

## DAFTAR PUSTAKA

- Agarwal A., Mulgund, A., Sharma, R., Sabanegh, E. 2014. Mechanisms of Oligozoospermia: An Oxidative Stress Perspective. *Syst Biol Reprod.* Vol. 60 (1): 206-216.
- Agarwal, A., Deepinder, F., Sabanegh Jr, ES. 2010. *Male Infertility (Chapter 16) 1<sup>st</sup> Edition in Evidence-Based Urology.* Florida: Blackwell Publishing Ltd.
- Agarwal, A., Virk, G., Ong, C., Plessis, S. 2014. Effect of Oxidative Stress on Male Reproduction. *World Men Journal Mens Health.* Vol. 32 (1): 1-17.
- Aghamohammadi, A., Shahidi, M. 2011. Male Body Mass Index And Sperm Parameters. *Gynecology:* Vol/ 7 (1): 92-93.
- Aitken, RJ., Keith, TJ., Robertson, SA. 2012. Reactive Oxygen Species and Sperm Function: In Sickness and in Health. *Journal of Andrology.* Vol. 33 (6): 1096-1106.
- Ajayi, AB., Afolabi, BM., Victor, DA., Oyetunji, I., Atiba, A., Ehichioya, J., *et al.* 2018. Semen Parameters Associated with Male Infertility in A Sub-Saharan Black Population: The Effect of Age and Body Mass Index. *J Gynecol Infertil.* Vol. 1 (1): 10-8.
- Al-Kaabi, M., Alshareeda, A., Jerjees, D. Muftah, AA., Green, AR., Alsubhi, NH., *et al.* 2015. Checkpoint Kinase1 (CHK1) is an Important Biomarker in Breast Cancer Having a Role in Chemotherapy Response. *Br J Cancer.* Vol. 112 (1): 901-911.
- Alahmar AT., Ali, Z., Muhsin, Z., Qasim, H. 2018. The Impact of Obesity on Seminal Fluid in Men with Infertility. *Middle East Fertil Society Journal.* Vol. 23 (4): 346-349.
- Albiges, L., Goubar, A., Scott, V., Vicier, C., Lefèbvre, C., Alsafadi, S., *et al.* 2014. Chk1 as a New Therapeutic Target In Triple-Negative Breast Cancer. *Breast.* Vol. 23(3): 250-258.
- Alonso, R., Farías, M., Alvarez, V., Cuevas, A. 2015. *The Genetics of Obesity (Chapter 7) in Translational Cardiometabolic Genomic Medicine 1<sup>st</sup> Edition.* Philadelphia: Elsevier.
- Alshahrani, S., Ahmed, A. F., Gabr, A. H., Abalhassan, M., Ahmad, G. 2016. The Impact of Body Mass Index on Semen Parameters in Infertile Men. *Andrologia.* Vol 48 (10): 1125-1129.
- Alshahrani, S., McGill, J., Agarwal, A. 2013. Prostatitis and Male Infertility. *Journal of Reproductive Immunology.* Vol. 100 (1): 30-36.

- Apriliani, M., Nurcahyani, N., Busman, H. 2013. Efek Pemaparan Kebisingan terhadap Jumlah Sel-Sel Spermatogenik dan Diameter Tubulus Seminiferus Mencit (*Mus musculus* L.). *Seminar Nasional Sains & Teknologi V Lembaga Penelitian Universitas Lampung*.
- Arcidiacono B., Iiritano S., Nocera A., Possidente K., Nevolo M.T., Ventura V., Foti D., Chiefari E., Brunetti A. 2012. Insulin Resistance and Cancer Risk: An Overview of the Pathogenetic Mechanisms. *Journal of Diabetes Research*. Vol. 2012: 1-12.
- Badan Pusat Statistik (BPS) Kabupaten Banyumas. *Jumlah Pasangan Usia Dubur dan Peserta KB Aktif menurut Kecamatan di Kabupaten Banyumas Tahun 2015*. <https://banyumaskab.bps.go.id> (Diakses pada tanggal 2 Mei 2020).
- Bakos, HW., Mitchell, M., Setchell, BP., Lane, M. 2011. The Effect of Paternal Diet-Induced Obesity on Sperm Function and Fertilization in A Mouse Model. *International Journal of Andrology*. Vol. 34 (5): 402-410.
- Bandel, I., Bungum, M., Richtoff, J., Malm, J., Axelsson, J., Pedersen, H. S., *et al.* 2015. No Association Between Body Mass Index and Sperm DNA Integrity. *Human Reproduction*. Vol. 30 (7): 1704-1713.
- Basil, JS., Santoro, SL., Martin, J., Healy, KW., Chini, BA., Saal, HM. 2016. Retrospective Study of Obesity in Children with Down Syndrome. *Journal of Pediatrics*. Vol. 173 (1): 143-148.
