

DAFTAR PUSTAKA

- Akküç, S., Duruk, G., Keles, A., 2023, Remineralization Effect of Three Different Agents on Initial Caries and Erosive Lesions: A Micro-Computed Tomography and Scanning Electron Microscopy Analysis, *BMC Oral Health*, 23(1):1–12
- Akkus, A., Karasik, D., dan Roperto, R., 2017, Correlation between micro-hardness and mineral content in healthy human enamel, *Journal of Clinical and Experimental Dentistry*, 9(4). <https://doi.org/10.4317/jced.53345>
- Al-Blaihed, D., Meligy, O., Baghlaif, K., Aljawi, R., & Abudawood, S. 2024. White Spot Lesions in Fixed Orthodontics: A Literature Review on Etiology, Prevention, and Treatment. *Cureus*.
- Amaechi, B., Azees, P., Alshareif, D., Shehata, M., Lima, P., Abdollahi, A., dan Evans, V., (2019), Comparative Efficacy of a Hydroxyapatite and a Fluoride Toothpaste for Prevention and Remineralization of Dental Caries in Children, *BDJ Open*, 5(1).
- Anggraini, R. M., dan Yusuf, D. Y., 2023, Karakterisasi Natural Hidroksiapatit Dari Tulang Ikan Lele (*Calarias batracus*), *JoP*, 8(2):103–107.
- Arifiadi, F., Wahyudi, K., Julyana Manullang, R., dan Rofifah Novianti, H., 2021, Synthesis And Characterization of Hydroxyapatite-Gibbsite, *Jurnal Keramik Dan Gelas Indonesia*, 30:78–89.
- Bajaj, M., Poornima, P., Praveen, S., Nagaveni, N., B., Roopa, K., B., Neena, I., E., 2016, Comparison of CPP-ACP, Tri-Calcium Phosphate and Hydroxyapatite on Remineralization of Artificial Caries like Lesions on Primary Enamel -An in vitro Study, *The Journal of Clinical Pediatric Dentistry*, 40(5):404–9. 40(5).
- Bordea, I., R., Candrea, S., Alexescu, G., T., Bran, S., Băciuț, M., Băciuț, G., Lucaciu, O., Mihail, C., Dinu, C., M., Todea, D., A., 2020, Nano Hydroxyapatite use in Dentistry: a Systematic Review, *Drug Metabolism Reviews*, 52(2): 319-332.
- Bowen, W. H., Burne, R. A., Wu, H., dan Koo, H., 2018, Oral Biofilms: Pathogens, Matrix, and Polymicrobial Interactions in Microenvironments, *Trends in Microbiology*, 26(3):229–242.
- Campista, H. C., Matos, J. D. M. de, Queiroz, D. A., Maciel, L. C., Pecanha, M. M., dan Peruzzo, D. C., 2023, Dental Anatomy and Morphology, *Atena Editora*, Brasil, hal. 2-3.
- Chapman, A. dan Felton, S.H., 2021, Basic guide to Oral health education And promotion, 3rd ed., John Wiley & Sons, UK, hal. 11-12, 57, 60-61.
- Chun, K. J., Choi, H. H., dan Lee, J. Y., 2014, Comparison of mechanical property and role between enamel and dentin in the human teeth, *Journal of Dental Biomechanics*, 5(1):1–7.
- Dadiono, M. S., 2022, Lele Dumbo (*Clarias sp.*): Cara Pemasaran, Faktor Pendukung dan Penghambat, *Jurnal Perikanan Air Tawar*, 3(2):32–36.
- Desneli, D. dan Muryani, A., 2019, Penatalaksanaan white spot lesion setelah perawatan ortodontik dengan teknik resin infiltration Management of white spot lesion after orthodontic treatment with resin infiltration technique, *Jurnal Kedokteran Gigi Universitas Padjadjaran*, 31(1):15-21.

- Dipalma, G., Inchingolo, A. D., Inchingolo, F., Charitos, I. A., Di Cosola, M., dan Cazzolla, A. P., 2021, Focus on the cariogenic process: Microbial and biochemical interactions with teeth and oral environment, *Journal of Biological Regulators and Homeostatic Agents*, 35(2):429-440.
