

DAFTAR PUSTAKA

- Albab, C. F. 2019. *Pengaruh Intensitas Olahraga Terhadap Fat Browning Melalui Peningkatan Kadar Pgc-1 α Otot Dan Ekspresi Uncouple Protein 1 Sel Lemak Pada Mencit Jantan Yang Diinduksi Fruktosa*. Skripsi thesis, Universitas Airlangga.
- Aldridge, A., Kouroupis, D., Churchman, S., English, A., Ingham, E., Jones, E. 2013. Assay validation for the assessment of adipogenesis of multipotential stromal cells—a direct comparison of four different methods. *Cytotherapy*. 15: 89-101
- Allen, W. E. 2008. diFiore's Atlas of Histology with Functional Correlations (11th Edition). *Journal of Anatomy* 213(3) : 357–358.
- Almeida, M.E., Nielsen, J., Petersen, M.H., Wentorf, E.K., Pedersen, N.B., Jensen, K, Højlund, K., Ørtenbla, N. 2022. Altered intramuscular network of lipid droplets and mitochondria in type 2 diabetes. *American Journal of Physiology-Cell Physiology*. 324(1): C39-C57.
- Antoni, M.F., Rejeki, P.S., Sulistiawati, Pranoto, A., Wigati, K.W., Sari, G.M., Lesmana, R., Yamaoka, Y. 2022. Effect of nocturnal and diurnal moderate-intensity swimming exercise on increasing irisin level of female mice (*Mus musculus*). *CMU J. Nat. Sci.* 21(2): e2022033.
- Ayari, S., Abellard, A., Carayol, M., Guedj, É., Gavarry, O. 2023. A systematic review of exercise modalities that reduce pro-inflammatory cytokines in humans and animals' models with mild cognitive impairment or dementia. *Experimental gerontology*, 175: 1-20
- Bae, J. Y., Woo, J., Roh, H. T., Lee, Y. H., Ko, K., Kang, S., & Shin, K. O. (2017). The effects of detraining and training on adipose tissue lipid droplet in obese mice after chronic high-fat diet. *Lipids in health and disease*. 16(13): 1-7.
- Bersuker, K., & Olzmann, J. A. 2017. Establishing the lipid droplet proteome: Mechanisms of lipid droplet protein targeting and degradation. *Biochimica et biophysica acta Molecular and cell biology of lipids*. 1862(10):1166–1177.
- Boden, G. 2008. Obesity and Free Fatty Acids. *Endocrinology and Metabolism Clinics of North America*, 37(3) : 635–646.
- Bohari, B., Nabila, M., Sijabat, A. I. Y., Farendhiya, A., Tsany, R. D., Akta W, U. A., Hidayah, R. N., Setyaningsih, P., Anggini, M. T., & Wulan Y. P, Y. 2022. Physical Activity, Eating Habits, Nutrition Knowledge and Nutritional Status of Central Obesity in Adolescents. *Journal of Health and Nutrition Research*, 1(1) : 11–16.
- Brooks, P. T., Munthe-Fog, L., Rieneck, K., Banch Clausen, F., Rivera, O. B., Kannik Hastrup, E., Fischer-Nielsen, A., & Svalgaard, J. D. 2021. Application of a deep learning-based image analysis and live-cell imaging system for quantifying adipogenic differentiation kinetics of adipose-derived stem/stromal cells. *Adipocyte*, 10(1), 621–630.
- Bursac, B., Vasiljevic, A., Nestorovic, Velickovic, N., Milutinovic, D., Matic, M., Djordjevic, A. 2014. High-fructose diet leads to visceral adiposity and hypothalamic leptin resistance in male rats — do glucocorticoids play a role?. *The Journal of Nutritional Biochemistry*. 25(4): 446-455.
- Charles, J. P., Cappellari, O., Spence, A. J., Hutchinson, J. R., & Wells, D. J. 2016.

- Musculoskeletal Geometry, Muscle Architecture and Functional Specialisations of the Mouse Hindlimb. *PloS one*, 11(4): 1-21.