- Bates, K. 2014. *Buku Ajar Pemeriksaan Fisik edisi 21*. Jakarta: EGC.
- Bellastella, G., Menafra, D., Puliani, G., Colao, A., Savastano, S., *et al.* 2019. How Much does Obesity Affect the Male Reproduction Function?. *International Journal of Obesity Supplements*. Vol. 1 (1): 1-15.
- Belloc, S., Cohen-Bacrie, M., Amar, E., Izard, V., Benkhalifa, M., Dalle'ac, A., de Mouzon, J. 2014. High Body Mass Index Has a Deleterious Effect on Semen Parameters Except Morphology: Results from a Large Cohort Study. *Fertility and Sterility*. Vol. 102 (5): 1268-1273.
- Bendayan, M., Alter, L., Swierkowski-Blanchard, N., Caceres-Sanchez, L., Selva, J., Robin, G., Boitrelle, F. 2018. Environment and Lifestyle: Impacts on Male Fertility?. *Gynecologie Obstetrique Fertilité et Senologie*. Vol. 46 (1): 47-56.
- Bieniek, JM., Kashanian, JA., Deibert, CM., Grober, ED., Lo, KC., Brannigan RE., *et al.* 2016. Influence of Increasing Body Mass Index on Semen and Reproductive Hormonal Parameters in a Multiinstitutional Cohort of Subfertile Men. *Fertil Steril*: Vol. 106 (1): 1070-1075.

- Bieniek, JM., Kashanian, JA., Deibert, CM., Grober, ED., Lo, KC., Brannigan, RE., *et al.* 2016. Influence of Increasing Body Mass Index on Semen and Reproductive Hormonal Parameters In a Multi-Institutional Cohort of Subfertile Men. *Fertility and Sterility*. Vol. 106 (5):1070-1075.
- Biondi, B. 2015. Thyroid and Obesity: An Intriguing Relationship. *Journal of Clinical Endocrinology and Metabolism*. Vol. 85 (8): 3614-3617.
- BKKBN. 2013. *Pemantauan Pasangan Usia Subur Melalui Mini Survei Indonesia*. Jakarta: BKKBN.
- Byers T., dan Sedjo RL. 2015. Body Fatness as a Cause of Cancer: Epidemiologic Clues to Biologic Mechanisms. *Endocrine-Related Cancer*. Vol. 22 (3): 125-134.
- Campbell, J. M., Lane, M., Owens, J. A., Bakos, H. W. 2015. Paternal obesity negatively affects male fertility and assisted reproduction outcomes: A systematic review and meta-analysis. *Reproductive Biomedicine Online*, 31, 593–604.
- Chavarro, JE., Toth, TL., Wright, DL., Meeker, JD., Hauser, R. 2010. Body Mass Index in Relation to Semen Quality, Sperm DNA Integrity, and Serum Reproductive Hormone Levels among Men Attending an Infertility Clinic. *Fertil Steril*. Vol. 93 (7): 2222-2231.
- Chen, Y., Huang, ZW., Tsai, FS., Chen, CY., Lin, CM., dan Wo, AM. 2011. Analysis of Sperm Concentration and Motility in a Microfluidic Device. *Microfluidics and Nanofluidics*. Vol. 10 (2011): 59-67.
- Choi, J.H., Seung, H.L., Jae, H.B., Ji, S.S., Hong, S.P., Young, S.K., Chol, Shin. 2016. Effect of Sleep Deprivation on the Male Reproductive System in Rats. *Journal Korean Medical Science*. Vol. 31 (10) : 1624-1630.
- Chung, E., Brock, G. B. 2011. Cryptorchidism and its Impact on Male Fertility: A State of Art Review of Current Literature. *Journal of the Canadian Urological Association*. Vol. 5 (3): 210-214.
- Cong, J., Li, P., Zheng, L., dan Tan, J. T. 2016. Prevalence and Risk Factors of Infertility at a Rural Site of Northern China. *PLoS ONE*. Vol. 11 (5): 1-11.
- Coviello, AD., Bremner, WJ., Matsumoto, AM., Herbst, KL., Amory, JK., Anawalt, BD., *et al.* 2004. Intratesticular Testosterone Concentrations Comparable With Serum Levels Are Not Sufficient to Maintain Normal Sperm Production in Men Receiving a Hormonal Contraceptive Regimen. *Journal of Andrology*. Vol. 25 (6): 931-938.
- Craig, JR., Jenkins, TG., Carrell, DT., Hotaling, JM. 2017. Obesity, Male Infertility, and The Sperm Epigenome. *Fertility and Sterility*. Vol. 107 (4): 848-859.

- Crawford, NM., Steiner, AZ. 2015. Age-Related Infertility. *Obstetrics and Gynecology Clinics of North America*. Vol. 42 (1): 15-25.
