

DAFTAR PUSTAKA

- Abramoff, B. and Caldera, F. E. (2020) 'Osteoarthritis: Pathology, Diagnosis, and Treatment Options', *Medical Clinics of North America*, 104(2), pp. 293–311. doi: 10.1016/j.mcna.2019.10.007.
- Aini, S. (2013) 'Ekstraksi Senyawa Kurkumin Dari Rimpang Temulawak Dengan Metode Maserasi', p. 4.
- Al-Johani, A. H. *et al.* (2014) 'Comparative study of hamstring and quadriceps strengthening treatments in the management of knee osteoarthritis', *Journal of Physical Therapy Science*, 26(6), pp. 817–820. doi: 10.1589/jpts.26.817.
- Anthwal, A. *et al.* (2014) 'Synthesis, Characterization and in Vitro Anticancer Activity of C-5 Curcumin Analogues with Potential to Inhibit TNF- α - Induced NF- κ B Activation', *BioMed Research International*, 2014(Figure 1), pp. 1–11. doi: 10.1155/2014/524161.
- Asher, G. N. and Spelman, K. (2013) 'Clinical utility of curcumin extract', *Alternative Therapies in Health and Medicine*, 19(2), pp. 20–22.
- Ayhan, E., Kesmezacar, H. and Akgun, I. (2014) 'Intraarticular injections (corticosteroid, hyaluronic acid, platelet rich plasma) for the knee osteoarthritis', *World Journal of Orthopedics*, 5(3), pp. 351–361. doi: 10.5312/wjo.v5.i3.351.
- Bennell, K. L., Hunter, D. J. and Hinman, R. S. (2012) 'Management of osteoarthritis of the knee', *BMJ (Online)*, 345(7868), pp. 1–8. doi: 10.1136/bmj.e4934.
- Bijlsma, J. W. J., Berenbaum, F. and Lafeber, F. P. J. G. (2011) 'Arthritis 1 Osteoarthritis : an update with relevance for clinical practice', pp. 2115–2126. doi: 10.1016/S0140-6736(11)60243-2.
- Bondeson, J. *et al.* (2006) 'The role of synovial macrophages and macrophage-produced cytokines in driving aggrecanases, matrix metalloproteinases, and other destructive and inflammatory responses in osteoarthritis', *Arthritis Research and Therapy*, 8(6), pp. 1–12. doi: 10.1186/ar2099.
- Brown, G. A. (2013) 'AAOS clinical practice guideline: Treatment of osteoarthritis

- of the knee: Evidence-based guideline, 2nd edition', *Journal of the American Academy of Orthopaedic Surgeons*, 21(9), pp. 577–579. doi: 10.5435/JAAOS-21-09-577.
- Chattopadhyay, I. *et al.* (2004) 'Turmeric and curcumin: Biological actions and medicinal applications', *Current science*, pp. 44–53.
- Chin, K. Y. (2016) 'The spice for joint inflammation: Anti-inflammatory role of curcumin in treating osteoarthritis', *Drug Design, Development and Therapy*, 10, pp. 3029–3042. doi: 10.2147/DDDT.S117432.
- Collins, N. J. *et al.* (2011) 'Measures of knee function: International Knee Documentation Committee (IKDC) Subjective Knee Evaluation Form, Knee Injury and Osteoarthritis Outcome Score (KOOS), Knee Injury and Osteoarthritis Outcome Score Physical Function Short Form (KOOS-PS), Knee Outcome Survey Activities of Daily Living Scale (KOS-ADL), Lysholm Knee Scoring Scale, Oxford Knee Score (OKS), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), Activity Rating Scale (ARS), and Tegner Activity Score (TAS)', *Arthritis Care & Research*, 63(S11), pp. S208–S228. doi: 10.1002/ACR.20632.
- Comblain, F. *et al.* (2015) 'Curcuminoids Extract, Hydrolyzed Collagen and Green Tea Extract Synergically Inhibit Inflammatory and Catabolic Mediator's Synthesis by Normal Bovine and Osteoarthritic Human Chondrocytes in Monolayer'. doi: 10.1371/journal.pone.0121654.
- Dairaku, I. *et al.* (2010) 'Inhibitory effect of curcumin on IMP dehydrogenase, the target for anticancer and antiviral chemotherapy agents', *Bioscience, Biotechnology and Biochemistry*, 74(1), pp. 185–187. doi: 10.1271/bbb.90568.
- Deberg, M. *et al.* (2008) 'One-year follow-up of Coll2-1, Coll2-1NO2 and myeloperoxidase serum levels in osteoarthritis patients after hip or knee replacement', *Annals of the Rheumatic Diseases*, 67(2), pp. 168–174. doi: 10.1136/ARD.2007.073452.
- Ebrahimzadeh, M. H. *et al.* (2014) 'The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) in persian speaking patients

