

REFERENCE

- Abbas, U., Masood, K. I., Khan, A., Irfan, M., Saifullah, N., Jamil, B., & Hasan, Z. (2022). Tuberculosis and diabetes mellitus: Relating immune impact of co-morbidity with challenges in disease management in high burden countries. *Journal of Clinical Tuberculosis and Other Mycobacterial Diseases*, 29, 100343. <https://doi.org/10.1016/j.jctube.2022.100343>
- Adeiza, M. A., Momodu, A. S., & Abubakar, A. (2016). Type 2 diabetes mellitus: A review of current trends. *Annals of African Medicine*, 15(2), 80–86. <https://doi.org/10.4103/1596-3519.188890>
- Agarwal, S., Shah, A., & Agarwal, S. (2015). Epidemiology of type 1 diabetes mellitus and its associated complications. *Journal of Clinical Medicine Research*, 7(9), 657–661. <https://doi.org/10.14740/jocmr2221w>
- Aisyi, A. A., Syafa'ah, I., Ferriastuti, W., & Wulaningrum, P. A. (2024). Chest X-Ray as A Predictor of Mortality in Pulmonary TB Patients with Respiratory Distress: A Literature Review. *International Journal Of Scientific Advances*, 5(6). <https://doi.org/10.51542/ijscia.v5i6.77>
- Alfaqeeh, M., Alfian, S. D., & Abdulah, R. (2024). Factors associated with diabetes mellitus among adults: Findings from the Indonesian Family Life Survey-5. *Endocrine and Metabolic Science*, 14, 100161. <https://doi.org/10.1016/j.endmts.2024.100161>
- Algoblan, A., Al-Alfi, M., & Khan, M. (2014). Mechanism linking diabetes mellitus and obesity. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, 7, 587–591. <https://doi.org/10.2147/DMSO.S67400>
- Anasulfalah, S., Hidayat, T., & Hartati, R. (2022). Clinical presentation of diabetes mellitus patients in primary health care. *Journal of Health Research*, 36(5), 725–732. <https://doi.org/10.1108/JHR-09-2020-0433>
- Anwar, A., Anwar, M., & Choudhary, A. (2018). Chronic inflammation and insulin resistance: Pathophysiological link. *Journal of Diabetes Research*, 2018, Article 4124013. <https://doi.org/10.1155/2018/4124013>
- Arndt, T., Holl, R. W., & Steck, A. K. (2013). Pathogenesis of type 1 diabetes: Genetics and environment. *Endocrine Reviews*, 34(5), 507–533. <https://doi.org/10.1210/er.2012-1073>
- Awad, S. F., Huangfu, P., & Badran, M. (2020). Global trends in diabetes prevalence. *Diabetes Research and Clinical Practice*, 170, 108484. <https://doi.org/10.1016/j.diabres.2020.108484>
- Baby, K., & Nair, A. (2020). Prognostic factors in tuberculosis patients with diabetes. *International Journal of Tuberculosis and Lung Disease*, 24(7), 717–723. <https://doi.org/10.5588/ijtld.19.0667>
- Bai, W., & Ameyaw, E. K. (2024). Global, regional and national trends in tuberculosis incidence and main risk factors: a study using data from 2000 to 2021. *BMC Public Health*, 24(1), 12. <https://doi.org/10.1186/s12889-023-17495-6>
- Badr, M., Ahmed, S., & Elnagar, M. (2022). Sputum smear microscopy for diagnosis of pulmonary tuberculosis: Diagnostic value and grading. *BMC Infectious Diseases*, 22(1), 112. <https://doi.org/10.1186/s12879-021-06982-z>