- Edén, M., 2021, Structure and formation of amorphous calcium phosphate and its role as surface layer of nanocrystalline apatite: Implications for bone mineralization, *Materialia*, 17:101107.
- Eissa, N.M., Elshourbagy, E.M., Gomaa, N.E., 2022, Effect of Sodium Fluoride Plus Tricalcium Phosphate with and without CO2 Laser on Remineralization of White Spot Lesions, *Heliyon*, 8(10):10752.
- Farooq, I. dan Bugshan, A., 2020, The role of salivary contents and modern technologies in the remineralization of dental enamel: a narrative review, *F1000Research*, 9(171):1-14.
- Fejerskov, O., Nyvad, B., Kidd, E., 2015, *Dental Caries The Disease and Its Clinical Management*, 3rd ed., John Wiley & Sons, USA, hal. 66, 77, 157.
- Gimenez, T., Estevam, L., Ponte, Y., Dalboni, A., Calvo, A., Tedesco, T., ... & Mendes, F. 2023. Is There an Acceptable Surrogate for Caries Clinical Trials? Evidence From a Systematic Review of Primary Studies. *Community Dentistry and Oral Epidemiology* 51(6):1057-1064.
- Goldberg, M., 2016, The Early Enamel Carious Lesion, *Understanding Dental Caries*, 1(4):29-39.
- Gradl, R., Zanette, I., Ruiz-Yaniz, M., Dierolf, M., Rack, A., Zaslansky, P., dan Pfeiffer, F., 2016, Mass density measurement of mineralized tissue with grating-based X-Ray phase tomography, *PLoS ONE*, 11(12):1-13.
- Grocholewicz, K., Matkowska-Cichocka, G., Makowiecki, P., Drożdżik, A., Ey-Chmielewska, H., Dziewulska, A., & Janiszewska-Olszowska, J. 2020. Effect of Nano-Hydroxyapatite and Ozone on Approximal Initial Caries: A Randomized Clinical Trial. *Scientific Reports*, 10(1).
- Hall, J., E., Hall, M., E., 2021, Guyton and Hall Textbook of Medical Physiology 14th ed, Elsevier, Philadelphia, Hal. 798, 1006, 1007.
- Hasan, S. 2015. White Spot Lesions. *International Journal of Clinical Case Reports*
- Imani, M., Safaei, M., Afnaniesfandabad, A., Moradpoor, H., Sadeghi, M., Golshah, A., ... & Mozaffari, H. 2019. Efficacy of CPP-ACP and CPP-ACPF for Prevention and Remineralization of White Spot Lesions in Orthodontic Patients: A Systematic Review of Randomized Controlled Clinical Trials. *Acta Informatica Medica* 27(3):199.
- Hayashi-Sakai, S., Sakamoto, M., Hayashi, T., Kondo, T., Sugita, K., Sakai, J., Shimomura-Kuroki, J., Ike, M., Nikkuni, Y., dan Nishiyama, H., 2019, Evaluation of permanent and primary enamel and dentin mineral density using micro-computed tomography, *Oral Radiology*, 35(1):29-34.
- Hinić, S., Petrović, B., Kojić, S., Omerović, N., Jevremov, J., Jelenčiakova, N., ... & Stojanović, G. (2021). Viscosity and Mixing Properties of Artificial Saliva and Four Different Mouthwashes. *Biorheology*, 57(2-4), 87-100.
- Huang, Y., Han, Q., Peng, X., Ren, B., Li, J., Zhou, X., ... & Cheng, L. (2023). Disaggregated Nano-Hydroxyapatite (DNHAP) With Inhibitory Effects on Biofilms and Demineralization. *Journal of Dental Research*, 102(7), 777-784.

- Indrapriyadharshini, K., Kumar, P.M., Sharma, K. dan Iyer, K., 2018, Remineralizing potential of CPP-ACP in white spot lesions—A systematic review, *Indian Journal of Dental Research*, 29(4):487-496.
- Iosif, C., Cuc, S., Prodan, D., Moldovan, M., Petean, I., Badea, M., ... & Chifor, R. 2022. Effects of Acidic Environments on Dental Structures After Bracket Debonding. *International Journal of Molecular Sciences* 23(24):15583.