- with knee osteoarthritis', *Archives of bone and joint surgery*, 2(1), p. 57.
- Ezzat, S. M. *et al.* (2018) 'The hidden mechanism beyond ginger (*Zingiber officinale* Rosc.) potent in vivo and in vitro anti-inflammatory activity', *Journal of Ethnopharmacology*, 214, pp. 113–123. doi: 10.1016/j.jep.2017.12.019.
- Focht, B. C. (2012) 'Move to improve: how knee osteoarthritis patients can use exercise to enhance quality of life', *ACSM's health & fitness journal*, 16(5), p. 24.
- Gallelli, L. *et al.* (2012) 'Characteristics and clinical implications of the pharmacokinetic profile of ibuprofen in patients with knee osteoarthritis', *Clinical drug investigation*, 32(12), pp. 827–833.
- Goel, A., Kunnumakkara, A. B. and Aggarwal, B. B. (2008) 'Curcumin as "Curecumin": From kitchen to clinic', *Biochemical Pharmacology*, 75(4), pp. 787–809. doi: 10.1016/j.bcp.2007.08.016.
- Harfiani, E. *et al.* (2017) 'Functional analysis of *Ageratum conyzoides* L. (Babandotan) leaves extract on rheumatoid arthritis model rat', *Asian Journal of Pharmaceutical and Clinical Research*, 10(3), pp. 429–433. doi: 10.22159/ajpcr.2017.v10i3.16428.
- Hawker, G. A. *et al.* (2011) 'Measures of adult pain: Visual analog scale for pain (vas pain), numeric rating scale for pain (nrs pain), mcgill pain questionnaire (mpq), short-form mcgill pain questionnaire (sf-mpq), chronic pain grade scale (cpgs), short form-36 bodily pain scale (sf', *Arthritis care & research*, 63(S11), pp. S240–S252.
- Henrotin, Y. *et al.* (2014) 'Decrease of a specific biomarker of collagen degradation in osteoarthritis, Coll2-1, by treatment with highly bioavailable curcumin during an exploratory clinical trial', *BMC Complementary and Alternative Medicine*, 14. doi: 10.1186/1472-6882-14-159.
- Hunter, D. J. *et al.* (2011) 'Definition of osteoarthritis on MRI: Results of a Delphi exercise', *Osteoarthritis and Cartilage*, 19(8), pp. 963–969. doi: 10.1016/j.joca.2011.04.017.
- Ismaningsih and Selviani, I. (2018) 'Penatalaksanaan Fisioterapi Pada Kasus