- Crujeiras, AB., dan Casanueva, FF. 2015. Obesity and The Reproductive System Disorders: Epigenetics as a Potential Bridge. *Human Reproduction Update*. Vol. 21(2): 249-261.
- Cui, H., Lopez, M., Rahmouni, K. 2017. The Cellular and Molecular Bases of Leptin and Ghrelin Resistance in Obesity. *Nature Reviews Endocrinology*. Vol. 13 (6): 338-351.
- Cui, X., Jing, X., Wu, X., Yan, M. 2016. Protective Effect of Resveratrol on Spermatozoa Function in Male Infertility Induced by Excess Weight and Obesity. *Molecular Medicine Reports*. Vol. 14 (5): 4659-4665.
- Dahlan, M S. 2014. *Statistik untuk Kedokteran dan Kesehatan Edisi 6*. Jakarta: Salemba Medika.
- Dannenber, AJ., dan Berger, NA. 2013. *Obesity, Inflammation and Cancer 1<sup>st</sup> Edition*. Switzerland: Springer Nature.
- Dante S. H., Dante S., P, Laurentius, A., Yunir, E., Subekti, I. 2018. Obesity and Central Obesity in Indonesia: Evidence from a National Health Survey. *Medical Journal of Indonesia*. Vol. 27 (1): 114-120.
- Davidson, LM, Millar, K., Jones, C., Fatum, M., Coward, K. 2015. Deleterious Effect of Obesity upon the Hormonal and Molecular Mechanisms Controlling Spermatogenesis and Male Fertility. *Hum Fertil*. Vol. 2015 (18): 184-193.
- Dimitriadis F., Adonakis G., Kaponis A., Mamoulakis C., Takenaka A., Sofikitis N. 2017. *Pre-Testicular, Testicular, and Post-Testicular Causes of Male Infertility In Endocrinology of the Testis and Male Reproduction Edition*. Switzerland: Springer, Cham.
- Divella, R., De Luca, R., Abbate, I., Naglieri, E., Daniele, A. 2016. Obesity and Cancer: The Role of Adipose Tissue and Adipo-Cytokines-Induced Chronic Inflammation. *Journal of Cancer*. Vol. 7 (15): 2346-2359.
- Duits, F. H., Van Wely, M., Van der Veen, F., Gianotten, J. 2010. Healthy Overweight Male Partners of Subfertile Couples Should Not Worry About Their Semen Quality. *Fertility and Sterility*. Vol. 94 (4):1356-1359.
- Dupont, C., Faure, C., Sermondade, N., Boubaya, M., Eustache, F., Clement, P., *et al.* 2013. Obesity Leads to Higher Risk of Sperm DNA Damage in Infertile Patients. *Asian Journal of Andrology*. Vol. 15 (5): 622-625.
- Eisenberg, M. L., Kim, S., Chen, Z., Sundaram, R., Schisterman, E. F., dan Buck

- Louis, G. M. 2014. The Relationship Between Male BMI and Waist Circumference on Semen Quality: Data from The LIFE Study. *Human Reproduction*. Vol. 30 (2): 193-200.
- Elfira NgI, Wiratmini AASA Sukmaningsih. 2010. Motilitas dan Viabilitas Spermatozoa Mencit (*Mus musculus*) Setelah Pemberian Ekstrak Temu Putih (*Curcuma zedoaria*). *Jurnal Biologi*. Vol 15 (1): 20-23
- El Salam, MAA. 2018. Obesity, An Enemy of Male Fertility: A Mini Review. *Oman Med J*. Vol. 33 (1): 3-6.
- Ellies, LG., Johnson, A., dan Olefsky, JM. 2013. Obesity, Inflammation, and Insulin Resistance in Obesity, *Inflammation and Cancer 1<sup>st</sup> Edition*. Switzerland: Springer Nature.
- Erris, Harahap, I. 2014. Pengaruh Kebisingan Terhadap Kuantitas Dan Kualitas Spermatozoa Tikus Putih (*Rattus norvegicus*) Jantan Dewasa. *Media Litbangkes*. 24 (3): 123-128.
- Eskandar, M, Al-Asmari, M., Chaduvula, SB., Al-Shahrani, M., Al-Sunaidi, M., Almushait, M., *et al*. 2012. Impact of Male Obesity on Semen Quality and Serum Sex Hormones. *Advances in Urology*. Vol. 2012 (1): 1-12.
- Fan, W., Xu, Y., Liu, Y., Zhang, Z., Lu, L., Ding, Z. 2018. Obesity or Overweight, a Chronic Inflammatory Status in Male Reproductive System, Leads to Mice and Human Subfertility. *Frontiers in Physiology*. Vol. 8 (1117): 1-11.
- Fariello, RM., Pariz, JR., Spaine, DM., Cedenho, AP., Bertolla, RP., Fraietta, R. 2012. Association Between Obesity and Alteration of Pperm DNA Integrity and Mitochondrial Activity. *British Journal of Urology*. Vol. 110 (6): 863-867.
