

DAFTAR PUSTAKA

1. United Nations. World Sosial Report 2023: Leaving no one behind in nn ageing world. 2023:18-19.
2. ASEAN. Ageing ASEAN: Shifting Demographic Structure. ASEAN Statistical Brief. 2023;3(1): 1.
3. Badan Pusat Statistik. Statistik penduduk lanjut usia 2023. Direktorat Statistik Kesejahteraan Rakyat. 2023;20(1): 1-3.
4. Shafiee G, Keshtkar A, Soltani A, Ahadi Z, Larijani B, Heshmat R. Prevalence of sarcopenia in the world: a systematic review and meta- analysis of general population studies. *J Diabetes Metab Disord*. 2017;16(1):21.
5. Cruz-Jentoft AJ, Bahat G, Bauer J, Boirie Y, Bruyère O, Cederholm T, *et al*. Sarcopenia: revised European consensus on definition and diagnosis. *Age Ageing*. 2019;48(1):16–31.
6. Harimurti K, Setiati S, Soejono CH, Aryana IGPS, Sunarti S, Budiningsih F, *et al*. Sarcopenia in a Multiethnic State: A cross-sectional data analysis of multicentre Indonesia longitudinal aging study. *Acta Med Indones-Indones J Internal Med*. 2023;55(1):61-62.
7. Kandinata SG, Widajanti N, Ichwani J, Firdausi H, Aryana IGPS, Alkaff FF. Diagnostic performance of calf circumference, ARC-F, and SARC-CalF for possible sarcopenia screening in Indonesia. *Nature portofolio*. 2023:1-2.
8. Yoowannakul S, Tangvoraphonkchai K, Davenport A. The prevalence of muscle wasting (sarcopenia) in peritoneal dialysis patients varies with ethnicity due to differences in muscle mass measured by bioimpedance. *Eur J Clin Nutr*. 2018 Mar 21;72(3):381–7.
9. Carrero JJ, Johansen KL, Lindholm B, Stenvinkel P, Cuppari L, Avesani CM. Screening for muscle wasting and dysfunction in patients with chronic kidney disease. *Kidney Int*. 2016 Jul;90(1):53–66.
10. Jauwerissa R, Marbun MB, Nugroho P, Rinaldi I, Suhardjono, Shatri H, *et al*. Factors associated with sarcopenia in maintenance hemodialysis patients: a cross-sectional study. *Acta Med Indones-Indones J Intern med*. 2023;55(1):29-30.

11. Tezze C, Sandri M, Tessari P. Anabolic resistance in the pathogenesis of sarcopenia in the elderly: role of nutrition and exercise in young and old people. *Nutrients*. 2023;15(1):3-4.
12. Yang A, Lv Q, Chen F, Wang Y, Liu Y, Shi W, et al. The effect of vitamin D on sarcopenia depends on the level of physical activity in older adults. *Journal of Cachexia, Sarcopenia and Muscle*. 2020;11:678-689.
13. Bollen SE, Bass JJ, Fujita S, Wilkinson D, Hewison M, Atherton PJ. The Vitamin D/Vitamin D receptor (VDR) axis in muscle atrophy and sarcopenia. *Elsevier*. 2022;(1):1-5.
14. Molina P, Carrero JJ, Bover J, Chauveau P, Mazzaferro S, Torres PU. Vitamin D, a modulator of musculoskeletal health in chronic kidney disease. *Journal of Cachexia, Sarcopenia and Muscle*. 2017;8:686-701.
15. Fu C, Wu F, Chen F, Han E, Gao Y, Xu Y. Association of serum 25-hydroxyvitamin D with gait speed and handgrip strength in patients on hemodialysis. *BMC Nephrology*. 2022;23:1-8.
16. Noor H, Reid J, Slee A. Resistance exercise and nutritional interventions for augmenting sarcopenia outcomes in chronic kidney disease: a narrative review. *J Cachexia Sarcopenia Muscle*. 2021 Dec 28;12(6):1621–40.
