

## DAFTAR PUSTAKA

- Abdullah, K., Jannah, M., Aiman, U., Hasda, S., Fadilla, Z., Taqwin, Masita, Ardiawan, K. N., & Sari, E. M. (2021). *Metode Penelitian Kuantitatif*. Yayasan Penerbit Muhammad Zaini. <http://penerbitzaini.com>
- Adamson, C. H., Eisen, E. A., Kapellusch, J., Hegmann, K. T., Thiese, M. S., Dale, A. M., Evanoff, B., Meyers, A. R., Bao, S., Gerr, F., Krause, N., & Rempel, D. (2022). Occupational Risk Factors for Work Disability Following Carpal Tunnel Syndrome: a Pooled Prospective Study. *Occupational and Environmental Medicine*, 79(7), 442–451. <https://doi.org/10.1136/oemed-2021-107771>
- Adiputra, I., Trisnadewi, N., Oktaviani, N., Munthe, S., Hulu, V., Budiastutik, I., Faridi, A., Ramdany, R., Fitriani, R., Tania, P., Rahmiati, B., Sianturi, E., & Suryana. (2021). *Metodologi Penelitian Kesehatan*. Yayasan Kita Menulis. <https://repo.uinmybatusangkar.ac.id/xmlui/handle/123456789/23648>
- Albulescu, P., Macsinga, I., Sulea, C., Pap, Z., Tulbure, B. T., & Rusu, A. (2025). Short Breaks During the Workday and Employee-Related Outcomes. A Diary Study. *Psychological Reports*. <https://doi.org/10.1177/00332941251317632>
- Alfiani, R. R., Listyandini, R., & Fathimah, A. (2023). Faktor-Faktor yang Berhubungan dengan Keluhan Musculoskeletal Disorders (MSDs) pada Penjahit di Pasar Anyar Bogor Tahun 2022. *PROMOTOR : Jurnal Mahasiswa Kesehatan Masyarakat*, 6(3), 204–212. <https://doi.org/10.32832/pro>
- Arifin, A. N., & Permatasari, U. I. (2021). Hubungan Lama Dan Masa Kerja Terhadap Risiko Terjadinya Carpal Tunnel Syndrome (CTS) Pada Staff Administrasi Pengguna Komputer: Narrative Review. *Journal Physical Therapy UNISA*, 1(1), 34–40. <https://doi.org/10.31101/jitu.2018>
- Awali, N. B., Maddusa, S., & Malonda, N. S. H. (2024). Faktor-Faktor yang Berhubungan dengan Gejala Carpal Tunnel Syndrome (CTS) pada Pekerja Di PT. PLN (Persero) UP3 Manado. *Jurnal Kesehatan Tambusai*, 5(3). <https://journal.universitaspahlawan.ac.id/index.php/jkt/article/view/30507>
- Barr, A. E. (2002). Pathophysiological Tissue Changes Associated with Repetitive Movement: A Review of the Evidence. *Phys Ther*, 82(2), 173–187. <https://pubmed.ncbi.nlm.nih.gov/11856068/>
- Bordoni, B., Sugumar, K., & Anterpreet, D. (2025). Myofascial Pain Continuing Education Activity. In *Treasure Island (FL): StatPearls*. <https://pubmed.ncbi.nlm.nih.gov/30570965/>