- Dejgaard, S. Y., & Presley, J. F. 2018. New Method for Quantitation of Lipid Droplet Volume From Light Microscopic Images With an Application to Determination of PAT Protein Density on the Droplet Surface. *Journal of Histochemistry and Cytochemistry*, 66(6) : 447–465.
- Dewi, M. R., & Sidiartha, I. G. Ianang. 2013. Prevalence and Risk of Obesity in Primary School in Urban and Rural Areas. *Medicina*. 44(4) ; 15–21.
- Fachrunnisa, J., Abrori, Cs., & Rachmawati, D. A. 2016. Analysis of Risk Factors for Obesity in Urban Children in Some Elementary School in Jember Regency. *Journal of Agromedicine and Medical Sciences*, 2(3) : 17-22.
- Fauzi, M.A., Sri, P.R., Sulistiawati, D., Pranoto, A., & Sugiharto, D. 2022. Moderate-Intensity Swimming Exercises Decrease Body Weight and Lee's Obesity Index in Female Mice (*Mus musculus*). *International Journal of Research Publications*, 93(1) : 228-237.
- Fujimoto, T., Ohsaki, Y., Cheng, J., Suzuki, M., & Shinohara, Y. (2008). Lipid droplets: a classic organelle with new outfits. *Histochemistry and cell biology*, 130(2), 263–279.
- Gjermeni, E., Kirstein, A. S., Kolbig, F., Kirchhof, M., Bundalian, L., Katzmann, J. L., Laufs, U., Blüher, M., Garten, A., & Le Duc, D. 2021. Obesity—an update on the basic pathophysiology and review of recent therapeutic advances. *Biomolecules*, 11(10) : 1426-1454.
- Gobatto, C.A., de Mello, M.A.R., Sibuya, C.Y., de Azevedo, J.R.M., Santos, L.A., Kokubun, E. 2001. Maximal lactate steady state in rats submitted to swimming exercise. *Comparative Biochemistry and Physiology Part A* 130(1): 21-27.
- Grace GA, Edward S, G. S. 2017. Dietary Habits and Obesity among Adolescent School Children: A Case Control Study in an Urban Area of Kancheepuram District. *Indian Journal of Community Medicine*, 42(1) : 147–150.
- Gulen, M.I., Bagla, A. G., Aysel., Yavuz, O., Hismiogullari, A. A. 2015. Histopathological Changes in Rat Pancreas and Skeletal Muscle Associated With High Fat Diet Induced Insulin Resistance. *Biotechnic & Histochemistry*. 90(7): 495-505.
- Gurina, T.S, Simms L. 2023. *Histology Staining*. StatPearls Treasure Island (FL): StatPearls Publishing.
- Ibrahim, A. N. 2016. Pengaruh Aktivitas Fisik Menggunakan Treadmill Terhadap Aktivitas Kreatin Kinase Dan Gambaran Histopatologi Otot Bisep Femoris Tikus (*Rattus norvegicus*) Model Obesitas Induksi High Fructose Diet (HFD). *Skripsi*. Malang: Universitas Brawijaya.
- Ilham, M., & Rifki, M. S. 2020. Pengaruh Latihan Beban Terhadap Peningkatan Hipertrofi Otot Lengan Atlet Dayung. *Jurnal Stamina*, 3(6) : 379–397.
- Indra, M.R. 1999. *Penelitian Eksperimental, Dalam Buku Ajar Metodologi Penelitian seri I*. Malang: Fakultas Kedokteran Universitas Brawijaya.
- Jameson, J. L., Fauci, A. S., Kasper, D. L., Hauser, S. L., Longo, D. L., & Loscalzo, J. 2018. *Harrison's Principles of Internal Medicine*. McGraw-Hill Education.
- Jarc, E., & Petan, T. 2019. Lipid droplets and the management of cellular stress. *Yale Journal of Biology and Medicine*, 92(3) : 435–452.