17. Slee AD, Reid J. Wasting in chronic kidney disease – a complex issue. *JCSM Clin Rep*. 2018 Jul;3(2):1–10.
18. Hanna RM, Ghobry L, Wassef O, Rhee CM, Kalantar-Zadeh K. A practical approach to nutrition, protein-energy wasting, sarcopenia, and cachexia in patients with chronic kidney disease. *Blood Purif*. 2020;49(1–2):202–11.
19. Komar B, Schwingshackl L, Hoffmann G. Effects of leucine-rich protein supplements on anthropometric parameter and muscle strength in the elderly: A systematic review and meta-analysis. *J Nutr Health Aging*. 2015 Apr 2;19(4):437–46.
20. Cruz-Jentoft AJ, Dawson Hughes B, Scott D, Sanders KM, Rizzoli R. Nutritional strategies for maintaining muscle mass and strength from middle age to later life: A narrative review. *Maturitas*. 2020 Feb;132:57–64.
21. Salles J, Chanet A, Giraudet C, Patrac V, Pierre P, Jourdan M, et al. 1,25(OH)₂-vitamin D₃ enhances the stimulating effect of leucine and insulin on protein

- synthesis rate through Akt/PKB and mTOR mediated pathways in murine C2C12 skeletal myotubes. *Mol. Nutr. Food Res.* 2013;0:1-10.
22. Chang MC, Choo YJ. Effects of whey wrotein, leucine, and vitamin D supplementation in patients with sarcopenia: a systemic review and meta-analysis. *Nutrients.* 2023;15:1-12.
 23. Giovannini S, Brau F, Forino R, Berti A, D'Ignazio F, Loreti C, *et al.* Sarcopenia: Diagnosis and management, state of the art and contribution of ultrasound. *J Clin Med.* 2021 Nov 26;10(23):5552.
 24. Petermann-Rocha F, Balntzi V, Gray SR, Lara J, Ho FK, Pell JP, *et al.* Global prevalence of sarcopenia and severe sarcopenia: a systematic review and meta-analysis. *J Cachexia Sarcopenia Muscle.* 2022 Feb 23;13(1):86–99.
 25. Carvalho do Nascimento PR, Bilodeau M, Poitras S. How do we define and measure sarcopenia? A meta-analysis of observational studies. *Age Ageing.* 2021 Nov 10;50(6):1906–13.
 26. Yuan S, Larsson SC. Epidemiology of sarcopenia: Prevalence, risk factors, and consequences. *Metabolism.* 2023;144:1-7.
 27. Chen LK, Woo J, Assantachai P, Auyeung TW, Chou MY, Iijima K, *et al.* Asian Working Group for Sarcopenia: 2019 consensus update on sarcopenia diagnosis and treatment. *J Am Med Dir Assoc.* 2020 Mar;21(3):300-307.e2.
 28. Hwang AC, Liu LK, Lee WJ, Peng LN, Chen LK. Calf Circumference as a screening instrument for appendicular muscle mass measurement. *J Am Med Dir Assoc.* 2018 Feb;19(2):182–4.
 29. Tanaka T, Takahashi K, Akishita M, Tsuji T, Iijima K. “Yubi-wakka” (finger-ring) test: A practical self-screening method for sarcopenia, and a predictor of disability and mortality among Japanese community-dwelling older adults. *Geriatr Gerontol Int.* 2018 Feb 12;18(2):224–32.
 30. Malmstrom TK, Miller DK, Simonsick EM, Ferrucci L, Morley JE. SARC-F: a symptom score to predict persons with sarcopenia at risk for poor functional outcomes. *J Cachexia Sarcopenia Muscle.* 2016 Mar;7(1):28–36.
 31. Lim WS, Chew J, Lim JP, Tay L, Hafizah N, Ding YY. Case for validated instead of standard cut-offs for SARC-CalF. *J Nutr Health Aging.* 2019 Apr 22;23(4):393–5.