- Ferial, EW. 2016. Kajian Infertilitas Pria dan Usaha Penanganannya. *Prosiding Seminar Nasional from Basic Science to Comprehensive Education*. Jurusan Biologi, Fakultas Sains dan Teknologi, UIN Alauddin Makassar.
- Ferial, EW., Muchlis, A. 2013. Kajian Pemeriksaan Makroskopik Spermatozoa Manusia melalui Pemberian Nutrisi Kerang Darah (*Andara Granosa L.*). *Jurnal Sainsmat*. Vol. 2 (1): 1-13.
- Franken, DR., Oehninger, S. 2012. Semen Analysis and Sperm Function Testing. *Asian Journal of Andrology*. Vol. 14 (1): 6-13.
- Fraczek, M., Kurpisz, M. 2015. Cytokines In The Male Reproductive Tract And Their Role In Infertility Disorders. *Journal of Reproductive Immunology*. Vol. 108 (2015). 98-104.



- Garolla, A., Torino, M., Miola, P., Caretta, N., Pizzol, D., Menegazzo, M., *et al.* 2015. Twenty-Four-Hour Monitoring of Scrotal Temperature in Obese Men and Men with a Varicocele as a Mirror of Spermatogenic Function. *Human Reproduction*. Vol. 30 (5): 1006-1013.
- Gonzalez-Marin, C., Gosálvez, J., dan Roy, R. 2012. Types, Causes, Detection and Repair of DNA Fragmentation in Animal and Human Sperm Cells. *International Journal of Molecular Sciences*. Vol. 13 (11): 14026-14052.
- Gonzalez, BMA., Gottifredi V. 2015. The Fork and The Kinase: A DNA Replication Tale from a CHK1 Perspective. *Mutat Res Rev Mutat Res*. Vol. 763 (1): 168-180.
- Goto, H., Kasahara, K., Inagaki, M. 2015. Novel Insights Into Chk1 Regulation by Phosphorylation. *Cell Struct Funct*. Vol. 40 (1): 43-50.
- Grabocka, E., Commisso, C., dan Bar-Sagi, D. 2015. Molecular Pathways: Targeting The Dependence of Mutant RAS Cancers on The DNA Damage Response. *Clinical cancer research : an official journal of the American Association for Cancer Research*. Vol. 21 (6): 1243-1247.
- Guyton, AC., Hall, JE. 2014. *Buku Ajar Fisiologi Kedokteran Edisi 13*. Jakarta: EGC.
- Hajshafiha, M., Ghareaghaji, R., Salemi, S., Sadegh-Asadi, N., Sadeghi-Bazargani, H. 2013. Association of Body Mass Index with some Fertility Markers among Male Partners of Infertile Couples. *International Journal of General Medicine*. Vol. 6 (1): 447-451.
- Hao, TW., Jie, ZX., Lin, ML., Jie, Q., Kai, H., Ming, ZL., *et al.* 2015. Correlation Between Body Mass Index and Semen Quality in Male Infertility Patients. *Turkish Journal Medical Sciences*. Vol. 45 ( ): 1300-1305.
- Health and Social Care Information Centre. 2015. *Statistics on Obesity, Physical Activity and Diet*. Health and Social Care Information Centre.
- Hedger, MP. 2011. Immunophysiology and Pathology of Inflammation in the Testis and Epididymis. *Journal of Andrology*. Vol. 32 (6): 625-640.
- Hernandez, RL., Gualdron, J., Camejo, MI., Judith, V., Antonio, V. 2017. Markers of Accessory Glands and Seminal Parameters in Infertile Men with Overweight and Obesity. *Journal of Metabolic Syndrome*. Vol. 6 (3): 1-4.
- HIFERI (Himpunan Endokrinologi Reproduksi dan Fertilitas Indonesia). 2013. *Konsensus Penanganan Infertilitas*. Himpunan Endokrinologi Reproduksi dan Fertilitas Indonesia.

- Hiola, Z., Tendean, L., Wantouw, B. 2013. Pengaruh Obesitas terhadap Terjadinya Disfungsi Seksual Pria. *Jurnal e-Biomedik*. Vol. 1 (1): 686-690.
- Hofny, ERM., Ali, ME., Abdel-Hafez, HZ., Kamal, EED., Mohamed, EE., Azeem, HGAE., *et al.* 2010. Semen Parameters and Hormonal Profile in Obese Fertile and Infertile Males. *Fertility and Sterility*. Vol. 94 (2): 581-584.
- Ibrahim, OF., dan Amir, A. 2015. Hubungan Obesitas dengan Hormon Testosteron pada Mahasiswa STIKes Indonesia Padang. *Jurnal Kesehatan Andalas*. Vol. 4 (3): 772-776.