- CDC. (2004). *A Guide to Selecting Non-Powered Hand Tools*.  
<http://www.dir.ca.gov/dosh/puborder.asp>
- CDC. (2017). *Work/Rest Schedules Sample for Workers Wearing Normal Clothing* \*. <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf>.
- CDC. (2022). *Hierarchy of Controls*. National Institute for Occupational Safety and Health.
- Costrila, C., & Wahyuni, O. D. (2022). Musculoskeletal Pain With Body Mass Index, Duration of Activity and Lecture During Distance Learning. *Jurnal Ilmiah Ilmu Kesehatan*, 4(2), 259–267. <https://doi.org/10.36590/jika.v4ix2.380>
- Çupi, B., Šarac, I., Jovanović, J. J., Jovanović, S., & Jovanović, J. (2023). Occupational and Non-Occupational Risk Factors Correlating With the Severity of Clinical Manifestations of Carpal Tunnel Syndrome and Related Work Disability among Workers who Work with a Computer. *Arhiv Za Higijenu Rada i Toksikologiju*, 74(4), 252–272. <https://doi.org/10.2478/aiht-2023-74-3754>
- Dembe, A. E., Erickson, J. B., Delbos, R. G., & Banks, S. M. (2005). The Impact of Overtime and Long Work Hours on Occupational Injuries and Illnesses: New Evidence from the United States. *Occupational and Environmental Medicine*, 62(9), 588–597. <https://doi.org/10.1136/oem.2004.016667>
- Dul, Jan., & Weerdmeester, B. A. . (2003). *Ergonomics for beginners : a quick reference guide*. Taylor & Francis. [https://ftp.idu.ac.id/wp-content/uploads/ebook/ip/BUKU%20ERGONOMI/BUKU%20INGGRIS/Introduction\\_to\\_Ergonomics\\_.pdf](https://ftp.idu.ac.id/wp-content/uploads/ebook/ip/BUKU%20ERGONOMI/BUKU%20INGGRIS/Introduction_to_Ergonomics_.pdf)
- Erick, P., Benjamin, K., Raditloko, S., Tapera, R., & Mbongwe, B. (2021). Risk factors for self-reported carpal tunnel syndrome among hairstylists in gaborone, botswana. *International Journal of Occupational Medicine and Environmental Health*, 34(3), 437–450. <https://doi.org/10.13075/IJOMEH.1896.01659>
- EU OSHA. (2013). Work-Related Musculoskeletal Disorders: Prevalence, Costs and Demographics in the EU. *European Statistics on Accidents at Work*. <https://doi.org/10.2802/66947>
- Febriani, W., & Hastuty, M. (2023). Faktor-Faktor Yang Berhubungan Dengan Kejadian Carpal Tunnel Syndrome (CTS) Pada Pekerja Bagian Prouksi Di PT Sewangi Sawit Sejahtera Kecamatan Tapung Tahun 2023. *Jurnal Ilmiah Ilmu Kesehatan*, 1(3), 2023. <https://doi.org/https://doi.org/10.31004/jiik.v2i1.23265>

- Fitriana, F., Soemarmo, D., Adi, N. P., & Prawiroharjo, P. (2024). Analysis of The Relationship between Manual Handling and Individual Factors with De Quervain Syndrome in Workers of Heavy Equipment Manufacturing Company PT. K. *The Indonesian Journal of Community and Occupational Medicine*, 4(2), 45–51. <https://ijcom.org/index.php/ijcom/article/view/137>
- Gerger, H., Macri, E. M., Jackson, J. A., Elbers, R. G., van Rijn, R., Søgaard, K., Burdorf, A., Koes, B., & Chiarotto, A. (2024). Physical and Psychosocial Work-Related Exposures and The Incidence of Carpal Tunnel Syndrome: A Systematic Review of Prospective Studies. *Applied Ergonomics*, 117. <https://doi.org/10.1016/j.apergo.2023.104211>
- Ghasemi, F., Gholamizadeh, K., Rahmani, R., & Irani, A. D. (2020). Prevalence and Severity of Carpal Tunnel Syndrome Symptoms among Iranian Butchers and Their Association with Occupational Risk Factors: Implications for Ergonomic Interventions. *IOS Press*, 66(4), 817–825. <https://doi.org/10.3233/WOR-203227>
- Hewitt, S., Dong, R., McDowell, T., & Welcome, D. (2016). The Efficacy of Anti-vibration Gloves. *Acoustics Australia*, 44(1), 121–127. <https://doi.org/10.1007/s40857-015-0040-5>
- Hutabarat, Y. (2017). *Dasar-Dasar Pengetahuan Ergonomi* (1st ed.). Media Nusa Creative.
- ILO. (2019). *ILO List of Occupational Diseases*. <https://www.ilo.org/publications/ilo-list-occupational-diseases-revised-2010>
- International Organization for Standardization. (2001). *ISO 5349-1:2001 Mechanical vibration — Measurement and evaluation of human exposure to hand-transmitted vibration — Part 1: General requirements*.
- Johanning, E., Stillo, M., & Landsbergis, P. (2020). Powered-Hand Tools and Vibration-Related Disorders in US Railway Maintenance of Way Workers. *Industrial Health*, 58, 539–553. <https://doi.org/10.2486/indhealth.2020-0133>
- Joshi, A., Patel, K., Mohamed, A., Oak, S., Zhang, M. H., Hsiung, H., Zhang, A., & Patel, U. K. (2022). Carpal Tunnel Syndrome: Pathophysiology and Comprehensive Guidelines for Clinical Evaluation and Treatment. *Cureus*. <https://doi.org/10.7759/cureus.27053>
- Kemenaker. (2018). *Peraturan Menteri Ketenagakerjaan Nomor 5 Tahun 2018 tentang Keselamatan dan Kesehatan Kerja Lingkungan Kerja*.
- Kemenaker. (2022). *Profil Keselamatan dan Kesehatan Kerja Nasional Indonesia Tahun 2022*. <https://satudata.kemnaker.go.id/satudata->