32. Beaudart C, McCloskey E, Bruyère O, Cesari M, Rolland Y, Rizzoli R, *et al.* Sarcopenia in daily practice: assessment and management. *BMC Geriatr.* 2016;16(1):170.
33. Roberts HC, Denison HJ, Martin HJ, Patel HP, Syddall H, Cooper C, *et al.* A review of the measurement of grip strength in clinical and epidemiological studies: towards a standardised approach. *Age Ageing.* 2011;40(4):423–9.
34. Buckinx F, Landi F, Cesari M, Fielding RA, Visser M, Engelke K, *et al.* Pitfalls in the measurement of muscle mass: a need for a reference standard. *J Cachexia Sarcopenia Muscle.* 2018;9(2):269–78.
35. Gonzalez MC, Heymsfield SB. Bioelectrical impedance analysis for diagnosing sarcopenia and cachexia: what are we really estimating? *J Cachexia Sarcopenia Muscle.* 2017;8(2):187–9.
36. Rossi AP, Fantin F, Micciolo R, Bertocchi M, Bertassello P, Zanandrea V, *et al.* Identifying sarcopenia in acute care setting patients. *J Am Med Dir Assoc.* 2014;15(4):303.e7-303.e12.
37. Beaudart C, Rolland Y, Cruz-Jentoft AJ, Bauer JM, Sieber C, Cooper C, *et al.* Assessment of muscle function and physical performance in daily clinical practice. *Calcif Tissue Int.* 2019;105(1):1–14.
38. United Nations. World population ageing 2020 Highlights: Living arrangements of older persons. New York, US; 2020.
39. Mallappallil M, Friedman EA, Delano BG, McFarlane SI, Salifu MO. Chronic kidney disease in the elderly: evaluation and management. *Clinical Practice.* 2014;11(5):525–35.
40. Hill NR, Fatoba ST, Oke JL, Hirst JA, O’Callaghan CA, Lasserson DS, *et al.* Global prevalence of chronic kidney disease – A systematic review and meta-analysis. *PLoS One.* 2016;11(7):e0158765.
41. Kemenkes RI. Laporan Provinsi Sumatera Barat RISKESDAS 2018. Badan Penelitian dan Pengembangan Kesehatan. 2019;1:130.
42. Ebert N, Jakob O, Gaedeke J, van der Giet M, Kuhlmann MK, Martus P, *et al.* Prevalence of reduced kidney function and albuminuria in older adults: the Berlin Initiative Study. *Nephrology Dialysis Transplantation.* 2017;32(6):997–1005.

43. Candelaria Brito JC, Gutiérrez CG, Cruz CA. Chronic kidney disease in older adults. *Urology & Nephrology Open Access Journal*. 2020;8(2):46–51.
44. Nitta K, Okada K, Yanai M, Takahashi S. Aging and chronic kidney disease. *Kidney Blood Press Res*. 2013;38(1):109–20.
45. Kim DW, Song SH. Sarcopenia in chronic kidney disease: from bench to bedside. *Korean J Intern Med*. 2023;38(3):303–21.
46. Kooman JP, Kotanko P, Schols AMWJ, Shiels PG, Stenvinkel P. Chronic kidney disease and premature ageing. *Nat Rev Nephrol*. 2014;10(12):732–42.
47. Domański M, Ciechanowski K. Sarcopenia: A major challenge in elderly patients with end-stage renal disease. *J Aging Res*. 2012;1–12.
48. Sabatino A, Cuppari L, Stenvinkel P, Lindholm B, Avesani CM. Sarcopenia in chronic kidney disease: what have we learned so far? *J Nephrol*. 2021;34(4):1347–72.
49. Mori K. Maintenance of skeletal muscle to counteract sarcopenia in patients with advanced chronic kidney disease and especially those undergoing hemodialysis. *Nutrients*. 2021;13(5):1538.