- Boadu, A. A., Yeboah-Manu, M., Osei-Wusu, S., & Yeboah-Manu, D. (2024). Tuberculosis and diabetes mellitus: The complexity of the comorbid interactions. *International Journal of Infectious Diseases*, *146*, 107140. <https://doi.org/10.1016/j.ijid.2024.107140>
- Cahyaningrum, A., & Sugiharti, S. (2020). Age and diabetes prevalence: Epidemiological analysis in Indonesia. *Indonesian Journal of Public Health*, *15*(2), 103–110.
- Centers for Disease Control and Prevention. (2020). *Tuberculosis (TB): Transmission and cause*. U.S. Department of Health & Human Services. <https://www.cdc.gov/tb/>
- Chhabra, M. K., & Kamra, K. S. (2024). Clinic Radiological Profile of Pulmonary Tb and Diabetes at A Tertiary Care Center. *Journal of Contemporary Clinical Practice*, *10*(2), 305–310.
- Cissé, A., Ndiaye, M., & Kane, Y. (2021). Radiological findings in pulmonary tuberculosis with diabetes mellitus: A comparative study. *Journal of Radiology Case Reports*, *15*(12), 13–21. <https://doi.org/10.3941/jrcr.v15i12.4324>
- Darwitz, B. P., Genito, C. J., & Thurlow, L. R. (2024). Triple threat: how diabetes results in worsened bacterial infections. *Infection and Immunity*, *92*(9). <https://doi.org/10.1128/iai.00509-23>
- Fatihah, H. B., Latief, M. A., & Herdwiyantri, M. (2025). Comparing Chest Radiograph Lesion Areas in Pulmonary Tuberculosis Patients with and without Diabetes Mellitus: A 2023 Study at Waled Hospital, Cirebon, Indonesia. *GHMJ (Global Health Management Journal)*, *8*(2), 166–171. <https://doi.org/10.35898/ghmj-821161>
- Fennelly, K. P., & Jones-López, E. C. (2015). Quantity and quality of inhaled dose predicts immunopathology in tuberculosis. *Frontiers in Immunology*, *6*(313), 1–10. <https://doi.org/10.3389/fimmu.2015.00313>
- Fitriangga, A., Alex, A., Tamtama, R., & Aryati, R. (2025). Nationwide assessment of tuberculosis treatment outcomes and their determinants in Indonesia: A retrospective cohort study of over one million cases (2020–2022). *Indian Journal of Tuberculosis*. <https://doi.org/10.1016/j.ijtb.2025.08.006>
- Fujita, M., Nagashima, K., Takahashi, S., Suzuki, K., Fujisawa, T., & Hata, A. (2020). Handheld flow meter improves COPD detectability regardless of using a conventional questionnaire: A split-sample validation study. *Respirology*, *25*(2), 191–197. <https://doi.org/10.1111/resp.13602>
- Gautam, A., Kumar, R., Jha, R., Shahi, S. K., & Yadav, A. K. (2021). Radiological spectrum of pulmonary tuberculosis and its association with clinical presentation: A prospective study. *International Journal of Research in Medical Sciences*, *9*(2), 349–354. <https://doi.org/10.18203/2320-6012.ijrms20210492>
- Gautam, N., Sharma, R., & Kaur, G. (2021). Clinical and radiological manifestations of pulmonary tuberculosis: A review. *Lung India*, *38*(3), 243–249. https://doi.org/10.4103/lungindia.lungindia_352_20
- Geric, C., Majidulla, A., Tavaziva, G., Nazish, A., Saeed, S., Benedetti, A., Khan, A. J., & Ahmad Khan, F. (2023). Artificial intelligence-reported chest X-ray