- Ilacqua, A., Izzo, G., Emerenziani, G. Pietro, Baldari, C., dan Aversa, A. 2018. Lifestyle and Fertility: The Influence of Stress and Quality of Life on Male Fertility. *Reproductive Biology and Endocrinology*. Vol. 115 (2018): 1-11.
- Indarwati, I., Hastuti, Uki, RB., and Dewi, YLR. 2017. Analysis of Factors Influencing Female Infertility. *Journal of Maternal and Child Health*. Vol. 2 (2): 150-161.
- Jarow, J.P., Chen, H., Rosner, W., Trentacoste, S., Zirkin, B.R. 2005. Assesment of Androgen Environment Within The Human Testis Minimally Invasive Methode to Obtain Intratesticular Fluid. *Journal of Andrology*. Vol 22 (4): 640-645.
- Janssen, I., Heymsfield, SB., Allison, DB., Kotler, DP., dan Ross, R. 2017. Body Mass Index and Waist Circumference Independently Contribute to The Prediction of Nonabdominal, Abdominal Subcutaneous, and Visceral Fat. *American Journal of Clinical Nutrition*. Vol. 75 (4): 683-688.
- Jensen, TK., Andersson, AM., Jorgensen, N., Andersen, AG., Carlsen, E., Petersen, JH., dan Skakkebaek, NE. 2004. Body Mass Index in Relation to Semen Quality and Reproductive Hormones Among 1558 Danish Men. *Fertility and Sterility*: Vol. 82 (4):863-870.
- Kashou, AH., Stefan, S., Plessis, D., dan Agarwal, A. 2012. The Role of Obesity in ROS Generation and Male Infertility. *Men's Health and Fertility*. Vol. 1 (2012): 1-10.
- Katib, A. 2015. Mechanisms Linking Obesity to Male Infertility. *Cent European J Urol*. Vol. 68 (1): 79-85.
- Kaur J. A Comprehensive Review On Metabolic Syndrome. 2014. *Cardiol Res Pract*. Vol. 2014 (1): 1-21.
- Kementrian Kesehatan Republik Indonesia (Kemenkes). 2018. Bahan Ajar Rekam Medis dan Informasi Kesehatan (RMIK): Metodologi Penelitian Kesehatan. Jakarta: Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan.

- Kerr, J., Anderson, C., dan Lippman, S. M. 2017. Physical Activity, Sedentary Behaviour, Diet, and Cancer: an update and emerging new evidence. *The Lancet Oncology*. Vol. 18 (8): 457-471.
- Kesari, K. K., Agarwal, A., dan Henkel, R. 2018. Radiations and Male Fertility. *Reproductive Biology and Endocrinology*. Vol. 118 (2018): 1-16.
- Khatimah, Khusnul. 2015. Kadar Testosteron Intratestikular Tikus *Rattus norvegicus* Strain *Sparague dawley* Akibat Pemberian Kurkumin Setelah Stimulasi HCG. *Berkala Kedokteran*. Vol 11 (2): 189-197.
- Kheradmand, A., Mombeini, H., Afroogh, M., Mousavinezhad, M., Ghalambaz, E. 2017. Examining The Association of Body Mass Index and Waist Circumference with Semen Analysis Parameters among Infertile Men. *Journal of Medical Pharmaceutical and Allied Sciences*. Vol 6 (2017): 784-796.
- Kothari, S., Thompson, A., Agarwal, A., dan du Plessis, SS. 2010. Free Radicals: Their Beneficial And Detrimental Effects On Sperm Function. *Indian Journal of Experimental Biology*. Vol. 48 (5): 425-435.
- Kovac, JR., Smith, RP., Cajipe, M., Lamb, D. J., dan Lipshultz, LI. 2017. Men With A Complete Absence Of Normal Sperm Morphology Exhibit High Rates Of Success Without Assisted Reproduction. *Asian Journal Of Andrology*. Vol. 19 (1): 39-42.
- La Vignera, S., Condorelli, R. A., Vicari, E., dan Calogero, A. E. 2012. Negative Effect Of Increased Body Weight on Sperm Conventional and Nonconventional Flow Cytometric Sperm Parameters. *Journal of Andrology*. Vol. 33 (1): 53-69, 53-58.
- Lestari, SW., dan Triana, S. 2015. Fragmentasi DNA Spermatozoa: Penyebab, Deteksi, dan Implikasinya pada Infertilitas Laki-Laki. *Departemen Biologi Medik Fakultas Kedokteran Universitas Indonesia*. Vol. 3 (2): 152-160.
- Liu, Y., dan Ding, Z. 2017. Obesity, a Serious Etiologic Factor for Male Subfertility in Modern Society. *Reproduction*. Vol. 154 (4): 123-131.
- Luque, EM., Tissera, A., Gaggino, MP., Molina, RI., Mangeaud, A., Vincenti, LM., et al. 2017. Body Mass Index and Human Sperm Quality: Neither One Extreme Nor The Other. *Reproduction Fertility and Development*. Vol. 29 (4): 731-739.