50. Montezano AC, Touyz RM. Reactive oxygen species, vascular Noxs, and hypertension focus on translational and clinical research. *Antioxidants & Redox Signaling*. 2014;20(1):164–173.
51. Caturano A, D'Angelo M, Mormone A, Russo V, Mollica MP, Salvatore T, *et al*. Oxidative stress in type 2 diabetes: impacts from pathogenesis to lifestyle modifications. *Curr. Issues Mol. Biol*. 2024;45:6651–6666.
52. Ikizler TA, Burrowes JD, Byham-Gray LD, Campbell KL, Carrero JJ, Chan W, *et al*. KDOQI clinical practice guideline for nutrition in CKD: 2020 update. *Am J Kidney Dis*. 2020;76(3):S1–107.
53. Jeong JH, Biruete A, Tomayko EJ, Wu PT, Fitschen P, Chung HR, *et al*. Results from the randomized controlled IHOPE trial suggest no effects of oral protein supplementation and exercise training on physical function in hemodialysis patients. *Kidney Int*. 2019;96(3):777–86.
54. Alemañy GM, Ortiz RV, Soto GO, Guerrero IG, Esquivel GA, Quintanilla GC, *et al*. The effects of resistance exercise and oral nutritional supplementation

- during hemodialysis on indicators of nutritional status and quality of life. *Nephrology Dialysis Transplantation*. 2016;31(10):1712–20.
55. Jarczok AD, Makwana N, Luscombe-Marsh N, Visvanathan R, Schultz TJ. Effectiveness of exercise interventions on physical function in community-dwelling frail older people: an umbrella review of systematic reviews. *JBIM Database System Rev Implement Rep*. 2018;16(3):752–75.
 56. Cermak NM, Res PT, de Groot LC, Saris WH, van Loon LJ. Protein supplementation augments the adaptive response of skeletal muscle to resistance-type exercise training: a meta-analysis. *Am J Clin Nutr*. 2012;96(6):1454–64.
 57. Tiunan AY, Falavigna R, Lima TRd, Schueda MA. Supplementation for sarcopenia in chronic kidney disease updated literature review. *International Seven Journal of Health*. 2023;1-6.
 58. Cha RH. Pharmacologic therapeutics in sarcopenia with chronic kidney disease. *Kidney Res Clin Pract*. 2024;43(2):143-155.
 59. Isman H, Dwimartutie N, Setiati S, Nugroho P. Prevalence and factors associated with vitamin D inadequacy in the elderly population of South Sulawesi. *Research Square*. 2025;3:1-20.
 60. Christakos S, Dhawan P, Verstuyf, Verlinden L, Carmeliet G. Vitamin D: Metabolism, molecular mechanism of action, and pleiotropic effects. *Physiol Rev*. 2016;96:365-408.
 61. Lolascon G, Moretti A. Vitamin D and muscle. *Vitamin D – Updates*. 2020;3(3):78-80.
 62. Hill TR, Granic A, Aspray TJ. Vitamin D and ageing. *Biochemistry and Cell Biology of Ageing: Part I Biomedical Science, Subcellular Biochemistry* 90. Springer Nature Singapore. 2018:194-195.
 63. Remelli F, Vitali A, Zurlo A, Volpato S. Vitamin D deficiency and sarcopenia in older persons. *Nutrients*. 2019;11(1):1-14.
 64. Uchimoto R, Oyabu M, Kamei Y. Vitamin D and sarcopenia: Potential of vitamin D supplementation in sarcopenia prevention and treatment. *Nutrients*. 2020;12(1):1-12.

65. Montenegro KR, Carlessi R, Cruzat V, Newsholme P. Effects of vitamin D on primary human skeletal muscle cell proliferation, differentiation, protein synthesis and bioenergetics. *Journal of Steroid Biochemistry and Molecular Biology*. 2019;193(1):1-11.
66. Dzik KP, Kaczor JJ. Mechanism of vitamin D on skeletal muscle function: oxidative stress, energy metabolism and anabolic state. *European Journal of Applied Physiology*. 2019;119:825-839.