- Kementerian Kesehatan RI. 2018. *Epidemi Obesitas*. Jakarta: Kemenkes RI.
- Kemenkes RI. 2018. *Laporan Riset Kesehatan Dasar Nasional Tahun 2018*.

- Kementrian Kesehatan RI. Jakarta: Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan.
- Khanna, D., Khanna, S., Khanna, P., Kahar, P., & Patel, B. M. 2022. Obesity: A Chronic Low-Grade Inflammation and Its Markers. *Cureus*. 14(2), e22711.
- Komiya, Y., Sawano, S., Mashima, D., Ichitsubo, R., Nakamura, M., Tatsumi, R., Ikeuchi, Y., & Mizunoya, W. 2017. Mouse soleus (slow) muscle shows greater intramyocellular lipid droplet accumulation than EDL (fast) muscle: fiber type-specific analysis. *Journal of muscle research and cell motility*. 38(2): 163–173.
- Krinke, G. J. 2000. *The Laboratory Rat. The Handbook of Experimental Animals*. Academic Press.
- Lee, B. A., Oh, D, J. 2014. The effects of aquatic exercise on body composition, physical fitness, and vascular compliance of obese elementary students. *Journal of Exercise Rehabilitation*, 10(3) : 184–190.
- Leyh, J., Winter, K., Reinicke, M., Ceglarek, U., Bechmann, I., & Landmann, J. 2021. Long-term diet-induced obesity does not lead to learning and memory impairment in adult mice. *PloS one*, 16(9), e0257921
- Li, X., Li, Z., Zhao, M., Nie, Y., Liu, P., Zhu, Y., & Zhang, X. 2019. Skeletal Muscle Lipid Droplets and the Athlete's Paradox. *Cells*, 8(3): 249.
- Longo, M., Zatterale, F., Naderi, J., Parrillo, L., Formisano, P., Raciti, G. A., Beguinot, F., Miele, C. 2019. Adipose Tissue Dysfunction As Determinant of Obesity-Associated Metabolic Complications. *International Journal of Molecular Sciences*. 20(9): 2358-2381.
- Lustig, R. H., Collier, D., Kassotis, C., Roepke, T. A., Ji Kim, M., Blanc, E., Barouki, R., Bansal, A., Cave, M. C., Chatterjee, S., Choudhury, M., Gilbertson, M., Lagadic-Gossmann, D., Howard, S., Lind, L., Tomlinson, C. R., Vondracek, J., & Heindel, J. J. 2022. Obesity I: Overview Molecular and Biochemical Mechanisms. *Biochemical Pharmacology*. 199(5): 1-61.
- Lutfi, A. R., Herawati, L., & Sari, G. M. 2021. Calorie Restriction and Moderate-Intensity Continuous Exercise Decrease Free Fatty Acid Levels and Visceral Fat Weight on High Calorie Diet Female Mice. *Indian Journal of Forensic Medicine & Toxicology*. 15(2): 3665-3677.
- Malafaia, A. B., Nassif, P. A. N., Ribas, C. A. P. M., Ariede, B. L., Sue, K. N., & Cruz, M. A. 2013. Obesity Induction With High Fat Sucrose in Rats. *Brazilian Archives of Digestive Surgery*. 26(1): 17–21.
- Maya, K. 2017. Prinsip Dasar Program Olahraga Kesehatan. *Jurnal Online Universitas PGRI Palembang*, 28(2): 1-12
- Martins, T.; Castro-Ribeiro, C.; Lemos, S.; Ferreira, T.; Nascimento-Gonçalves, E.; Rosa, E.; Oliveira, P.A.; Antunes, L.M. Murine Models of Obesity. *Obesities* 2022, 2, 127-147.
- McArdle, W. D., & Montage, H. . 1966. Reliability of Exhaustive Swimming in the Laboratory Rat. *J. Appl. Physiol*. 21(4): 1431-1434.
