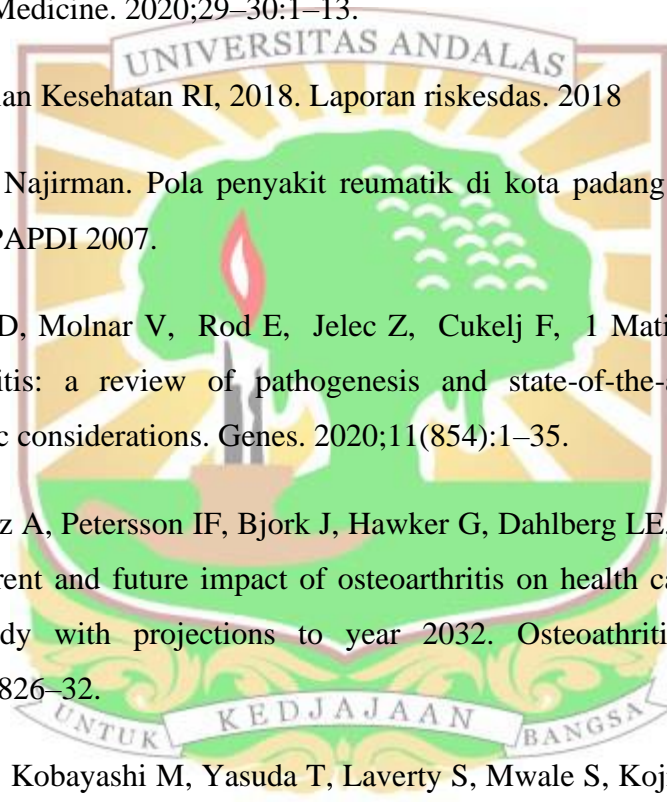


DAFTAR PUSTAKA

1. Soeroso J, Isbagio H, Kalim H, Broto R, Pramudio R. Osteoarthritis. Dalam: Setiati S, Alwi I, Sudoyo A, Simadibrata M, Setyohadi B, Syam A, ed. Buku Ajar Ilmu Penyakit Dalam Jilid III Edisi VI. Jakarta: Interna Publishing; 2015;3197–209.
2. Cui A, Li H, Wang D, Zhong J, Chen Y, Lu H. Global, regional prevalence, incidence and risk factors of knee osteoarthritis in population-based studies. *EClinicalMedicine*. 2020;29–30:1–13.
3. Kementerian Kesehatan RI, 2018. Laporan riskesdas. 2018
4. Hasan H, Najirman. Pola penyakit reumatik di kota padang: Naskah lengkap KONAS PAPDI 2007.
5. Primorac D, Molnar V, Rod E, Jelec Z, Cukelj F, Maticic V et al. Knee osteoarthritis: a review of pathogenesis and state-of-the-art non-operative therapeutic considerations. *Genes*. 2020;11(854):1–35.
6. Turkiewicz A, Petersson IF, Bjork J, Hawker G, Dahlberg LE, Laohmander LS, et al. Current and future impact of osteoarthritis on health care: a population-based study with projections to year 2032. *Osteoarthritis and Cartilage*. 2014;22:1826–32.
7. Poole AR, Kobayashi M, Yasuda T, Lavery S, Mwale S, Kojima T, et al. Type II collagen degradation and its regulation in articular cartilage in osteoarthritis. *Ann Rheum Dis*. 2002;61(2): ii78–ii81.
8. Kapoor M, Pelletier J, Lajeunesse D, Pelletier JP, Fahmi H. Role of proinflammatory cytokines in the pathophysiology of osteoarthritis. *Nat Rev Rheumatol*. 2011;7:3342.