[public/2022/10/files/publikasi/1675652225177\\_Profil%2520K3%2520Nasional%25202022.pdf](#)

- Kemenkes. (2021). *Cara Mengukur Indeks Massa Tubuh (IMT)*. <https://ayosehat.kemkes.go.id/list-perangkat-ajar/cara-mengukur-indeks-massa-tubuh-imt>
- Kemenkes. (2022). *Peraturan Menteri Kesehatan No. 11 tahun 2022 tentang Pelayanan Kesehatan Penyakit Akibat Kerja*.
- Kementerian Kesehatan RI. (2021). *Pedoman dan Standar Etik Penelitian dan Pengembangan Kesehatan Nasional*.
- Kholish, A., Rika, M., & Dwiyantri, E. (2022). Hubungan antara Indeks Massa Tubuh dengan Keluhan Muskuloskeletal Disorders (Studi Kasus pada Pekerja Operator Container Crane PT. X Surabaya). *Media Gizi Kesmas*, 11(02). <https://e-journal.unair.ac.id/MGK/article/view/34915>
- Kristiana, R., Syafi'ur, A., Muhammad, R., Sedyanto, Y., Lawa, K., Sutikno, B., Tyas, A. H., Tatan, W., Aep, S., & Afriansyah, S. (2022). *Manajemen Risiko*. Mega Press Nusantara. [www.megapress.co.id](http://www.megapress.co.id)
- Kumalasari, U. D., & Dwiyantri, E. (2022). Relationship Between Work Posture and Repetitive Movements with Complaints of Carpal Tunnel Syndrome (CTS) on Stone-Breaking Workers on The Banks of The Kalisetail River. Setail Village, Genteng District, Banyuwangi Regency. *Journal of Public Health Research and Community Health Development*, 6(1), 21–26. <https://doi.org/10.20473/jphrecode.v6i1.25082>
- Kurniawidjadja, L. M. , O. S. , R. D. H. , K. S. , & K. M. (2019). *Buku ajar penyakit akibat kerja dan surveilans*. Universitas Indonesia Publishing. [https://books.google.co.id/books/about/Buku\\_Ajar\\_Penyakit\\_Akibat\\_Kerja\\_dan\\_Surv.html?id=KrFBEAAAQBAJ&redir\\_esc=y](https://books.google.co.id/books/about/Buku_Ajar_Penyakit_Akibat_Kerja_dan_Surv.html?id=KrFBEAAAQBAJ&redir_esc=y)
- Lee, J. G., Kim, G. H., Jung, S. W., Kim, S. W., Lee, J. H., & Lee, K. J. (2018). The Association between Long Working Hours and Work-Related Musculoskeletal Symptoms of Korean Wage Workers: Data from the Fourth Korean Working Conditions Survey (a Cross-Sectional Study). *Annals of Occupational and Environmental Medicine*, 30(1). <https://doi.org/10.1186/s40557-018-0278-0>
- Lestari, S., Lestari, I. P., & Khasanah, M. A. (2023). Gambaran Keluhan Muskuloskeletal Disorder pada Pekerja Pemecah Batu di Leyangan, Ungaran Timur. *Pro Health Jurnal Ilmiah Kesehatan*, 5(2). <https://jurnal.unw.ac.id/index.php/PJ/article/view/2425>