- Milhem F, Skates E, Wilson M, Komarnytsky S. 2021. Obesity-Resistant Mice on a High-Fat Diet Display a Distinct Phenotype Linked to Enhanced Lipid Metabolism. *Nutrients*. 16(1):171.
- Morales, P. E., Bucarey, J. L., Espinosa, A. 2017. Muscle Lipid Metabolism: Role of Lipid Droplets and Perilipins. *Journal of diabetes research*. 1-10
- Muntiha, M. 2001. Teknik Pembuatan Preparat Histopatologi dari Jaringan Hewan

- dengan Pewarnaan Hematoksin dan Eosin (HE). *Prosiding Temu Teknis Fungsional Non Peneliti*. 1(1): 156-163.
- Myrland, C. K. 2011. Fiber type , intramyocellular lipid and mitochondrial mass in human primary myotubes retain the metabolic characteristics of the donor. *Disertasi*. Louisiana: Louisiana State University
- Nakhei, H., Mogharnasi., Fanaei, H. 2019. Effect of swimming training on levels of asprosin, lipid profile, glucose and insulin resistance in rats with metabolic syndrome. *Obesity Medicine*. 100111: 1-7.
- Nielsen, J., Christensen, A. E., Nellesmann, B., & Christensen, B. 2017. Lipid Droplet Size and Location in Human Skeletal Muscle Fibers are Associated With Insulin Sensitivity. *American Journal of Physiology-Endocrinology and Metabolism*. 313(6): 721–730.
- Nistiari, F., Racz, O., Lukacinova, A., Hubkova, B., Novakova, J., Lovasova, E., & Sedlakova, E. 2012. Age dependency on some physiological and biochemical parameters of male Wistar rats in controlled environment. *Journal of environmental science and health. Part A, Toxic/hazardous substances & environmental engineering*, 47(9), 1224–1233.
- Octarine, S. W., & Mahmudiono, T. 2022. Apakah Kebiasaan Makan Berhubungan dengan Overweight/Obesitas pada Wanita Dewasa Indonesia? Berdasarkan Indonesian Family Life Survey (IFLS) 5 Tahun 2014. *Media Gizi Kesmas*. 11(1): 176-178.
- Olzmann, J. A., & Carvalho, P. 2019. Dynamics and functions of lipid droplets. *Nature Reviews Molecular Cell Biology*. 20(3): 137-155.
- Onal, G., Kutlu, O., Gozuacik, D., & Dokmeci Emre, S. 2017. Lipid Droplets in Health and Disease. *Lipids in Health and Disease*. 16(1): 1-15.
- Perez, M.B., Zagmutt, S., Vázquez, M.C.S., Serra, D., Mera, P. 2020. Impact of Adaptive Thermogenesis in Mice on the Treatment of Obesity. *Cells*. 9(2): 1-20
- Qin, Y., Tian, Y. 2010. Exploring the molecular mechanisms underlying the potentiation of exogenous growth hormone on alcohol-induced fatty liver diseases in mice. *Journal of Translational Medicine*. 8(1): 120-135.
- Rahayu, A. S. 2005. Perbandingan Respon Panjang, Berat, Diameter Dan Tebal Tulang Femur Akibat Latihan Renang Intensitas Ringan Dan Intensitas Berat Pada Masa Pertumbuhan Tikus Putih (*Rattus Norvegicus*) Jantan. *Skripsi*. Surabaya: Universitas Airlangga.
- Robinson-Junker, A.L., O'hara, B. F., Gaskill, B.N. 2018. Out Like a Light? The Effects of a Diurnal Husbandry Schedule on Mouse Sleep and Behavior. *Journal of the American Association for Laboratory Animal Science*. 57(2):124-133.
- Rogers, P & Webb, Geoffrey. 1980. Estimation of body fat in normal and obese mice. *The British journal of nutrition*. 43. 83-6.
- Rosen, E. D., Spiegelman, B. M. 2014. What we talk about when we talk about fat. *Cell*. 156(1): 20–44.