- Osteoarthritis Genue Bilateral Dengan Intervensi Neuromuskuler Taping Dan Strengthening Exercise Untuk Meningkatkan Kapasitas Fungsional’, *Jurnal Ilmiah Fisioterapi*, 1(2), pp. 38–46.
- Joanna Briggs Institute (2017) ‘Checklist for Quasi-Experimental Studies’, *The Joanna Briggs Institute*, pp. 1–7.
- Johnson, V. L. and Hunter, D. J. (2014) ‘The epidemiology of osteoarthritis’, *Best Practice and Research: Clinical Rheumatology*, 28(1), pp. 5–15. doi: 10.1016/j.berh.2014.01.004.
- Kalbande, S. R., Gangde, C. N. and Dhondage, A. (2013) ‘Techno-economic evaluation of solar-biomass hybrid drying system for turmeric (*Curcuma longa* L.)’, *FIRE J. Sci. Technol*, 2, pp. 97–107.
- Kamioka, H. (2019) ‘Preferred reporting items for systematic review and meta-analysis protocols (prisma-p) 2015 statement’, *Japanese Pharmacology and Therapeutics*, 47(8), pp. 1177–1185.
- Kemenkes RI (2018) ‘Hasil Riset Kesehatan Dasar Tahun 2018’, *Kementrian Kesehatan RI*, 53(9), pp. 1689–1699.
- Kertia, N. *et al.* (2012) ‘Ability of curcuminoid compared to diclofenac sodium in reducing the secretion of cyclooxygenase-2 enzyme by synovial fluid’s monocytes of patients with osteoarthritis’, *Acta medica Indonesiana*, 44(2), p. 105—113. Available at: <http://europepmc.org/abstract/MED/22745140>.
- Kim, M. key, Choi, G. ja and Lee, H. S. (2003) ‘Fungicidal property of *Curcuma longa* L. rhizome-derived curcumin against phytopathogenic fungi in a greenhouse’, *Journal of Agricultural and Food Chemistry*, 51(6), pp. 1578–1581. doi: 10.1021/jf0210369.
- Kloppenburg, M. and Berenbaum, F. (2020) ‘Osteoarthritis year in review 2019: epidemiology and therapy’, *Osteoarthritis and Cartilage*, 28(3), pp. 242–248. doi: 10.1016/j.joca.2020.01.002.
- Kohli, K. *et al.* (2005) ‘Curcumin: a natural antiinflammatory agent’, *Indian Journal of Pharmacology*, 37(3), p. 141.
- Kohn, M. D., Sassoon, A. A. and Fernando, N. D. (2016) ‘Classifications in Brief: Kellgren-Lawrence Classification of Osteoarthritis’, *Clinical Orthopaedics*

and Related Research, 474(8), pp. 1886–1893. doi: 10.1007/s11999-016-4732-4.

Kolasinski, S. L. *et al.* (2020) ‘2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee’, *Arthritis Care and Research*, 72(2), pp. 149–162. doi: 10.1002/acr.24131.

Kotha, R. R. and Luthria, D. L. (2019) ‘Curcumin: Biological, pharmaceutical, nutraceutical, and analytical aspects’, *Molecules*, 24(16), pp. 1–27. doi: 10.3390/molecules24162930.

Kuptniratsaikul, V. *et al.* (2014) ‘Efficacy and safety of *Curcuma domestica* extracts compared with ibuprofen in patients with knee osteoarthritis: A multicenter study’, *Clinical Interventions in Aging*, 9, pp. 451–458. doi: 10.2147/cia.s58535.

Kusbiantoro, D. Y. P. (2018) ‘Pemanfaatan kandungan metabolit sekunder pada tanaman kunyit dalam mendukung peningkatan pendapatan masyarakat Utilization of secondary metabolite in the turmeric plant to increase community income’, 17(1), pp. 544–549.

Lawhavinit, O. A., Kongkathip, N. and Kongkathip, B. (2010) ‘Antimicrobial activity of curcuminoids from *Curcuma Longa* L. on pathogenic bacteria of shrimp and chicken’, *Kasetsart Journal - Natural Science*, 44(3), pp. 364–371.

Lespasio, M. J. *et al.* (2017) ‘Knee Osteoarthritis: A Primer’, *The Permanente journal*, 21, pp. 1–7. doi: 10.7812/TPP/16-183.

Lev-Ari, S. *et al.* (2006) ‘Curcumin synergistically potentiates the growth-inhibitory and pro-apoptotic effects of celecoxib in osteoarthritis synovial adherent cells’, *Rheumatology*, 45(2), pp. 171–177. doi: 10.1093/rheumatology/kei132.

Li, R. *et al.* (2018) ‘Chitosan conduit combined with hyaluronic acid prevent sciatic nerve scar in a rat model of peripheral nerve crush injury’, *Molecular Medicine Reports*, 17(3), pp. 4360–4368. doi: 10.3892/MMR.2018.8388.