67. Gois PHF, Wolley M, Ranganathan D, Seguro AC. Vitamin D deficiency in chronic kidney disease: Recent evidence and controversies. *Int. J. Environ. Res. Public Health*. 2018;15(1):1-16.
68. Kim CS, Kim SW. Vitamin D and chronic kidney disease. *Korean J Intern Med*. 2014;29(1):416-427.
69. Lee YL, Jin H, Lim JY, Lee SY. Relationship between low handgrip strength and chronic kidney disease: KNHANES 2014-2017. *Journal of Renal Nutrition*. 2020:1-7.
70. Xu X, Yang Z, Ma T, Li Z, Chen Y, Zheng Y *et al*. The cut-off values of handgrip strength and lean mass index for sarcopenia among patients on peritoneal dialysis. *Nutr Metab (Lond)*. 2020;17(84):1-11.
71. Vitriana, Defi IR, Nugraha GI, Setiabudiawan B. Prevalensi sarkopenia pada lansia di komunitas (community dwelling) berdasarkan dua nilai cut-off parameter diagnosis. *MKB*. 2016;48:164-170.
72. Choe HJ, Cho BL, Park YS, Kim HJ, Lee SG, Kim BJ, *et al*. Gender differences in risk factors for the 2 year development on sarcopenia in community-dwelling older adults. *Journal of cachexia, Sarcopenia and Muscle*. 2022;13:1908-1918.
73. Sri-on J, Fusakul Y, Kredarunsooksree T, Paksopis T, Ruangsiri R. The prevalence and risk factors of sarcopenia among Thai community-dwelling older adults as defined by the Asian Working Group for Sarcopenia (AWGS-2019) criteria: a cross-sectional study. *BMC Geriatrics*. 2022;22:786.
74. Sallfeldt ES, Mallmin H, Karlsson MK, Mellstrom D, Hailer NP, Ribom EL. Sarcopenia prevalence and incidence in older men – a MrOs Sweden study. *Geriatric Nursing*. 2023:102-108.

75. Altaf S, Malmir K, Mir SM, Olyaei GR, Aftab A, Rajput TA. Prevalence and associated risk factors of sarcopenia in community-dwelling older adults in Pakistan: a cross-sectional study. *BMC Geriatrics*. 2024;24:497.
76. Gulcicek S, Sehayi N. Factors associated with sarcopenia in patients with chronic kidney disease: a cross-sectional single-center study. *Med Sci Monit*. 2023;29:e939457.
77. Duarte MP, Almeida LS, Neri SGR, Juliana SO, Wilkinson TJ, Ribeiro HS, *et al*. Prevalence of sarcopenia in patients with chronic kidney disease: a global systemic review and meta-analysis. *Journal of Cachexia, Sarcopenia and Muscle*. 2024;15:501-512.
78. Kurniawan MRA, Riviati N, Prananjaya BA, Reagan M, Aini S. Sarcopenia in elderly patients: what are the contributing risk factor?. *Jurnal Kedokteran dan Kesehatan*. 2024;11:157-166.
79. Handajani YS, Butterfill ES, Hengky A, Sugiyono SP, Lamadong V, Turana Y. Sarcopenia and impairment in global cognitive, delayed memory, and olfactory function, among community-dwelling adults, in Jakarta, Indonesia: active aging study. *Tzu Chi Medical Journal*. 2023;35(2):193-199.
80. Huang S, Zhou F, Zhou Y, Zhong J, Hong H, Weng G, *et al*. Prevalence and influencing factors of sarcopenia among older adults in rural coastal areas of Ningbo city. *Scientific Reports*. 2025;15:6037.
81. An JN, Kim JK, Lee HS, Kim SG, Kim HJ, Song YR. Late stage 3 chronic kidney disease is an independent risk factor for sarcopenia, but not proteinuria. *Scientific Reports*. 2021;11:18472.