- Saraswati, S. K., Rahmaningrum, F. D., Pahsya, M. N. Z., Paramitha, N., Wulansari, A., Ristantya, A. R., Sinabutar, B. M., Pakpahan, V. E., & Nandini, N. 2021. Literature Review: Faktor Risiko Penyebab Obesitas. *Media Kesehatan Masyarakat Indonesia*. 20(1): 70-74.
- Sastroasmoro, S., & Ismael. 2011. *Dasar-dasar Metodologi Penelitian Klinis*.

Sagung Seto, Jakarta

- Schwartz, M. W., Seeley, R. J., Zeltser, L. M., Drewnowski, A., Ravussin, E., Redman, L. M., & Leibel, R. L. 2017. Obesity pathogenesis: An endocrine society scientific statement. *Endocrine Reviews*. 38(4): 267-296.
- Seibert, J. T., Najt, C. P., Heden, T. D., Mashek, D. G., & Chow, L. S. 2020. Muscle Lipid Droplets: Cellular Signaling to Exercise Physiology and Beyond. *Trends in Endocrinology and Metabolism*. 31(12): 928-938.
- Setiawan, T. T. 2007. Hubungan Kekuatan Otot dan Fleksibilitas Sendi dengan Prestasi Renang 50 M Gaya Kupu-Kupu. *Journal of Education Research*. 63(1): 61-67.
- Sugondo, S. 2017. *Obesitas, Dalam Buku Ajar Ilmu Penyakit Dalam Jilid II Edisi VI*. Jakarta: Interna Publishing,
- Sumadewi, K. T. 2017. Korelasi Antara Kadar Leptin dengan IMT, Lingkar Pinggang dan RLPP pada Orang Dewasa Obesitas Usia 19-25 Tahun di Universitas Warmadewa. *WMJ (Warmadewa Medical Journal)*. 1(2): 71-82.
- Suryadinata, R. V., & Sukarno, D. A. 2019. The Effect of Physical Activity on The Risk of Obesity in Adulthood. *Indonesian Journal of Public Health*. 14(1): 104-114.
- Tran, L.T., Yuen, V.G. & McNeill, J.H. 2009. The fructose-fed rat: a review on the mechanisms of fructose-induced insulin resistance and hypertension. *Mol Cell Biochem*. 332: 145–159 .
- Umek, N., Horvat, S., & Cvetko, E. 2021. Skeletal Muscle and Fiber Type-Specific Intramyocellular Lipid Accumulation in Obese Mice. *Bosnian Journal of Basic Medical Sciences*. 21(6): 729-737.
- Utami, Y. W. 2009. Heavy Intensity of Swim Training Improve The Tendon Stretch Level Latihan Renang Intensitas Berat Lebih Meningkatkan Kekuatan Daya Rentang. *Jurnal Kedokteran Brawijaya*. 25(9): 28-31.
- Viera, A. J., Garrett, J. M. 2005. Understanding interobserver agreement: the kappa statistic. *Family medicine*. 37(5) : 360–363.
- Walther, T. C., & Farese, R. V. 2012. Lipid Droplets and Cellular Lipid Metabolism. *Annual Review of Biochemistry*. 81(3): 687-714.
- Wangko, S. 2014. Jaringan Otot Rangka Sistem Membran dan Struktur Halus Unit Kontraktil. *Jurnal Biomedik* . 6(3): 27-32
- Xie, Q., Hao, M. L., Meng, L. B., Zuo, X. Q., Guo, P., Qiu, Y., Wang, Q., Zhang, N., & Lei, M. 2019. Effect Of Eating Habits on Obesity in Adolescents: A Study Among Chinese College Students. *Journal of International Medical Research*. 48(3):1-9
- Zaman, M.-Q. Leray, V., Bloc'h, J., Thorin, C., Ouguerram, K., Nguyen, P. 2011. Lipid profile and insulin sensitivity in rats fed with high-fat or high-fructose diets. *British Journal of Nutrition*. 106 (S1): 206–S210.