaline comet assay. *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis*, *775*, 59–65. <https://doi.org/10.1016/j.mrfmmm.2015.03.011>
- Lascar, N., Brown, J., Pattison, H., Barnett, A. H., Bailey, C. J., & Bellary, S. (2018). Type 2 diabetes in adolescents and young adults. *The Lancet Diabetes and Endocrinology*, *6*(1), 69–80. [https://doi.org/10.1016/S2213-8587\(17\)30186-9](https://doi.org/10.1016/S2213-8587(17)30186-9)
- Lodovici, M., Giovannelli, L., Pitozzi, V., Bigagli, E., Bardini, G., & Rotella, C. M. (2008). Oxidative DNA damage and plasma antioxidant capacity in type 2 diabetic patients with good and poor glycaemic control. *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis*, *638*(1–2), 98–102. <https://doi.org/10.1016/j.mrfmmm.2007.09.002>
- Magliano, D. J., Harding, J. L., Cohen, K., Huxley, R. R., Davis, W. A., & Shaw, J. E. (2015). Excess risk of dying from infectious causes in those with type 1 and type 2 diabetes. *Diabetes Care*, *38*(7), 1274–1280. <https://doi.org/10.2337/dc14-2820>
- Martinet, W., Knaapen, M. W. M., de Meyer, G. R. Y., Herman, A. G., & Kockx, M. M. (2002). Elevated levels of oxidative DNA damage and DNA repair enzymes in human atherosclerotic plaques. *Circulation*, *106*(8), 927–932. <https://doi.org/10.1161/01.CIR.0000026393.47805.21>
- McCall, M. C., Ward, A., Roberts, N. W., & Heneghan, C. (2013). Overview of systematic reviews: yoga as a therapeutic intervention for adults with acute and chronic health conditions. *Evidence-Based Complementary and Alternative Medicine*, *2013*.

- McDermott, K. A., Rao, M. R., Nagarathna, R., Murphy, E. J., Burke, A., Nagendra, R. H., & Hecht, F. M. (2014). A yoga intervention for type 2 diabetes risk reduction: A pilot randomized controlled trial. *BMC Complementary and Alternative Medicine, 14*(1), 1–14. <https://doi.org/10.1186/1472-6882-14-212>
- Misra, A., Sattar, N., Tandon, N., Shrivastava, U., Vikram, N. K., Khunti, K., & Hills, A. P. (2018). Clinical management of type 2 diabetes in south Asia. In *The Lancet Diabetes and Endocrinology* (Vol. 6, Issue 12, pp. 979–991). Elsevier Ltd. [https://doi.org/10.1016/S2213-8587\(18\)30199-2](https://doi.org/10.1016/S2213-8587(18)30199-2)
- Mozaffarieh, M., Schoetzau, A., Sauter, M., Grieshaber, M., Orgül, S., Golubnitschaja, O., & Flammer, J. (2008). Comet assay analysis of single-stranded DNA breaks in circulating leukocytes of glaucoma patients. *Molecular Vision, 14*, 1584–1588. <http://www.ncbi.nlm.nih.gov/pubmed/18769648>
- Nagarathna, R., Rajesh, S., Amit, S., Patil, S., Anand, A., & Nagendra, H. (2019). Methodology of Niyantrita Madhumeha Bharata Abhiyaan- 2017, a nationwide multicentric trial on the effect of a validated culturally acceptable lifestyle intervention for primary prevention of diabetes: Part 2. *International Journal of Yoga, 12*(3). [https://doi.org/10.4103/ijoy.ijoy\\_38\\_19](https://doi.org/10.4103/ijoy.ijoy_38_19)
- Nagarathna, R., Usharani, M. R., Rao, A. R., Chaku, R., Kulkarni, R., & Nagendra, H. R. (2012). Efficacy of yoga based life style modification program on Medication score and lipid profile in type 2 diabetes-a randomized control study. *International Journal of Diabetes in Developing Countries, 32*(3), 122–130. <https://doi.org/10.1007/s13410-012-0078-y>
- Nam, E. a., & Cortez, D. (2013). ATR signaling: more than meeting at the fork Edward. *Biochem J, 436*(3), 527–536. <https://doi.org/10.1042/BJ20102162.ATR>
- Nikooyeh, B., & Neyestani, T. R. (2016). Oxidative stress, type 2 diabetes and vitamin D: past, present and future. *Diabetes/Metabolism Research and Reviews, 32*(3), 260-267.