- 9 Jacques C, Gosset M, Berenbaum F, Gabay C. The role of il-1 and il-1Ra in joint inflammation and cartilage degradation. *Vitam Horm.* 2006;74:371–403
10. Berenbaum F. Osteoarthritis pathology and pathogenesis. In primer on rheumatic disease 13th ed. Springer Science. New York. 2008:229–34.
11. IGN EI, Tjokorda RP, Gede K. Korelasi matrix metalloproteinase 3 (MMP-3) dengan derajat beratnya osteoarthritis lutut. *J Peny Dalam.* 2011;12(3):181–92.
12. Samppson ER, Jin H, Li J, Ke QH, Im HJ et al. MMP-13 is a critical target gene during the progression of osteoarthritis. *Arthritis Research & Therapy.* 2013;15(R5):1–11.
13. Zhang W, Sun G, Likhodii S, Aref E, Harper P, Randell E. Metabolic analysis of human synovial fluid and plasma reveals that phosphatidylcholine metabolism is associated with both osteoarthritis and diabetes mellitus. *Metabolics.* 2016;12(24):1-10.
14. Magnusson K, Hagen KB, Osterss N, Nordsetten L, Natvig B, Haugen IK. Diabetes is associated with increased hand pain in erosive hand osteoarthritis: data from a population-based study. *Arthritis Care Res (Hoboken).* 2015;67:187–95.
15. Nieves PM, Castro S, Yvonne MF, Angel MM, Luis MV. Association of Hand or Knee Osteoarthritis With Diabetes Mellitus in a Population of Hispanics From Puerto Rico. *J Clin Rheumatol.* 2013;19(1):1–6.
16. Francesca C, Gianluca V, Luca A, Nicola N, Rocco P, Vincenzo D *et al.* Osteoarthritis and type 2 diabetes: from pathogenetic factors to therapeutic intervention. *Diabetes Metab Res Rev.* 2019;e3254:1–15.
17. King KB, Rosenthal AK. The adverse effects of diabetes on osteoarthritis: update on clinical evidence and molecular mechanisms. *Osteoarthritis Cartilage.* 2015;23(6):841–50.

18. Rosa CS, Goncalves J, Judas F, Mobasheri A, Lopes C, Mendes AF. Impaired glucose transporter-1 degradation and increased glucose transport and oxidative stress in response to high glucose in chondrocytes from osteoarthritic versus normal human cartilage. *Arthritis Research & Therapy*. 2008;11(3):1–11.
19. Shin D. Association between metabolic syndrome, radiographic knee osteoarthritis, and intensity of knee pain : results of a national survey. *The Journal Of Clinical Endocrinology & Metabolism*. 2014;99(9):317–3183.
20. Sturmer T, Brenner H, Brenner RE, Gunther KP. Non-insulin dependent diabetes mellitus (NIDDM) and patterns of osteoarthritis. *Scand J Rheumatol*. 2001;30(3):16 –171.
21. Sharma L. Osteoarthritis of the knee. *N Engl J Med*. 2021;384(1):1-9
22. Miranda MM , Cuazitl AM , Robles CI , Gonzalez JE, Hernandez JS , ZapienaGJ. Biochemical similarity between cultured chondrocytes and in situ chondrocytes by chemometric analysis from FTIR microspectroscopy. *Biotechnology Reports*. 2019;24:e00391.
23. Perhimpunan Reumatologi Indonesia. Buku saku reumatologi. Perhimpunan Reumatologi Indonesia. 2020;20–26.
24. Kohn MD, Sassoon AA, Fernando ND. Classifications in Brief: Kellgren-lawrence classification of osteoarthritis. *Clin Orthop Relat Res*. 2016;474(8):1886–93.
25. Shariatzadeh M, Song J dan Wilson SL. The efficacy of different sources of mesenchymal stem cells for the treatment of knee osteoarthritis. *Cell and Tissue Research*. 2019;378(3):399–410.
26. Winangun W. Diagnosis dan tatalaksana komprehensif osteoarthritis. *J Kedokt*. 2019;5(1):125.

27. Elzohry AAM, Saad BG. Platelet-rich plasma (PRP) is a new hope for patients with knee joint osteoarthritis. *ARC J Orthop*. 2019;4(2):1–7.
28. Johnson VL, Hunter DJ. The epidemiology of osteoarthritis. *Best practice and research clinical rheumatology*. 2014;28:5–15.
29. Mutmainah S, Made GGN, Mentari YA, Gustina E, Handani MC, Sirait A, *et al*. Hubungan obesitas dan faktor-faktor pada individu dengan kejadian osteoarthritis genu. *J Berk Epidemiol*. 2019;2(1).93-104.
30. Nugraha AS, Widyatmoko S, Jatmiko SW. Hubungan obesitas dengan osteoarthritis lutut pada lansia di kelurahan puncangsawit kecamatan laweyan surakarta. *Biomedika*. 2015;7(1):15–8.
31. National Diabetes Fact Sheet: National diabetes statistics report, 2014. Atlanta, GA: Centers for Disease Control and Prevention. 2014.
32. Guariguata L, Whiting DR, Hambleton I, Beagley J, Linnenkamp U, Shaw JE. Global estimates of diabetes prevalence for 2013 and projections for 2035. *Diabetes Research and Clinical Practice*. 2014;103(2):137–49.
33. Kaneko N, Kurata M, Yamamoto T, Morikawa S, Masumoto J. The Role of interleukin-1 in general pathology. *Inflammation and Generation*. 2019;39(12):1–16.
34. Schett G, Dayer JM, Manger B. Interleukin-1 function and role in rheumatic disease. *Nature Review Rheum*. 2016;12:1–11.
35. Rigoglou S, Athanios, Papavassiliou. The NF- κ B signalling pathway in osteoarthritis. *The International journal of Biochemistry & Cell Biology*. 2013;45:2580–4.
36. Jung P dan Zimowska M. Matrix metalloproteinase in development, physiology and degenerative processes of skeletal muscles. *Postepy Biochem*. 2016;62(1):25–35.