- Ma, J., Wu, L., Zhou, Y., Zhang, H., Xiong, C., Peng, Z., et al. 2019. Association Between BMI and Semen Quality: An Observational Study of 3966 Sperm Donors. *Human Reproduction*. Vol. 34 (1): 155-162.



- MacDonald, AA., Herbinson, GP., Showell, M., dan Farquhar, CM. 2010. The Impact of Body Mass Index on Semen Parameters and Reproductive Hormones in Human Males: A Systematic Review with Meta-Analysis. *Human Reproduction Update*. Vol. 16 (3): 293-311.
- Macdonald, AA., Stewart, AW., Farquhar CM. 2013. Body Mass Index in Relation to Semen Quality and Reproductive Hormones in New Zealand Men: A Cross-Sectional Study in Fertility Clinics. *Human Reproduction*. Vol. 28 (12): 3178-3187.
- Mah, PM., dan Wittert, GA. 2010. Obesity and Testicular Function. *Mol Cell Endocrinol*. Vol. 2010 (316): 180-186.
- Marques-Pinto, A., dan Carvalho, D. 2013. Human Infertility: Are Endocrine Disruptors to Blame?. *Endocrine Connections*. Vol. 2 (3): 15-29.
- Martini, F. 2012. *Fundamentals of Anatomy and Physiology 9<sup>th</sup> Edition*. San Fransisco: Pearson Education.
- Mayes, JS., dan Watson, GH. 2014. Direct Effects of Sex Steroid Hormones on Adipose Tissues and Obesity. *Obesity Reviews*. Vol. 5 (4): 197-216.
- Meremer, M., dan Akdevelioglu, Y. 2018. The Role of Obesity in Male Fertility. *International Journal of Reproduction Contraception, Obstetric and Gynecology*. Vol. 7 (9): 3435-3440.
- Mihardja, L., Soetrisno, U. 2012. Prevalence and Determinant Factors for Overweight and Obesity and Degenerative Diseases among Young Adults in Indonesia. *JAFES*. Vol. 27(1):77-81.
- Mui, P., Hill, SE., Thorpe, RJ. 2018. Overweight and Obesity Differences Across Ethnically Diverse Subgroups of Asian American Men. *American Journal of Men's Health*. Vol. 12 (6): 1958-1965.
- Mustofa, S. 2010. *Sindrom Metabolik dan Defisiensi Testosteron, Biosintesis Testosteron dan Obesitas testosteron*. Jakarta: Fakultas Kedokteran Universitas YARSI.
- Naderpoor, N., Shorakae, S., Joham, A., Boyle, J., De Courten, B., dan Teede, H. J. 2015. Obesity and Polycystic Ovary Syndrome. *Minerva endocrinologica*. Vol. 40 (1): 37-51.
- Oh, M. M., Kim, J. W., Jin, M. H., Kim, J. J., Moon, D. G. 2012. Influence of Paradoxical Sleep Deprivation and Sleep Recovery on Testosterone Level in Rats of Different Ages. *Asian Journal of Andrology*. 14(2) : 330-334.
- Oliveira, JBA., Petersen, CG., Mauri, AL., Vagnini, LD., RenziA., Petersen, B., *et al.* 2017. Association Between Body Mass Index and Sperm Quality and

- Pperm DNA Integrity. A Large Population Study. *Andrologia*. Vol. 50 (3): 1-10.
- Oussaada, S.M., Van Galen, KA., Cooiman, MI., Kleinendorst, L., Hazebroek, E. J., Van Haelst *et al.* 2019. The Pathogenesis of Obesity. *Metabolism: Clinical and Experimental*. Vol. 19 (1): 26-36.
- Palmer, NO., Bakos, HW., Fullston, T., and Lane, M. 2012. Impact of Obesity on Male Fertility, Sperm Function and Molecular Composition. *Spermatogenesis*. Vol. 2 (4): 253-263.
- Permatasari, A., Widhiantara, I. 2017. Terapi Testosteron Meningkatkan Jumlah Sel Leydig dan Spermatogenesis Mencit (*Mus Musculus*) yang Mengalami Hiperlipidemia. *Jurnal Media Sains*. Vol 1 (2) : 77-83.
- Ramaraju, G.A., Teppala, S., Prathigudupu, K., Kalagara, M., Thota, S., Kota, M., dan Cheemakurthi, R. 2018. Association Between Obesity and Sperm Quality. *Andrologia*. Vol. 50 (3): 1-12.
- Relawani, R., Berger, D., Santoro, N., Hickmon, C., Nihsen, M., Zapantis, A., *et al.*, 2015. Parameters are Unrelated to BMI But Vary With SSRI Use and Prior Urological Surgery. *Reproductive Science*. Vol. 18 (4): 391-397.