- Pittaluga, M., Sgadari, A., Dimauro, I., Tavazzi, B., Parisi, P., & Caporossi, D. (2015). Physical exercise and redox balance in type 2 diabetics: Effects of moderate training on biomarkers of oxidative stress and DNA damage evaluated through comet assay. *Oxidative Medicine and Cellular Longevity, 2015*. <https://doi.org/10.1155/2015/981242>
- Radak, Z., Torma, F., Berkes, I., Goto, S., Mimura, T., Posa, A., Balogh, L., Boldogh, I., Suzuki, K., Higuchi, M., & Koltai, E. (2019). Exercise effects on physiological function during aging. *Free Radical Biology and Medicine, 132*, 33-41.
- Raveendran, A. V., Deshpandae, A., & Joshi, S. R. (2018). Therapeutic Role of Yoga in Type 2 Diabetes. In *Endocrinology and Metabolism* (Vol. 33, Issue 3, pp. 307–317). <https://doi.org/10.3803/EnM.2018.33.3.307>
- Reaven, P. D., Emanuele, N. v., Wiitala, W. L., Bahn, G. D., Reda, D. J., McCarren, M., Duckworth, W. C., & Hayward, R. A. (2019). Intensive glucose control in patients with type 2 diabetes - 15-year follow-up. *New England Journal of Medicine, 380*(23), 2215–2224. <https://doi.org/10.1056/NEJMoa1806802>

- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling and more. Version 0.5–12 (BETA). *Journal of statistical software*, 48(2), 1-36.
- Saeedi, P., Salpea, P., Karuranga, S., Petersohn, I., Malanda, B., Gregg, E. W., Unwin, N., Wild, S. H., & Williams, R. (2020). Mortality attributable to diabetes in 20-79 years old adults, 2019 estimates: results from the International Diabetes Federation Diabetes Atlas, 9th edition. *Diabetes Research and Clinical Practice*, 0(0), 108086. <https://doi.org/10.1016/j.diabres.2020.108086>
- Sarwar, N., Gao, P., Kondapally Seshasai, S. R., Gobin, R., Kaptoge, S., di Angelantonio, E., Ingelsson, E., Lawlor, D. A., Selvin, E., Stampfer, M., Stehouwer, C. D. A., Lewington, S., Pennells, L., Thompson, A., Sattar, N., White, I. R., Ray, K. K., Danesh, J., Tipping, R. W., ... Wormser, D. (2010). Diabetes mellitus, fasting blood glucose concentration, and risk of vascular disease: A collaborative meta-analysis of 102 prospective studies. *The Lancet*, 375(9733), 2215–2222. [https://doi.org/10.1016/S0140-6736\(10\)60484-9](https://doi.org/10.1016/S0140-6736(10)60484-9)
- Schieber, M., & Chandel, N. S. (2014). ROS function in redox signaling and oxidative stress. In *Current Biology* (Vol. 24, Issue 10). Cell Press. <https://doi.org/10.1016/j.cub.2014.03.034>
- Shah, A., Gray, K., Figg, N., Finigan, A., Starks, L., & Bennett, M. (2018). Defective base excision repair of oxidative DNA damage in vascular smooth muscle cells promotes atherosclerosis. *Circulation*, 138(14), 1446–1462. <https://doi.org/10.1161/CIRCULATIONAHA.117.033249>
- Simone, S., Gorin, Y., Velagapudi, C., Abboud, H. E., & Habib, S. L. (2008). Mechanism of oxidative DNA damage in diabetes tuberlin inactivation and downregulation of DNA repair enzyme 8-oxo-7,8-dihydro-2'-deoxyguanosine- DNA glycosylase. *Diabetes*, 57(10), 2626–2636. <https://doi.org/10.2337/db07-1579>
- Singh, S., Kyizom, T., Singh, K. P., Tandon, O. P., & Madhu, S. v. (2008). INFLUENCE OF PRANAYAMAS AND YOGA-ASANAS ON SERUM INSULIN, BLOOD GLUCOSE AND LIPID PROFILE IN TYPE 2 DIABETES. In *Indian Journal of Clinical Biochemistry* (Vol. 23, Issue 4).