82. Souza VA, Oliveira D, Barbosa S, Correa JOA, Colugnati FAB, Mansur HN, *et al*. Sarcopenia in patients with chronic kidney disease not yet on dialysis: analysis of the prevalence and associated factors. *PLOS ONE*. 2017:1-13.
83. Qian W, Jing G, Bing L, Ling D, Xiangya Z, Yi Y, *et al*. Analysis of clinical characteristics and risk factors of sarcopenia in elderly patients with chronic kidney disease stage 3-4. *Chinese Journal of Nephrology*. 2023;39:485-490.
84. Sarira CM, Aras D, Rini I. Hubungan antara indeks massa tubuh dengan risiko sarkopenia pada lanjut usia di kelurahan Untia kota Makassar. *Indonesian Journal of Physiotherapy*. 2023;2:26-24.

85. Nakanishi S, Iwamoto M, Shinohara H, Iwamoto H, Kaneto H. Significance of body mass index for diagnosing sarcopenia is equivalent to slow gait speed in Japanese individuals with type 2 diabetes: cross-sectional study using outpatient clinical data. *J Diabetes Investig.* 2021;3: 417-424.
86. Pinheiro LCHT, Rossi M, Santos CAF, Oliveira LVE, Vencio S, Vieira RP, *et al.* Prevalence of associations among sarcopenia, obesity, and metabolic syndrome in Brazilian older adults. *Frontiers in Medicine.* 2023;1-9.
87. Xuan Y, Pang S, Xie W, He R, Qin L, Yuan J. Sarcopenia predicts cardiovascular disease in chronic kidney disease at advanced stage and associated risks. *Medicine.* 2023;102:45.
88. Holmes CJ, Racette SB. The utility of body composition assessment in nutrition and clinical practice: an overview of current methodology. *Nutrients.* 2021;13:2493.
89. Curtis M, Swan L, Fox R, Warters A, O'Sullivan M. Associations between body mass index and probable sarcopenia in community-dwelling older adults. *Nutrients.* 2023;15:1505.
90. Wei S, Nguyen TT, Zhang Y, Ryu D, Gariani K. Sarcopenic obesity: epidemiology, pathophysiology, cardiovascular disease, mortality, and management. *Frontiers in Endocrinology.* 2023;1-11.
91. Nagda MYJ, Kankhara F, Parmar PA, Mody M, Vyas SS, Patel JS. Prevalence and predictors of sarcopenia, protein-energy wasting, and sarcopenic obesity in patients with chronic kidney disease. *Indian Journal of Nephrology.* 2024;20:1-7.
92. Sumandar, Yanti R, Fadhli R. Socio-demographic, nutritional status, risk of falls toward sarcopenia among community-dwelling elderly. *STRADA Jurnal Ilmiah Kesehatan.* 2021;1:130-137.
93. Hua N, Zhang Y, Tan X, Liu L, Mo Y, Yao X, *et al.* Nutritional status and sarcopenia in nursing home residents: a cross-sectional study. *Int. J. Environ. Res. Public Health.* 2022;19:17013.
94. Robinson S, Granic A, Cruz-Jentoft AJ, Sayer AA. The role of nutrition in the prevention of sarcopenia. *The American Journal of Clinical Nutrition.* 2023;118:852-864.

95. Calvani R, Picca A, Coelho-Junior HJ, Tosato M, Marzetti E, Landi F. Diet for the prevention and management of sarcopenia. *Metabolism*. 2023;146:155637.
96. Mellen RH, Girotto OS, Marques EB, Laurindo LF, Grippa PC, Mendes CG, *et al*. Insights into pathogenesis, nutritional and drug approach in sarcopenia: a systemic review. *Biomedicines*. 2023;11(1):136.
97. Piccoli GB, Cederholm T, Avesani CM, Bakker SJL, Bellizzi V, Cuerda C, *et al*. Nutritional status and the risk of malnutrition in older adults with chronic kidney disease – implications for low protein intake and nutritional care: a critical review endorsed by ERN-ERA and ESPEN. *Clinical Nutrition*. 2023;42:443-457.