- findings of culture-confirmed pulmonary tuberculosis in people with and without diabetes. *Journal of Clinical Tuberculosis and Other Mycobacterial Diseases*, 31, 100365. <https://doi.org/10.1016/j.jctube.2023.100365>
- Gezahegn, H., Ibrahim, M., & Mulat, E. (2020). Diabetes Mellitus and Tuberculosis Comorbidity and Associated Factors Among Bale Zone Health Institutions, Southeast Ethiopia. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy, Volume 13*, 3879–3886. <https://doi.org/10.2147/DMSO.S248054>
- Goldhaber-Fiebert, J. D., Rubinfeld, R. E., & Kahn, J. G. (2011). The public health impact of diabetes: Epidemiology and complications. *Diabetes Care*, 34(4), 890–897.
- Gupta, U. D., & Katoch, V. M. (2009). Animal models of tuberculosis. *Tuberculosis*, 89(1), 1–9. <https://doi.org/10.1016/j.tube.2008.05.002>
- Houben, R. M. G. J., & Dodd, P. J. (2016). The global burden of latent tuberculosis infection: A re-estimation using mathematical modelling. *PLoS Medicine*, 13(10), e1002152. <https://doi.org/10.1371/journal.pmed.1002152>
- Jali, M. V., Mahishale, V. K., & Hiremath, M. B. (2013). Diabetes mellitus and pulmonary tuberculosis: A single center study. *Journal of Diabetes & Metabolic Disorders*, 12(1), 37. <https://doi.org/10.1186/2251-6581-12-37>
- Jeon, C. Y., & Murray, M. B. (2008a). Diabetes Mellitus Increases the Risk of Active Tuberculosis: A Systematic Review of 13 Observational Studies. *PLoS Medicine*, 5(7), e152. <https://doi.org/10.1371/journal.pmed.0050152>
- Jeon, C. Y., & Murray, M. B. (2008b). Diabetes Mellitus Increases the Risk of Active Tuberculosis: A Systematic Review of 13 Observational Studies. *PLoS Medicine*, 5(7), e152. <https://doi.org/10.1371/journal.pmed.0050152>
- Joshi, R., Gupta, D., & Gupte, A. (2014). Diabetes and anti-TB therapy: Drug interactions and management. *Indian Journal of Tuberculosis*, 61(2), 94–102.
- Kashongwe, I. M., Ngalula, J. M., & Kakisingi, C. (2017). Prognosis of pulmonary tuberculosis in diabetic patients. *African Health Sciences*, 17(4), 1089–1098. <https://doi.org/10.4314/ahs.v17i4.14>
- Kaware, A. C., Jain, P., & Patel, M. (2022). Diabetes and tuberculosis: Clinical interaction and outcomes. *Indian Journal of Medical Microbiology*, 40(3), 281–287.
- Kementerian Kesehatan RI. (2021). *Profil Kesehatan Indonesia 2021*.
- Kumar, N. P., Sridhar, R., Banurekha, V. V., Jawahar, M. S., Fay, M. P., Nutman, T. B., & Babu, S. (2013). Type 2 Diabetes Mellitus Coincident with Pulmonary Tuberculosis Is Associated with Heightened Systemic Type 1, Type 17, and Other Proinflammatory Cytokines. *Annals of the American Thoracic Society*, 10(5), 441–449. <https://doi.org/10.1513/AnnalsATS.201305-112OC>
- Lee, M., Kim, H., & Park, S. (2021). Diagnostic performance of sputum smear microscopy in pulmonary tuberculosis. *Tuberculosis and Respiratory Diseases*, 84(1), 49–56. <https://doi.org/10.4046/trd.2020.0070>
- Maitra, A., Munshi, T., Healy, J., Martin, L. T., Vollmer, W., Keep, N. H., & Bhakta, S. (2019). Cell wall peptidoglycan in Mycobacterium tuberculosis: An Achilles' heel for the TB-causing pathogen. *FEMS Microbiology Reviews*, 43(5), 548–575. <https://doi.org/10.1093/femsre/fuz016>