- Sirbu, B. M., & Cortez, D. (2013). DNA damage response: three levels of DNA repair regulation. In *Cold Spring Harbor perspectives in biology* (Vol. 5, Issue 8, p. a012724). <https://doi.org/10.1101/cshperspect.a012724>
- Soares, J. P., Silva, A. M., Oliveira, M. M., Peixoto, F., Gaivão, I., & Mota, M. P. (2015). Effects of combined physical exercise training on DNA damage and repair capacity: role of oxidative stress changes. *Age*, 37(3). <https://doi.org/10.1007/s11357-015-9799-4>
- Song, F., Jia, W., Yao, Y., Hu, Y., Lei, L., Lin, J., Sun, X., & Liu, L. (2007). Oxidative stress, antioxidant status and DNA damage in patients with impaired glucose regulation and newly diagnosed type 2 diabetes. *Clinical Science*, 112(11–12), 599–606. <https://doi.org/10.1042/CS20060323>
- Thind, H., Lantini, R., Balletto, B. L., Donahue, M. L., Salmoirago-Blotcher, E., Bock, B. C., & Scott-Sheldon, L. A. J. (2017). The effects of yoga among adults with type 2 diabetes:

- A systematic review and meta-analysis. In *Preventive Medicine* (Vol. 105).  
<https://doi.org/10.1016/j.ypmed.2017.08.017>
- Tolahunase, M., Sagar, R., & Dada, R. (2017). Impact of Yoga and Meditation on Cellular Aging in Apparently Healthy Individuals: A Prospective, Open-Label Single-Arm Exploratory Study. *Oxidative Medicine and Cellular Longevity*, 2017.  
<https://doi.org/10.1155/2017/7928981>
- Tumurkhuu, G., Shimada, K., Dagvadorj, J., Crother, T. R., Zhang, W., Luthringer, D., Gottlieb, R. A., Chen, S., & Arditì, M. (2016). Ogg1-dependent DNA repair regulates NLRP3 inflammasome and prevents atherosclerosis. *Circulation Research*, 119(6), e76–e90. <https://doi.org/10.1161/CIRCRESAHA.116.308362>
- van Sloten, T. T., Sedaghat, S., Carnethon, M. R., Launer, L. J., & Stehouwer, C. D. A. (2020). Cerebral microvascular complications of type 2 diabetes: stroke, cognitive dysfunction, and depression. *The Lancet Diabetes and Endocrinology*, 8(4), 325–336. [https://doi.org/10.1016/S2213-8587\(19\)30405-X](https://doi.org/10.1016/S2213-8587(19)30405-X)
- Vizcaino, M., & Stover, E. (2016). The effect of yoga practice on glycemic control and other health parameters in Type 2 diabetes mellitus patients: A systematic review and meta-analysis. *Complementary Therapies in Medicine*, 28, 57–66.  
<https://doi.org/10.1016/j.ctim.2016.06.007>
- Vizcaino, M., Stover, E., Gebel, E., Chen, K. M., Tseng, W. S., Hagins, M., States, R., Selfe, T., Innes, K., Raub, J. A., Tran, M. D., Holly, R. G., Lashbrook, J., Amsterdam, E. A., Ward, L., Stebbings, S., Cherkin, D., Baxter, D., Agte, V. V., ... Masharani, U. (2016). The effect of yoga practice on glycemic control and other health parameters in Type 2 diabetes mellitus patients: A systematic review and meta-analysis. *Complementary Therapies in Medicine*, 28, 57–66. <https://doi.org/10.1016/j.ctim.2016.06.007>
- Wing, R. R., Bolin, P., Brancati, F. L., Bray, G. A., Clark, J. M., Coday, M., Crow, R. S., Curtis, J. M., Egan, C. M., Espeland, M. A., Evans, M., Foreyt, J. P., Ghazarian, S., Gregg, E. W., Harrison, B., Hazuda, H. P., Hill, J. O., Horton, E. S., van Hubbard, S., ... Yanovski, S. Z. (2013). Cardiovascular effects of intensive lifestyle intervention in type 2 diabetes. *New England Journal of Medicine*, 369(2), 145–154.  
<https://doi.org/10.1056/NEJMoa1212914>
- Xavier, D. J., Takahashi, P., Manoel-Caetano, F. S., Foss-Freitas, M. C., Foss, M. C., Donadi, E. A., Passos, G. A., & Sakamoto-Hojo, E. T. (2014). One-week intervention period led to improvements in glycemic control and reduction in DNA damage levels in patients with type 2 diabetes mellitus. *Diabetes Research and Clinical Practice*, 105(3), 356–363. <https://doi.org/10.1016/j.diabres.2014.06.004>
- Yadav, R., Yadav, R. K., Khadgawat, R., & Pandey, R. M. (2019). Comparative efficacy of a 12 week yoga-based lifestyle intervention and dietary intervention on adipokines, inflammation, and oxidative stress in adults with metabolic syndrome: A randomized controlled trial. *Translational Behavioral Medicine*, 9(4), 594–604.  
<https://doi.org/10.1093/tbm/iby060>