Litwic, A. *et al.* (2013) ‘Epidemiology and burden of osteoarthritis’, *British*

- Medical Bulletin*, 105(1), pp. 185–199. doi: 10.1093/bmb/lds038.
- Madhu, K., Chanda, K. and Saji, M. J. (2013) ‘Safety and efficacy of Curcuma longa extract in the treatment of painful knee osteoarthritis: A randomized placebo-controlled trial’, *Inflammopharmacology*, 21(2), pp. 129–136. doi: 10.1007/s10787-012-0163-3.
- Mathy-Hartert, M. *et al.* (2009) ‘Curcumin inhibits pro-inflammatory mediators and metalloproteinase-3 production by chondrocytes’, *Inflammation Research*, 58(12), pp. 899–908. doi: 10.1007/s00011-009-0063-1.
- Maulina, M. (2017) ‘Kerusakan Proteoglikan pada Osteoarthritis’, *Jurnal Ilmiah Sains, Teknologi, Ekonomi, Sosial dan Budaya*, 1(1), pp. 61–67.
- Meilina, R. and Mukhtar, R. (2019) ‘Efek Antiinflamasi Ekstrak Etanol Rimpang Kunyit (*Curcuma domestica* Val.) pada Tikus Putih yang Diinduksi Karagenan’, *Journal of Healthcare Technology and Medicine*, 4(1), p. 111. doi: 10.33143/jhtm.v4i1.173.
- Menon, V. P. and Sudheer, A. R. (2007) ‘Antioxidant and anti-inflammatory properties of curcumin’, *Advances in Experimental Medicine and Biology*, 595(September 2001), pp. 105–125. doi: 10.1007/978-0-387-46401-5_3.
- Mobasheri, A. *et al.* (2012) ‘Scientific evidence and rationale for the development of curcumin and resveratrol as nutraceuticals for joint health’, *International Journal of Molecular Sciences*, 13(4), pp. 4202–4232. doi: 10.3390/ijms13044202.
- Nagpal, M. and Sood, S. (2013) ‘Role of curcumin in systemic and oral health: An overview’, *Journal of natural science, biology, and medicine*, 4(1), p. 3.
- Nakagawa, Y. *et al.* (2014) ‘Short-term effects of highly-bioavailable curcumin for treating knee osteoarthritis: a randomized, double-blind, placebo-controlled prospective study’, *Journal of Orthopaedic Science*, 19(6), pp. 933–939. doi: 10.1007/s00776-014-0633-0.
- Neogi, T. and Zhang, Y. (2013) ‘Epidemiology of Osteoarthritis’, *Rheumatic Disease Clinics of North America*, 39(1), pp. 1–19. doi: 10.1016/j.rdc.2012.10.004.
- Paerunan, C., Gessal, J. and Sengkey, L. (2019) ‘Hubungan Antara Usia dan