- Iswanto, B., 2013, Menelusuri Identitas Ikan LeleDumbo, *Media Akuakultur*, 8(2):85–96.
- Iswanto, B., Suprpto, R., dan Marnis, H., 2015, Morphological characterization of the African catfish (*Clarias gariepinus* Burchell, 1822) strains introduced to Indonesia, *Indonesian Aquaculture Journal*, 10(2):91-99.
- Jelita, H. dan Nugrahini, S., 2021, Effect of river water and groundwater pH quality to the teeth calcium level solubility in Kereng Bangkirai area, Central Kalimantan Province, *Makassar Dental Journal*, 10(3):253-255.
- Kelly, A. M., Kallistova, A., Küchler, E. C., Romanos, H. F., Lips, A., Costa, M. C., Modesto, A., dan Vieira, A. R., 2020, Measuring the microscopic structures of human dental enamel can predict caries experience, *Journal of Personalized Medicine*, 10(1):5
- Kementerian Kesehatan Republik Indonesia, 2023, Laporan Survei Kesehatan Indonesia 2023, pp. 343.
- Kidd, E., Fejerskov, O., 2016, Essentials of Dental Caries, 4th ed., Oxford University Press, Oxford, pp. 10, 21-24.
- Körner, P., Schleich, J.A., Wiedemeier, D.B., Attin, T. dan Wegehaupt, F.J., 2020, Effects of additional use of bioactive glasses or a hydroxyapatite toothpaste on remineralization of artificial lesions in vitro, *Caries research*, 54(4):336-342
- Kusumawati, P., Triwitono, P., Anggrahini, S., dan Pranoto, Y., 2022, Nano-calcium Powder Properties from Six Commercial Fish Bone Waste in Indonesia, *Squalen Bulletin of Marine and Fisheries Postharvest and Biotechnology*, 17(1):1-12.
- Lacruz, R. S., Habelitz, S., Wright, J. T., dan Paine, M. L., 2017, Dental Enamel Formation and Implications for Oral Health and Disease, *Physiological Reviews*, 97(3):939–993.
- Lendrawati, L., Pintauli, S., Rahardjo, A., Bachtiar, A., dan Maharani, D. A., 2019, Risk Factors of Dental Caries: Consumption of Sugary Snacks Among Indonesian Adolescents, *Pesquisa Brasileira Em Odontopediatria e Clínica Integrada*, 19(1):1–8.
- Li, X., Wang, J., Joiner, A., dan Chang, J., 2014, The remineralisation of enamel: A review of the literature, *Journal of Dentistry*, 42:12-20.
- Ma, X., Lin, X., Zhong, T., & Xie, F. 2019. Evaluation of the Efficacy of Casein Phosphopeptide-Amorphous Calcium Phosphate on Remineralization of White Spot Lesions in Vitro and Clinical Research: A Systematic Review and Meta-Analysis. *BMC Oral Health*, 19(1)
- Makmur, S.A. dan Utomo, R.B., 2019, Pengaruh aplikasi gel Theobromine terhadap kekasaran permukaan email gigi demineralisasi, *Odonto: Dental Journal*, 6(2):95-98.

- Malcangi, G., Patano, A., Morolla, R., De Santis, M., Piras, F., Settanni, V., Mancini, A., Di Venere, D., Inchingolo, F., Inchingolo, A. D., Dipalma, G., & Inchingolo, A. M., 2023, Analysis of Dental Enamel Remineralization: A Systematic Review of Technique Comparisons, *Bioengineering*, 10(4):472.
- Mohamed, A.M., Hung, W.K., Jen, L.W., Nor, M.M., Hussaini, H.M., Rosli, T.I., 2018, In Vitro Study of White Spot Lesion: Maxilla and Mandibular Teeth, *Saudi Dental Journal*, 30(2):142-150.
- Nagarathana, C., Sakunthala, B. K., dan Naveena Preethi, P., 2015, An update on current remineralizing agent, *OHDM*, 14(4):183-187.
- Nanci, A., 2018, Ten Cate's Oral Histology Development, Structure, and Function, 9th Ed., Elsevier Mosby, USA, hal. 34, 742.