98. Kurniawan MRA, Riviati N, Prananjaya BA, Reagan M, Aini S. Sarcopenia in elderly patients: what are the contributing risk factors?. *Jurnal Kedokteran dan Kesehatan : Publikasi Ilmiah Fakultas Kedokteran Universitas Sriwijaya*. 2024;11:157-166.
99. Hapsari NA. Hubungan tingkat aktivitas fisik dengan sarkopenia pada penyandang diabetes mellitus tipe 2. *R Medicine. UPH Karawaci*. 2022:iv-v
100. Ko YC, Chie WC, Wu TY, Ho CY, Yu WR. A cross-sectional study about the relationship between physical activity and sarcopenia in Taiwanese older adults. *Nature portofolio : Scientific Reports*. 2021;11:11488.
101. Shen X, Zhao X. Association between changes in physical activity and sarcopenia risk in middle-aged and older adults. *Journal of Exercise Science & Fitness*. 2025;23:190-196.
102. Amorim GJ, Calado CKM, Oliveira BCS, Araujo RPO, Filgueira TO, Fernandes MSS, *et al*. Sarcopenia in non-dialysis chronic kidney disease patients: prevalence and associated factors. *Frontiers in Medicine*. 2022:1-10.
103. Sumandar S, Ekaputri M, Ramadia A. Sarcopenia : the prevalence and associated factors in community-dwelling elderly. *Media Kesehatan Masyarakat Indonesia*. 2023;19(2):50-60.
104. Aryana IGPS. Sarkopenia pada lansia : problem diagnosis dan tatalaksana. *Denpasar : Panuduh Atma Waras*. 2021:1-110.
105. Gamayanti KAV, Aryana IGPS, Gotera W. hubungan antara kekuatan genggam tangan dengan kadar gula darah sewaktu pada lansia di Desa

- Melinggih, Kecamatan Payangan, Kabupaten Gianyar. *Intisari Sains Medis*. 2023;14(2):483-488.
106. Bing W, Bin LY, Jin CZ, Yuan W, Ying SW, Xiang G, *et al*. Associations of sarcopenia, handgrip strength and calf circumference with cognitive impairment among Chinese older adults. *Biomed Environ Sci*. 2021;34(11):859-870.
 107. Abbas K, Hassan Z, Abid I, Gillani SM, Jan A, Jabbar B. Assessment of sarcopenia and its association with handgrip strength in elderly population. *Insights-JHR*. 2024:1-6.
 108. Qamar HFM, Riaz MM, Basit MB, Rizvi N, Ahmed A, Asif M, *et al*. Sarcopenia in CKD V pre-dialysis patients using handgrip strength. *JPTCP*. 2024;31(9):4145-4151.
 109. Madina UU, Setiati S, Laksmi PW, Mansjoer A. Predictors of handgrip strength changes in elderly patients. *Jurnal Penyakit Dalam Indonesia*. 2021;8(3):112-118.
 110. Rakhima F, Bandiara R, Supriyadi R, Dwipa L. Prevalence and factors associated with sarcopenia in chronic kidney disease patients undergoing dialysis: a single center, cross sectional study. *InaKidney*. 2025;2(1):19-27.
 111. Caniago MR, Ngestiningsih D, Fulyani F. Hubungan antara kadar vitamin D dengan kekuatan genggam tangan lansia. *Jurnal Kedokteran Diponegoro*. 2019;8(1):300-312.
 112. Adyanita VA, Widajanti N, Wibisono S. Comparison of the 25(OH)D levels between sarcopenia and frailty in elder women: a cross-sectional observation analytic study in elderly community in Surabaya. *Sys Rev Phram*. 2020;11(4):359-364.
 113. Amalya N, Udaya W, Sudarso A, Bakri S, Rasyid H, Kasim H, *et al*. Vitamin D serum level in elderly: its association with the incidence and degree of sarcopenia. *SCIREA Journal of Clinical Medicine*. 2022;7(4):232-240.