- Li, S., Kociolek, A. M., Mariano, L. A., & Loh, P. Y. (2025). Grip Force Modulation on Median Nerve Morphology Changes. *Journal of Orthopaedic Research*, 43(6), 1179–1190. <https://doi.org/10.1002/jor.26068>
- Li, Z. M., & Jordan, D. B. (2023). Carpal Tunnel Mechanics and Its Relevance to Carpal Tunnel Syndrome. *Human Movement Science*, 87. <https://doi.org/10.1016/j.humov.2022.103044>
- Loh, P. Y., Nakashima, H., & Muraki, S. (2016). Effects of Grip Force on Median Nerve Deformation at Different Wrist Angles. *PeerJ*, 2016(9). <https://doi.org/10.7717/peerj.2510>
- Luger, T., Maher, C. G., Rieger, M. A., & Steinhilber, B. (2019). Work-break Schedules for Preventing Musculoskeletal Symptoms and Disorders in Healthy Workers. *Cochrane Database of Systematic Reviews*, 2019(7). <https://doi.org/10.1002/14651858.CD012886.pub2>
- Middlesworth, M. (2012). *A Step-by-Step Guide Rapid Upper Limb Assessment (RULA)*. Ergonomic Plus. [www.ergo-plus.com](http://www.ergo-plus.com)
- Middlesworth, M. (2025). *8 Fundamental Ergonomic Principles for Better Work Performance*. ErgoPlus.
- Nandy, A., Basu, A., & Ghosh, A. (2022). Robust Inference for Skewed Data in Health Sciences. *Journal of Applied Statistics*, 49(8), 2093–2123. <https://doi.org/10.1080/02664763.2021.1891527>
- NIOSH. (1983). *Vibration Syndrome*.
- Nur, N. M., Dawal, S. Z. M., Dahari, M., & Sanusi, J. (2015). Muscle Activity, Time to Fatigue, and Maximum Task Duration at Different Levels of Production Standard Time. *Journal of Physical Therapy Science*, 27(7). <https://pubmed.ncbi.nlm.nih.gov/articles/PMC4540872/>
- O'Connor, D., Marshall, S. C., Massy-Westropp, N., & Pitt, V. (2017). Non-Surgical Treatment (Other Than Steroid Injection) for Carpal Tunnel Syndrome. *Cochrane Database of Systematic Reviews*, 2017(12). <https://doi.org/10.1002/14651858.CD003219>
- Octaviana, F., Putra, Y., Safri, A. Y., Wiratman, W., Indrawati, L. A., & Hakim, M. (2022). Validity and Reliability Test of The Indonesian Version of Boston Carpal Tunnel Syndrome Questionnaire. *EJournal Kesehatan Indonesia*, 10(1). <https://doi.org/10.23886/ejki.10.132.18>
- Padula, R. S., Comper, M. L. C., Sparer, E. H., & Dennerlein, J. T. (2017). Job Rotation Designed to Prevent Musculoskeletal Disorders and Control Risk in Manufacturing Industries: A Systematic Review. *Applied Ergonomics*, 58, 386–397. <https://doi.org/10.1016/j.apergo.2016.07.018>

*Peraturan Pemerintah No. 50 Tahun 2012 tentang Sistem Manajemen K3 (SMK3).*  
(n.d.).

Pew, R., Drury, C., & Andersson, G. (2005). *Work-Related Musculoskeletal Disorders*. National Academy Press.