- Neel, E. A. A., Aljabo, A., Strange, A., Ibrahim, S., Coathup, M., Young, A. M., Bozec, L., dan Mudera, V., 2016, Demineralization–remineralization dynamics in teeth and bone, *International Journal of Nanomedicine*, 11:4743-4763.
- Norlita, W., & Anggraeni, V., 2023, Peran Orang Tua dalam Upaya Pemeliharaan Kesehatan Gigi terhadap Kejadian Karies Gigi pada Anak Usia 6-9 Tahun di SDN 169 Pekanbaru, *As-Shiha: Jurnal Kesehatan*, 3(2):70-88.
- Nugroho, E., dan Putera, S., 2018, Karakterisasi Genetik Ikan Lele Dumbo Berdasarkan Marker Rapid Fingerprinting, *Berita Biologi*, 17(1):85-90.
- Nugroho, J. J., 2021, Effect of catfish (*Clarias batrachus*) bone paste application to changes in enamel surface roughness, *Makassar Dental Journal*, 10(1):36–39.
- Paula, A. B. P., Fernandes, A. R., Coelho, A. S., Marto, C. M., Ferreira, M. M., Caramelo, F., Vale, do F., dan Carrilho, E., 2017, Therapies for White Spot Lesions-A Systematic Review, *Journal of Evidence Based Dental Practice*, 17(1):23–38.
- Peng, S., Sang, T., Wang, H., Guan, Y., Deng, Y., Wang, P., ... & Wu, J. 2022. Bioinspired Anti-Demineralization Enamel Coating for Orthodontics. *Journal of Dental Research* 101(13):1620-1627.
- Philip, N. 2018. State of the Art Enamel Remineralization Systems: The Next Frontier in Caries Management. *Caries Research*, 53(3), 284-295.
- Pitts, N. B., Zero, D. T., Marsh, P. D., Ekstrand, K., Weintraub, J. A., Ramos-Gomez, F., Tagami, J., Twetman, S., Tsakos, G., dan Ismail, A., 2017, Dental caries, *Nature Reviews Disease Primers*, 3(1):1-16.
- Pokhrel, S., 2018, Hydroxyapatite: Preparation, Properties and Its Biomedical Applications, *Advances in Chemical Engineering and Science*, 08(04):225-240.
- Pu'ad, N. M., Haq, R. A., Noh, H. M., Abdullah, H. Z., Idris, M. I., dan Lee, T. C. (2020), Synthesis method of hydroxyapatite: A review, *Materials Today: Proceedings*, 29:233-239.
- Puspitasari, D., Alzahrah, N. F., Tari, I. I., Wibowo, D., Arifin, R., Dewi, R. K., & Diana, S., 2022, THE RELEASE OF FLUORIDE IONS OF BIOACTIVE RESIN IN THE SOLUTION OF LACTIC ACID AND ARTIFICIAL SALIVA. *Dentino: Jurnal Kedokteran Gigi*, 7(2):113–117.

- Pytko-Polonczyk, J., Jakubik, A., Przeklasa-Bierowiec, A., dan Muszynska, B., 2017, Artificial saliva and its use in biological experiments, *J. Physiol. Pharmacol*, 68(6):807-813.
- Hong-Seop, K. H. O. 2014, Understanding of xerostomia and strategies for the development of artificial saliva, *Chine J Dental Res*, 17(2):75-83.
- Ritter, A.V., Boushell, L.W., Walter, R., 2019, Sturdevant's Art and Science of Operative Dentistry, 7th ed., Elsevier, Missouri, pp. 1-5, 8, 10-11, 40.
- Roberts, W.E., Mangum, J.E., Schneider, P.M., 2022, Pathophysiology of Demineralization, Part II: Enamel White Spots, Cavitated Caries, and Bone Infection, *Current Osteoporosis Report*, 20:106-119.
- Sa'adah, N., Sari, G.M. and Asnar, E., 2018. Effects of nano-hydroxyapatite paste on enamel microporosity after bleaching treatment. *Majalah Kedokteran Gigi Indonesia*, 4(1), pp.33-38.