- Ridhoila, R., Yusrawati dan Amir, A. 2017. Perbandingan Kualitas Spermatozoa pada Analisis Semen Pria dari Pasangan Infertil dengan Riwayat Merokok dan Tidak Merokok. *Jurnal Kesehatan Andalas*. Vol. 6(2): 259-264.
- Riset Kesehatan Dasar (Riskesdas). 2013. *Pokok-Pokok Hasil Riskesdas Indonesia 2013*. Badan Penelitian dan Pengembangan Kesehatan Kementerian RI tahun 2013. <http://www.depkes.go.id/resources/download/general/hasil/riskesdas2013.pdf>. (Diakses pada tanggal 2 Mei 2020).
- Rizzo, DC. 2010. *Fundamentals of Anatomy and Physiology 3th Edition*. Clifton Park, NY: Delmar, Cengage Learning.
- Ross and Wilson. 2011. *Dasar-dasar Anatomi dan Fisiologi*. Penerjemah Elly Nurachmah dan Rida Angraini. Jakarta: Salemba Medika.
- Rybar, R., Kopecka, V., Prinosilova, P., Markova, P., Rubes, J. 2011. Male Obesity and Age in Relationship to Semen Parameters and Sperm Chromatin Integrity. *Andrologia*. Vol. 43 (4): 286-291.
- Sa'adah, N., dan Purnomo, W. 2016. Karakteristik dan Perilaku Berisiko Pasangan Infertil di Klinik Fertilitas dan Bayi Tabung Tiara Cita Rumah Sakit Putri Surabaya. *Jurnal Biometrika dan Kependudukan*. Vol. 5 (1): 61-69.
- Salam, MAAE. 2018. Obesity, An Enemy of Male Fertility: A Mini Review. *Oman Medical Journal*. Vol. 33 (1): 3-6.

- Samsell, L., Regier, M., Walton, C., dan Cottrell, L. 2014. Importance of Android/Gynoid Fat Ratio in Predicting Metabolic and Cardiovascular Disease Risk in Normal Weight as well as Overweight and Obese Children. *Journal of Obesity*. Vol. 2014 (1): 1-7.
- Schieber, M., and Chandel, N. S. 2014. ROS Function in Redox Signaling and Oxidative Stress. *Current Biology*. 24(10) : R453–R462.
- Schulte, RT., Ohl, DA., Sigman, M., dan Smith, GD. 2010. Sperm DNA Damage in Male Infertility: Etiologies, Assays, and Outcomes. *Journal of Assisted Reproduction and Genetics*. Vol. 27 (1): 3-12.
- Sermondade, N., Faure, C., Fezeu, L., Shayeb, AG., Bonde, JP., Jensen, TK., *et al.* 2013. BMI in Relation to Sperm Count: An Updated Systematic Review and Collaborative Meta-Analysis. *Human Reproduction Update*. Vol. 19 (3): 221-231.
- Serodio, KJ., Ardern, CI., Rotondi, MA., dan Kuk, JL. 2014. Tricyclic and SSRI Usage Influences the Association between BMI and Health Risk Factors. *Clinical Obesity*. Vol. 4 (1): 296-302.
- Sharma, R., Biedenharn, KR., Fedor, JM., Agarwal, A. 2013. Lifestyle Factors and Reproductive Health: Taking Control of Your Fertility. *Reproductive Biology and Endocrinology*. Vol.11 (66): 1-15.
- Shayeb, AG., Harrild, K., Mathers, E., dan Bhattacharya, S. 2011. An Exploration of The Association Between Male Body Mass Index and Semen Quality. *Reproductive Biomedicine Online*. Vol. 23 (6): 717-723.
- Sherwood, L. 2014. *Fisiologi Manusia dari Sel ke Sistem Edisi 8*. Philadelphia: Elsevier.
- Smith, S., Holtel, M., Wynia, B., dan Roudebush, WE. 2019. Sperm Motility and Morphology is Affected by Body Mass Index. *Archives of Urology*. Vol 2 (6): 1-4.
- Stigler, FL., Lustig, RH., dan Ma, JI. 2017. Mechanisms, Pathophysiology, and Management of Obesity. *New England Journal of Medicine*. Vol. 2017 (376): 1490-1492.
- Sukmaningsih, A., I Gusti, A., Intan, W., Wayan, S. 2011. Gangguan Spermatogenesis Setelah Pemberian Monosodium Glutamat Pada Mencit (Mus Musculus L). *Jurnal Biologi*. Vol 15 (2): 49-52.
- Sugiyono. 2016. *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Afabeta.