- Derajat Kerusakan Sendi pada Pasien Osteoarthritis Lutut di Instalasi Rehabilitasi Medik RSUP Prof. Dr.R.D. Kandou Manado Periode Januari-Juni 2018', *Jurnal Medik dan Rehabilitasi (JMR)*, 1(3), pp. 1–4.
- Patrignani, P. (2000) 'Nonsteroidal anti-inflammatory drugs , COX-2 and colorectal cancer', 113, pp. 493–498.
- Perkins, K., Sahy, W. and Beckett, R. D. (2017) 'Efficacy of Curcuma for Treatment of Osteoarthritis', *Journal of Evidence-Based Complementary and Alternative Medicine*, pp. 156–165. doi: 10.1177/2156587216636747.
- Pinsornsak, P. and Niempoog, S. (2012a) 'The efficacy of Curcuma Longa L. extract as an adjuvant therapy in primary knee osteoarthritis: a randomized control trial.', *Journal of the Medical Association of Thailand = Chotmaihet thangphaet*, 95 Suppl 1, pp. 51–58.
- Pinsornsak, P. and Niempoog, S. (2012b) 'The efficacy of Curcuma Longa L. extract as an adjuvant therapy in primary knee osteoarthritis: a randomized control trial.', *Journal of the Medical Association of Thailand = Chotmaihet thangphaet*, 95 Suppl 1(January 2012).
- Prasad, S. *et al.* (2014) 'Curcumin, a component of golden spice: From bedside to bench and back', *Biotechnology Advances*, 32(6), pp. 1053–1064. doi: 10.1016/j.biotechadv.2014.04.004.
- Pratiwi, A. I. (2015) 'Diagnosis and Treatment', *Obstetrical & Gynecological Survey*, 24(8), pp. 1095–1097. doi: 10.1097/00006254-196908000-00014.
- Pratiwi, W. R. and Kertia, N. (2019) 'The effect of curcuminoid turmeric rhizome extract on interleukin 1 β concentration in osteoarthritis patient', *Jurnal Kedokteran dan Kesehatan Indonesia*, 10(2), pp. 162–170. doi: 10.20885/jkki.vol10.iss2.art8.
- Rajasekaran, S. A. (2011) 'Therapeutic potential of curcumin in gastrointestinal diseases', *World Journal of Gastrointestinal Pathophysiology*, 2(1), p. 1. doi: 10.4291/wjgp.v2.i1.1.
- Ramberg, J. E., Nelson, E. D. and Sinnott, R. A. (2010) 'Immunomodulatory dietary polysaccharides: A systematic review of the literature', *Nutrition Journal*, 9(1), pp. 1–22. doi: 10.1186/1475-2891-9-54.

- de Rezende, M. U., de Campos, G. C. and Pailo, A. F. (2013) 'Current concepts in osteoarthritis', *Acta Ortopedica Brasileira*, 21(2), pp. 120–122. doi: 10.1590/S1413-78522013000200010.
- Roihatul Mutiah (2015) 'Evidence Based Kurkumin dari tanaman Kunyit (*Curcuma longa*) Sebagai Terapi Kanker pada Pengobatan Modern', 1(1), pp. 28–41.
- Sacitharan, P. K. (2019) *Ageing and osteoarthritis, Subcellular Biochemistry*. doi: 10.1007/978-981-13-3681-2_6.
- Sahebkar, A. and Henrotin, Y. (2016) 'Analgesic efficacy and safety of curcuminoids in clinical practice: A systematic review and meta-analysis of randomized controlled trials', *Pain Medicine (United States)*, 17(6), pp. 1192–1202. doi: 10.1093/pm/pnv024.
- Samuel, A. J. and Kanimozhi, D. (2019) 'Outcome measures used in patient with knee osteoarthritis: With special importance on functional outcome measures', *International Journal of Health Sciences*, 13(1), p. 52. Available at: /pmc/articles/PMC6392485/ (Accessed: 6 November 2021).
- Sari, T. T., Chozie, N. A. and Gatot, D. (2016) 'Pemantauan Kerusakan Sendi pada Anak Hemofilia Berat: Peran Pemeriksaan Muskuloskeletal (HJHS), Ultrasonografi Sendi dan Kadar C-Terminal Telopeptide of Type II Collagen Urin', *Sari Pediatri*, 17(3), p. 234. doi: 10.14238/sp17.3.2015.234-40.
- Sarkar, F. H. and Li, Y. (2004) 'Cell signaling pathways altered by natural chemopreventive agents', *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis*, 555(1–2), pp. 53–64.
- Sasaki, H. *et al.* (2011) 'Innovative preparation of curcumin for improved oral bioavailability', *Biological and Pharmaceutical Bulletin*, 34(5), pp. 660–665. doi: 10.1248/bpb.34.660.
- Shep, D. *et al.* (2019) 'Safety and efficacy of curcumin versus diclofenac in knee osteoarthritis: A randomized open-label parallel-arm study', *Trials*, 20(1), pp. 1–11. doi: 10.1186/s13063-019-3327-2.
- Siahaan, S. and Aryastami, N. K. (2018) 'Studi Kebijakan Pengembangan Tanaman Obat di Indonesia', *Media Penelitian dan Pengembangan Kesehatan*, 28(3),