Purbaningrum, S. P., Johannes, J., Imansuri, F., Salati, D., & Solih, E. S. (2023). Implementasi Jig Welding untuk Meningkatkan Efisiensi Pengelasan Frame Base. *Journal of Community Services in Sustainability*, 2(1), 55–64. <https://doi.org/10.52330/jocess.v2i1.277>

Putra, B. I., & Khatamy, M. R. (2024). Revolutionizing Welding Ergonomics to Mitigate Musculoskeletal Risks. *Indonesian Journal of Innovation Studies*, 25(4). <https://doi.org/10.21070/ijins.v25i4.1187>

Qibtiyah, M. (2022). Ergonomic Risk Analysis and Musculoskeletal Disorders (MSDs) On Operator Uniformity Final Inspection. *Proceeding The Second Muhammadiyah Internasional- Public Health and Medicine Conference*, 2(1). <http://e-journal.fkmumj.ac.id/>

Republik Indonesia. (2003). *Undang-Undang No. 13 Tahun 2003 tentang Ketenagakerjaan*.

Roquelaure, Y., Garlantézec, R., Evanoff, B. A., Descatha, A., Fassier, J.-B., & Bodin, J. (2020). Personal, Biomechanical, Psychosocial, and Organizational Risk Factors for Carpal Tunnel Syndrome: a Structural Equation Modeling Approach. *The Journal of the International Association for the Study of PAIN*, 161(4). <https://pubmed.ncbi.nlm.nih.gov/31815912/>

Schwiete, C., Roth, C., Mester, J., Broich, H., & Behringer, M. (2025). Overlaps of Skeletal Muscle Fatigue and Skeletal Muscle Damage: The Muscle Injury Continuum. *Sports Medicine - Open*, 11(1). <https://doi.org/10.1186/s40798-025-00876-z>

Septiawati, D., & Hasyim, H. (2013). Ergonomic Risk Factors During Typing and Its Association With Carpal Tunnel Syndrome (CTS). *Jurnal Ilmu Kesehatan Masyarakat*. <https://share.google/HfyZfM8tOdBF2XCwX>

Setyowati, D. L., Dwijayanti, D., & Sultan, M. (2015). Related Factors of Carpal Tunnel Syndrome (CTS) among Onion Skin Peeler Worker at Segiri Samarinda, East Kalimantan. *KESMAS*, 9(2), 125–132.

Sevy, JO. S. RE. & V. M. (2023). *Carpal Tunnel Syndrome*. StatPearls. <https://www.ncbi.nlm.nih.gov/books/NBK448179/>

Shah, D. (2009). Healthy Worker effect Phenomenon. *Indian Journal of Occupational and Environmental Medicine*, 13(2), 77–79. <https://doi.org/10.4103/0019-5278.55123>