- Sadyrin, E., Swain, M., Mitrin, B., Rzhepakovsky, I., Nikolaev, A., Irkha, V., Yogina, D., Lyanguzov, N., Maksyukov, S. and Aizikovich, S., 2020. Characterization of enamel and dentine about a white spot lesion: mechanical properties, mineral density, microstructure and molecular composition. *Nanomaterials*, 10(9), p.1889.
- Sampson, V. and Sampson, A., 2020. Diagnosis and treatment options for anterior white spot lesions. *British dental journal*, 229(6), pp.348-352.
- Santoso, J. H., Prahasti, A. E., dan Elline, 2024, EFFECT OF 4 wt% HYDROXYAPATITE PASTA ON DENTAL EMAIL HARDNESS. *Interdental Jurnal Kedokteran Gigi (IJKG)*, 20(1):46–52.
- Sasaki, M., Kodama, Y., Shimoyama, Y., Ishikawa, T., Tajika, S., & Kimura, S. 2020. Abiotrophia Defectiva Adhere to Saliva-Coated Hydroxyapatite Beads via Interactions Between Salivary Proline-Rich-Proteins and Bacterial Glyceraldehyde-3-Phosphate Dehydrogenase. *Microbiology and Immunology*, 64(11), 719-729.
- Setyawati, A., Silviana, F., 2019, Pengaruh Pasta Cangkang Telur Ayam Negeri Terhadap Email Gigi, *DENTA*, 13(2):24-30.
- Suci, I. A., dan Ngapa, Y. D., 2020. Sintesis dan karakterisasi hidroksiapatit (HAp) dari cangkang kerang ale-ale menggunakan metode presipitasi double stirring. *Journal of Applied Chemistry*, 8(2).
- Sudradjat, H., Meyer, F., Loza, K., Epple, M., dan Enax, J., 2020, In Vivo Effects of a Hydroxyapatite-Based Oral Care Gel on the Calcium and Phosphorus Levels of Dental Plaque, *European Journal of Dentistry*, 14(2):206–211.
- Sumahiradewi, L. G., dan WSK, L. A. T. T., 2022, EFEK PERASAN DAUN UBI JALAR (*Ipomoea batatas*) TERHADAP SINTASAN BENIH IKAN LELE DUMBO (*Clarias gariepinus*) PADA PROSES TRANSPORTASI. *Media Bina Ilmiah*, 17(3), pp.571-578.
- Taibah, S., Abubakr, N., & Ziada, H. 2022. Perspectives of Orthodontists of the Diagnosis, Prevention, and Management of White Spot Lesions. *Journal of International Society of Preventive and Community Dentistry*, 12(1):117-125.
- Thierens, L., Moerman, S., Elst, C., Vercruysse, C., Maes, P., Temmerman, L., ... & Pauw, G. 2019. The In Vitro Remineralizing Effect of CPP-ACP and CPP-

ACPF After 6 and 12 Weeks on Initial Caries Lesion. *Journal of Applied Oral Science*, 27

- Thimmaiah, C., Shetty, P., Shetty, S.B., Natarajan, S. dan Thomas, N.A., 2019, Comparative analysis of the remineralization potential of CPP-ACP with Fluoride, Tri-Calcium Phosphate and Nano Hydroxyapatite using SEM/EDX—An in vitro study, *Journal of Clinical and Experimental Dentistry*, 11(12):1120–1126.
- Tortora, G.J., dan Derrickson, B., 2017, Principles of Anatomy and Physiology, 13th ed., John Wiley & Sons, Inc., USA, hal. 908-909.
- Wong, K.O., Enax, J., Meyer, F., Ganss, B., 2022, The Use of Hydroxyapatite Toothpaste to Prevent Dental Caries, *Odontology*, 110: 223-230.
- Xuedong, Z., 2016, Dental Caries: Principles and Management, Springer, London, Hal. 72.
- Zulfahmi, I., Akmal, Y., Burhanuddin, A.I., Dhamayanti, Y., Paujiah, E., Sumon, K.A., Pandit, D.N. and Nur, F.M., 2022. Osteocranium anatomy of African catfish (*Clarias gariepinus* Burchell 1822) from cultured pond in Aceh, Indonesia. *Sciences*, 36(3), 549–554.