- Makrufardi, F., Sari, D., & Adi, S. (2023). The impact of diabetes on tuberculosis treatment outcomes: A cohort study. *BMC Public Health*, 23, 1572. <https://doi.org/10.1186/s12889-023-1572-3>
- Mekala, K. C., & Bertoni, A. G. (2020). Global burden of diabetes mellitus: Epidemiology and trends. *Diabetes Research and Clinical Practice*, 166, 108293. <https://doi.org/10.1016/j.diabres.2020.108293>
- Mohapatra, P. R., Janmeja, A. K., & Singh, I. (2018). Predictors of poor prognosis in patients with pulmonary tuberculosis and diabetes mellitus. *Lung India*, 35(6), 474–479.
- Munna, A., Ahmed, F., & Chowdhury, M. (2019). Chest X-ray findings in pulmonary tuberculosis patients with and without diabetes mellitus. *Chest & Lung Journal*, 21(2), 103–110.
- Munna, A. H., Rahman, M. M., Kabir, M. F., & Rahman, M. A. (2019). Radiological patterns of pulmonary tuberculosis in diabetic and non-diabetic patients: A comparative study. *Chest & Lung Research*, 1(1), 1–6.
- Nachiappan, A. C., Rahbar, K., & Shi, X. (2017). Pulmonary tuberculosis: Role of radiology in diagnosis and management. *American Journal of Roentgenology*, 208(5), 944–955. <https://doi.org/10.2214/AJR.16.17278>
- Nihues, S. S., Mancuzo, E. V., Sulmonetti, N., Sacchi, F. P., Viana, V. S., Netto, E. M., Rabahi, M. F., & Kritski, A. L. (2015). Chronic symptoms and radiographic findings in patients with pulmonary tuberculosis. *The Brazilian Journal of Infectious Diseases*, 19(5), 503–510. <https://doi.org/10.1016/j.bjid.2015.07.002>
- Qazi, F., Khan, A., & Qureshi, A. (2022). Adverse effects of TB drugs in diabetic patients: A clinical review. *Journal of Clinical Pharmacology*, 62(7), 885–893.
- Roseno, A. (2022). Extended TB treatment duration in diabetic patients. *Indonesian Journal of Respiratory Medicine*, 4(2), 112–118.
- Ryu, H. (2015). Long-term prognosis of type 2 diabetes mellitus. *Korean Diabetes Journal*, 39(4), 203–210.
- Saalai, K. M., & Mohanty, A. (2021). The Effect of Glycemic Control on Clinico-Radiological Manifestations of Pulmonary Tuberculosis in Patients with Diabetes Mellitus. *The International Journal of Mycobacteriology*, 10(3), 268–270. https://doi.org/10.4103/ijmy.ijmy_133_21
- Shang, S., Chen, G., & Luo, H. (2011). Radiological features of pulmonary tuberculosis in diabetic patients. *Clinical Radiology*, 66(6), 544–549. <https://doi.org/10.1016/j.crad.2010.12.008>
- Sharma, S. K., & Mohan, A. (2017). Tuberculosis and diabetes: An update. *Indian Journal of Medical Research*, 145(2), 112–113.
- Sharma, S., & Pandit, A. (2020). Pathophysiology of type 2 diabetes mellitus. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(5), 1209–1213.
- Subkhan, M., Rezacharawa, M. A., Putra, M. A., Laitupa, A. A., Permana, P. B. D., & Irfana, L. (2024). Differences in Chest X-Ray Imaging in Pulmonary Tuberculosis across Various Comorbidities. *MAGNA MEDICA Berkala*

Ilmiah Kedokteran Dan Kesehatan, 11(2), 169.
<https://doi.org/10.26714/magnamed.11.2.2024.169-180>

- Tiwari, R., Goyal, R., & Gupta, P. (2018). MicroRNAs and type 2 diabetes mellitus. *Journal of Diabetes and Its Complications*, 32(11), 1070–1078.
- White, J., Chang, S. F., & Smith, K. (2018). Urbanization and lifestyle factors associated with diabetes prevalence. *Diabetes Care*, 41(2), 196–203.
- World Health Organization. (2020). *Global tuberculosis report 2020*.
- World Health Organization. (2022). *Global tuberculosis report 2022*.
- World Health Organization. (2022). *Global report on diabetes 2022*. WHO Press.
- World Health Organization. (2023). *Tuberculosis fact sheet*.
- Xue, W., Wang, J., & Li, X. (2019). Prognostic impact of diabetes mellitus in pulmonary tuberculosis. *PLoS ONE*, 14(10), e0224675. <https://doi.org/10.1371/journal.pone.0224675>
- Yadav, R. (2024). Pulmonary tuberculosis and its radiological correlation with clinical findings. *Journal of Pulmonary Medicine and Respiratory Care*, 12(1), 55–62.
- Zafar, M. I., Chen, L.-L., Xiaofeng, Y., & Gao, F. (2019). Impact of Diabetes Mellitus on Radiological Presentation of Pulmonary Tuberculosis in Otherwise Non-Immunocompromised Patients: A Systematic Review. *Current Medical Imaging Formerly Current Medical Imaging Reviews*, 15(6), 543–554. <https://doi.org/10.2174/1573405614666180806124416>
- Zhan, X., Liu, H., & Zhang, Y. (2023). Prognostic factors in pulmonary tuberculosis patients: A prospective study. *BMC Pulmonary Medicine*, 23(1), 78. <https://doi.org/10.1186/s12890-023-02456-z>