- Smith, T. T. G., & Gallagher, S. (2018). Impact of Loading and Work Rest Intervals on Muscle Micro-Trauma. *International Journal of Industrial Ergonomics*, 66, 161–168. <https://doi.org/10.1016/j.ergon.2018.03.002>
- Soares, C. O., Pereira, B. F., Gomes, M. V. P., Marcondes, L. P., Gomes, F. D. C., & Melo-Neto, J. S. De. (2019). Preventive Factors Against Work-Related Musculoskeletal Disorders: Narrative review. *Revista Brasileira de Medicina Do Trabalho*, 17(3), 415–430. <https://doi.org/10.5327/Z1679443520190360>
- Song, J., Choi, Y.-S., Lee, S., Park, D., & Park, J. (2025). Changes in Muscle Oxygenation and Activity during Cumulative Isometric Muscle Contraction: New Insight into Muscle Fatigue. *Frontiers in Physiology*, 16. <https://doi.org/10.3389/fphys.2025.1559893>
- Studi Pendahuluan Di PT. X (2025).
- Suhardi, B. (2015). *Perencanaan Sistem Kerja*. Sebelas Maret University Press.
- Suratno, T. Y. L., Ruliati, L. P., & Sahdan, M. (2022). Faktor yang Berhubungan dengan Keluhan Musculoskeletal Disorders (Msd) pada Pekerja Konstruksi Pt. Pembangunan Perumahan di Bendungan Manikin. *SEHATMAS: Jurnal Ilmiah Kesehatan Masyarakat*, 1(4), 666–678. <https://doi.org/10.55123/sehatmas.v1i4.970>
- Syahril, R. S., Ariyani, A. P., Indrawati, A., Lintuuran, R. M. W., Anggraini, W., Sulistyowati, I., & Then, C. V. (2025). Stres Kerja Berhubungan dengan Keluhan Muskuloskeletal pada Dokter Gigi. *Journal of Integrated System*, 8(1), 16–25. <https://doi.org/10.28932/jis.v8i1.9819>
- Syapitri, A. & A. (2021). *Metodologi Penelitian Kesehatan* (A. H. Nadona, Ed.; 1st ed.). Ahli Media Press.
- Taroreh, F. F., Joseph, W. B. S., Kawatu, P. A. T., Kesehatan, F., Universitas, M., & Ratulangi, S. (2017). Hubungan antara Umur dan Masa Kerja dengan Keluhan Musculoskeletal pada Kusir Bendi di Kota Tomohon. *Jurnal KESMAS*, 6(3). <https://ejournal.unsrat.ac.id/index.php/kesmas/article/view/23015>
- Tarwaka, Hadi, & Sudiajeng. (2019). Ergonomi untuk Kesehatan, Keselamatan Kerja dan Produktivitas. In *UNIBA PRESS*.
- Urbayatun, S., & Widhiarso, W. (2012). Variabel Mediator dan Moderator dalam Penelitian Psikologi Kesehatan Masyarakat. *Jurnal Psikologi*, 39(2), 180–188. <https://jurnal.ugm.ac.id/jpsi/article/view/6985>
- Wan, J. J., Qin, Z., Wang, P. Y., Sun, Y., & Liu, X. (2017). Muscle Fatigue: General Understanding and Treatment. *Experimental and Molecular Medicine*, 49(10). <https://doi.org/10.1038/emm.2017.194>

- Wells, R. W. (2016). *Glove selection to minimize effort and MSD risk*.
- Wildasari, T., & Nurcahyo, R. E. (2023). Hubungan antara Postur Kerja, Umur dan Masa Kerja dengan Keluhan Musculoskeletal Disorders (MSDs) pada Pekerja di CV. Sada Wahyu Kabupaten Bantul Yogyakarta. *Jurnal Lentera Kesehatan Masyarakat*, 2(1). <https://jurnalkesmas.co.id>
- You, D., Smith, A. H., & Rempel, D. (2014). Meta-analysis: Association Between Wrist Posture and Carpal Tunnel Syndrome among Workers. *Safety and Health at Work*, 5(1), 27–31. <https://doi.org/10.1016/j.shaw.2014.01.003>
- Yudistira, A., Suroto, S., & Jayanti, S. (2022). Analisis Faktor Carpal Tunnel Syndrome pada Operator Jahit Bagian Produksi PT Leading Garment. *Jurnal Kesehatan Masyarakat FKM Undip*, 10(4). <https://doi.org/10.14710/jkm.v10i4.33714>
- Yudiyanta, Khoirunnisa, N., & Novitasari, R. W. (2015). Assessment Nyeri. *Journal Article Cermin Dunia Kedokteran*, 42(2). <https://www.neliti.com/publications/398402/assessment-nyeri>
- Zadon, H., Michnik, R., & Nowakowska-Lipiec, K. (2023). Exploring the Impact of Body Mass Change on Fatigue and Activity of the Muscular System during Daily Routine. *Technology and Health Care*, 31(6), 2487–2498. <https://doi.org/10.3233/THC-235014>
- Zavaleanu, A. D. R., Lungulescu, C. V., Bunescu, M. G., Vasile, R. C., Gheorman, V., Gresita, A., & Dinescu, V. C. (2024). Occupational Carpal Tunnel Syndrome: a Scoping Review of Causes, Mechanisms, Diagnosis, and Intervention Strategies. In *Frontiers in Public Health* (Vol. 12). Frontiers Media SA. <https://doi.org/10.3389/fpubh.2024.1407302>