- Susetyarini, R. E. 2015. Jumlah Sel Spermiogenesis Tikus Putih yang Diberi Tanin Daun Beluntas (*Pluchea indica*) sebagai Sumber Belajar. *Seminar Nasional XII Pendidikan Biologi FKIP UNS*. Solo
- Tabesh, H., Saki, A., dan Pourmotahari, F. 2013. Comparing Two Formulas of Sample Size Determination for Prevalence Studies. *Iranian Journal of Health Sciences*. Vol.1 (2): 56-60
- Taha, EA., Sayed, SK., Gaber, HD., Abdel Hafez, HK., Ghandour, N., Zahran, A., dan Mostafa, T. 2016. Does Being Overweight Affect Seminal Variables in Fertile Men?. *Reproductive Biomedicine Online*. Vol. 33 (6): 703-708.
- Thomsen, L., Humaidan, P., Bungum, L., dan Bungum, M. 2014. The Impact of Male Overweight on Semen Quality and Outcome of Assisted Reproduction. *Asian Journal of Andrology*. Vol. 16 (5): 749-754.
- Torres, SJ., dan Nowson, CA. 2017. Relationship between Stress, Eating Behavior, and Obesity. *Nutrition*. Vol. 23 (11-12): 887-894.
- Tsao, CW., Liu, CY., Chou, YC., Cha, TL., Chen, SC., Hsu, CY. 2015. Exploration of the Association between Obesity and Semen Quality in a 7630 Male Population. *PLOS ONE*. Vol. 10 (3): 1-13.
- Vander Borgh, M., dan Wyns, C. 2018. Fertility and Infertility: Definition and Epidemiology. *Clinical Biochemistry*. Vol 62 (1): 2-10.
- Ventimiglia, E., Capogrosso, P., Serino, A., Boeri, L., Colicchia, M., Croce, GL., et al. 2016. Metabolic Syndrome in White-European Men Presenting for Secondary Couple's Infertility: an Investigation of The Clinical and Reproductive Burden. *Asian Journal of Andrology*. Vol. 2017 (19): 368-373.
- Waghmare, VS., Jiwane, R., Sadawarte, SK., Gajbhiye, V., Rahule, AS. 2014. Effect of Increasing BMI on Routine Semen Parameters in Young Adult Males. *J Cont Med A Den*. Vol. 2 (3):33-37.
- Wagner, H., Cheng, J. W., dan Ko, E. Y. 2017. Role of Reactive Oxygen Species In Male Infertility: An Updated Review Of Literature. *Arab Journal of Urology*. Vol. 16 (1): 35-43.
- Wahyuni, T.L., Adnil, EN., Eliza, A. 2015. Pengaruh Gangguan Tidur Terhadap Kadar Testosteron dan Jumlah Spermatozoa Pada Tikus Jantan Wistar. *Jurnal Kesehatan Andalas*. 4 (3): 835-840.
- Wang, E., Huang, Y., Du, Q., Yao, G., dan Sun, Y. 2017. Body mass index effects sperm quality: a retrospective study in Northern China. *Asian Journal of Andrology*. Vol. 2017 (19): 234-237.

- Winkjosastro. 2011. *Ilmu kandungan*. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo.
- World Health Organization (WHO) Expert Consultation. 2004. Appropriate Body-mass Index for Asian Populations and its Implications for Policy and Intervention Strategies. *Lancet (London, England)*. Vol. 363 (9403): 157-163.
- World Health Organization (WHO). 2000. *International Association for the Study of Obesity (IASO) and International Obesity Task Force (IOTF). The Asia-Pacific Perspective: Redefining Obesity and its Treatment*. Geneva: World Health Organization. Hal. 378-420.
- World Health Organization (WHO). 2003. *Diet, Nutrition and the Prevention of Chronic Diseases*. Geneva: World Health Organization (Diakses pada 25 Juni 2020).
- World Health Organization (WHO). 2010. *WHO Laboratory Manual for the Examination and Processing of Human Semen 5th Edition*. Geneva: World Health Organization (Diakses pada 25 Juni 2020).
- World Health Organization (WHO). 2012. *WHO Infertility : A Tabulation of Available Data on Primary and Secondary Infertility*. Geneva: World Health Organization. <https://apps.who.int/iris/handle/10665/59769>. (Diakses pada 25 Juni 2020).
- World Health Organization (WHO). 2020. *Sexual and Reproduction Health: Infertility Definitions and Terminology*. <https://www.who.int/> (Diakses pada 25 Juni 2020).
- Zhang, J., Yang, B., Cai, Z., Li, H., Han, T., dan Wang, Y. 2019. The Negative Impact of Higher Body Mass Index on Sperm Quality and Erectile Function: A Cross-Sectional Study Among Chinese Males of Infertile Couples. *American Journal of Men's Health*. Vol. 2019 (1): 1-8.
- Zribi, N., Chakroun, NF., Elleuch, H., Abdallah, FB., Hamida, A., Gargouri, J., et al. 2011. Sperm DNA Fragmentation and Oxidation are Independent of Malondialdehyde. *Reproductive Biology and Endocrinology*. Vol. 9 (47): 1-8.