- pp. 157–166. doi: 10.22435/mpk.v28i3.119.
- Singhal, S. *et al.* (2021) ‘Bioavailable turmeric extract for knee osteoarthritis: a randomized, non-inferiority trial versus paracetamol’, *Trials*, 22(1), pp. 1–11. doi: 10.1186/s13063-021-05053-7.
- Skou, S. T. *et al.* (2015) ‘A Randomized, Controlled Trial of Total Knee Replacement’, *New England Journal of Medicine*, 373(17), pp. 1597–1606. doi: 10.1056/nejmoa1505467.
- Surgeons, A. A. of O. (2013) ‘Treatment of osteoarthritis of the knee: evidence-based guideline’, *J Am Acad Orthop Surg*, 21(9), pp. 577–579.
- Tanvir, E. M. *et al.* (2017) ‘Antioxidant properties of popular turmeric (*Curcuma longa*) varieties from Bangladesh’, *Journal of Food Quality*, 2017. doi: 10.1155/2017/8471785.
- Vaishya, R. *et al.* (2016) ‘Non-operative management of osteoarthritis of the knee joint’, *Journal of Clinical Orthopaedics and Trauma*, 7(3), pp. 170–176. doi: 10.1016/j.jcot.2016.05.005.
- Veronese, N. (2020) ‘Reply to: “bio-optimized *Curcuma longa* extract is efficient on knee osteoarthritis pain: A double-blind multicenter randomized placebo controlled three-arm study”’, *Arthritis Research and Therapy*, 22(1), pp. 1–10. doi: 10.1186/s13075-020-2107-4.
- Vincent, T. L. and Watt, F. E. (2014) ‘Osteoarthritis’, *Medicine (United Kingdom)*, 42(4), pp. 213–219. doi: 10.1016/j.mpm.2014.01.010.
- Wallace, J. L. *et al.* (2007) ‘Gastrointestinal Safety and Anti-Inflammatory Effects of a Hydrogen Sulfide-Releasing Diclofenac Derivative in the Rat’, *Gastroenterology*, 132(1), pp. 261–271. doi: 10.1053/j.gastro.2006.11.042.
- Wang, Z. *et al.* (2020) ‘Effectiveness of *Curcuma longa* Extract for the Treatment of Symptoms and Effusion-Synovitis of Knee Osteoarthritis: A Randomized Trial’, *Annals of internal medicine*, 173(11), pp. 861–869. doi: 10.7326/M20-0990.
- Wijaya, S. (2018) ‘Osteoarthritis Lutut’, *Cdk*, 45(6), pp. 424–429.
- Winarto, I. W. P. and Lentera, T. (2004) *Khasiat & manfaat kunyit*. AgroMedia.
- Yadav, R. P. *et al.* (2017) ‘Versatility of turmeric: A review the golden spice of

- life', *Journal of Pharmacognosy and Phytochemistry*, 6(1), pp. 41–46.
- Yang, Q. *et al.* (2013) 'Inhibition effect of curcumin on TNF- α and MMP-13 expression induced by advanced glycation end products in chondrocytes', *Pharmacology*, 91(1–2), pp. 77–85. doi: 10.1159/000345345.
- Yuan Shan, C. and Iskandar, Y. (2018) 'Studi Kandungan Kimia Dan Aktivitas Farmakologi Tanaman Kunyit (*Curcuma longa* L.)', *Pharmacia*, 16, pp. 547–555.
- Yuliana (2019) 'Kunyit sebagai agen anti inflamasi', *Wellness and Healthy Magazine*, 2(February), pp. 187–192. Available at: <https://wellness.journalpress.id/wellness/article/view/v1i218wh>.
- Zhang, Z. *et al.* (2016) 'Curcumin slows osteoarthritis progression and relieves osteoarthritis-associated pain symptoms in a post-traumatic osteoarthritis mouse model', *Arthritis Research and Therapy*, 18(1), pp. 1–12. doi: 10.1186/s13075-016-1025-y.