37. Lanzl ZJ, Meurer A, Zaucke F. Interleukin-1 β signaling in osteoarthritis-chondrocytes in focus. *Cellular Signalling*. 2019;53:212–23.
38. Terence MD, Kamlesh A, Duanqing P, Hiroyasu U, Douglas J, Prediman KS, et al. Therapeutic developments in matrix metalloproteinase inhibition. *Expert Opin Ther Patents*. 2002;12(5):665–89.
39. Mondal S, Adhikari N, Banerjee S, Amin AS, Jha Tarun. Matrix metalloproteinase-9 (MMP-9) and its inhibitors in cancer: A minireview', *European Journal of Medicinal Chemistry*. 2020;194:p.112260.
40. Qichan H, Ecker M. Overview of MMP-13 as a promising target for the treatment of osteoarthritis. *Int. J. Mol.* 2021;22(1742):1–22.
41. Sayed E, Asmaa FK, Samar S. The role of matrix metalloproteinases in osteoarthritis pathogenesis: An Update Review. *Life Sciences*. 2019;234(116786):1–8.
42. Perkumpulan Endokrinologi Indonesia. Pedoman pengelolaan dan pencegahan diabetes melitus tipe 2 dewasa di Indonesia. 2021.
43. Decroli E. Dasar-dasar terjadinya DM tipe 2. *Diabetes Melitus Tipe 2*. 2019:4–9.
44. King K, Rosenthal A. The adverse effects of diabetes on osteoarthritis: update on clinical evidence and molecular mechanisms. *Osteoarthritis Cartilage*. 2015;23(6):841–50.
45. Magnusson K, Hagen K, Osterss N, Nordsletten L, Natvig B, Haugen IK. Diabetes is associated with increased hand pain in erosive hand osteoarthritis: data from a population-based study. *Arthritis Care Res (Hoboken)* 2015;67:187–95.
46. Murata K, Uchida K, Takano S, shoji S, Iwase D, Inouse G, et al. Osteoarthritis patients with high haemoglobin A1c have increased Toll-like receptor 4 and matrix metalloprotease-13 expression in the synovium.

- Diabetes Metab Syndr Obes. 2019;12: 1121–9.
47. Haywood L, McWilliams DF, Pearson CI, Gill SE, Ganesan A, Wilson D et al. Inflammation and angiogenesis in osteoarthritis. *Arthritis Rheum.* 2003;48(8): 2173–7.
 48. Ashrafizadeh H, Ashrafizadeh M, Oroojan AA. Type 2 Diabetes mellitus and osteoarthritis: the role of glucose transporters. *Clinic Rev Bone Miner Metab.* 2020;18:1–17.
 49. Rosa C, Goncalves J, Judas F, Mobasheri A, Lopes C, Mendes AF. Impaired glucose transporter-1 degradation and increased glucose transport and oxidative stress in response to high glucose in chondrocytes from osteoarthritic versus normal human cartilage. *Arthritis Research & Therapy.* 2008;11(3):1–11.
 50. Dieppe P. Osteoarthritis clinical features. In *Primer on Rheumatic Disease* 13th ed. Springer Science. New York. 2008:229–34.
 51. Reginato AM, Riera H, Vera M, Torres AR, Espinosa R, Esquivel JA, Felipe OJ et al. Osteoarthritis in Latin America. *J Clin Rheumatol.* 2015;21:391–7.
 52. Ahmad IW, Rahmawati LD, Wardhana TH. Demographic Profile, Clinical and Analysis of Osteoarthritis Patients in Surabaya. *Biomolecular and Health Science Journal.* 2018;1(01):34–9.
 53. Haq I, Murphy E, Dacre. J. Osteoarthritis. *Postgrad Med J.* 2003;79:177–83.
 54. Sacitharan P. Ageing and osteoarthritis. *Subcell Biochem.* 2019;91:123–59.
 55. Pal CP, Singh P, Chaturvedi S, Pruthi KK, Vij A. Epidemiology of knee osteoarthritis in India and related Factors. *Indian J of Orthop.* 2016;50(5): 518 – 22.
 56. Astutik FH, Santoso A, Hairuddin. The Relationship between Blood Glucose Control and Knee Osteoarthritis in DM Patients at Dr. Soebandi Hospital. e-

- Jurnal Pustaka Kesehatan. 2014;2(2):221–5.
57. Lee KM, Chung CY, Sung KH, Lee SY, Won SH, Kim TG et al. Risk Factors for Osteoarthritis and Contributing Factors to Current Arthritic Pain in South Korean Older Adults. *Yonsei Med J.* 2015;56(1):124–31.
 58. Ruan G, Xu J, Wang K, Wu J, Zhu Q, Ren J et al. Associations between knee structural measures, circulating inflammatory factors and MMP13 in patients with knee osteoarthritis. *Osteoarthritis and Cartilage.* 2018;26(8):1063–9.
 59. Mark D, Kohn BA, Sassoon AA, Fernando ND. Classification in Brief. Kellgren-Lawrence Classification of Osteoarthritis. *Clin Orthop Relat Res.* 2016;474:1886–93.
 60. Xin X, Tan Q, Li F, Chen Z, Zhang K, Li F, et al. Potential Value of Matrix Metalloproteinase-13 as a Biomarker for Osteoarthritis. *Front Surg.* 2021;8(750047):1–9.
 61. Bian F, Ruan G, Xu J, Wang K, Wu J, Ren J et al. Association of serum citrate levels with knee structural change and cartilage enzymes in patients with knee osteoarthritis. *Int J Rheum Dis.* 2020;00:1–8.
 62. Ozler K, Aktas E, Atay C, Yilmaz B, Arikian M, Gungor S. Serum and knee synovial fluid matrix metalloproteinase-13 and tumor necrosis factor-alpha level in patients with late stage osteoarthritis. *Acta Orthop traumatol Turc.* 2016;50(6):670–3.
 63. Hussein NA, Sharara G. Correlation between serum leptin, cytokines, cartilage degradation and functional impact in obese knee osteoarthritis patients. *Egyptian Rheumatologist.* 2015;13(2):1–6.
 64. Sofia V, Ali H, Rahmadian R, Amita F. Ekspresi gen tissue inhibitor metalloproteinase-1 pada sel sinoviosit osteoarthritis grade IV setelah pemberian diacerin. *Jurnal Kesehatan Andlas.* 2018;7(1):19–25.
 65. Veronese N, Cooper C, Reginster JY, Hochberg M, Branco J, Bruyere O et

- al. Type 2 diabetes mellitus and osteoarthritis. *Semarthrit*. 2019;49:9–19.
66. Li L, Li Z, Li Y, Hu X, Zhang Y, Fan P. Profiling of inflammatory mediators in the synovial fluid related to pain in knee osteoarthritis. *BMC Musculoskeletal Disord*. 2020;21(99):1–10.
67. Mabey T, Honsawek S, Tanavalee A, Yuktanandana P, Wilairatana V, Poovorawan Y. Plasma and synovial fluid inflammatory profiles in primary knee osteoarthritis. *Biomarker*. 2016;21(7):1–7.
68. Niknami N, Omraninava M, Mirzaei N. Evaluation of the serum level of IL-1 in type 2 diabetic patients with and without diabetic nephropathy. *Journal of Diabetes Mellitus*. 2018;8:54–60.
69. Tsi WC, Liang FC, Cheng JW, Lin LP, Chang SC, Chen HH, et al. High glucose concentration up-regulates the expression of matrix metalloproteinase-9 and -13 in tendon cells. *BMC Musculoskeletal Disorder*. 2013;14(255):1–7.
70. Zonova EV, Lykov AP, Trifonova EP, Sazonova OV. Characteristic of osteoarthritis in patients with diabetes mellitus type 2. *Integr Mol Med*. 2016;3(3):649–53.