 114. Dwimartutie N, Setiati S, Tamin TZ, Prijanti AR, Harahap AR, Purnamasari D, *et al*. Vitamin D levels in pre-frail older adults and its correlation with handgrip strength. *Acta Med Indones – Indones J Intern Med*. 2023;55(2):172-179.

115. Oliveira D, Souza VA, Souza GC, Suassuna LF, Bastos MG, Reboredo MM, *et al.* Sarcopenic obesity in predialysis chronic kidney disease: muscle strength is a predictor of mortality and disease progression in a six-year prospective cohort. *PLOS ONE*. 2025;1-14.
116. Mattera M, Veronese N, Aucella F, Tegola LL, Testini V, Guio FD, *et al.* Prevalence and risk factors for sarcopenia in chronic kidney disease patients undergoing dialysis: a cross-sectional study. *Turk J Nephrol*. 2021;30(4):294-299.
117. Zhang F, Li W. Vitamin D and sarcopenia in the senior people: a review of mechanism and comprehensive prevention and treatment strategies. *Therapeutics and Clinical Risk Management*. 2024;20:577-595.
118. Louka M. Sarcopenia in CKD: the effect of CKD on muscle mass. *Journal of Research and Practice on the Musculoskeletal System*. 2022;6(4):106-110.
119. Luo S, Chen X, Hou L, Yue J, Liu X, Wang Y, *et al.* The relationship between sarcopenia and vitamin D levels in adults of different ethnicities: findings from the West China health and aging trend study. *J Nutr Health Aging*. 2021;25(7):909-913.
120. Mizuno T, Hosoyama T, Tomida M, Yamamoto Y, Nakamichi Y, Kato S, *et al.* Influence of vitamin D on sarcopenia pathophysiology: a longitudinal study in humans and basic research in knockout mice. *Journal of Cachexia, Sarcopenia and Muscle*. 2022;13:2961-2973.
121. Yang C, Dai Y, Li Z, Peng Y, Zhang L, Jia H. Relationship of serum 25-hydroxyvitamin D levels with sarcopenia and body composition in community-dwelling older adults: a paired case-control study. *J Am Med Dir Assoc*. 2023;24(8):1213-1219.
122. Moon SJ, Kim TH, Yoon SY, Chung JH, Hwang HJ. Relationship between stage of chronic kidney disease and sarcopenia in Korean ages 40 years and older using the Korean National Health and Nutrition Examination Surveys (KNHANES IV-2,3, and V-1,2), 2008-2011. *PLOS ONE*. 2015;1-11.
123. Mohamed MG, Okda HI, Hodeib HA, Gabr MT. Vitamin D level in predialysis chronic kidney disease patients stage 3 to 5 and predictors of its deficiency. *JAMMR*. 2021;33(18):64-72.

124. Tsai CC, Wang PC, Hsiung T, Fan YH, Wu JT, Kan WC, *et al.* Sarcopenia in chronic kidney disease: a narrative review from pathophysiology to therapeutic approaches. *Biomedicines*. 2025;13:1-18.
125. Santos ARS, Amaral TF. Differences in handgrip strength protocols to identify sarcopenia and frailty – a systemic review. *BMC Geriatrics*. 2017;17:238.
126. Mienche, Setiati S, Setyohadi B, Kurniawan J, Laksmi PW, Ariane A, *et al.* Diagnostic performance of calf circumference, thigh circumference, and SARC-F questionnaire to identify sarcopenia in elderly compared to Asian Working Group for Sarcopenia's diagnostic standard. *Acta Med Indones – Indones J Intern Med*. 2019;51(2):117-127.
127. Tsekoura M, Billis E, Matzaroglou C, Tsepis E, Gliatis J. Prevalence of probable sarcopenia in community-dwelling older Greek people. *JFSF*. 2021;6(4):204-208.
128. Soares LA, Lima LP, Prates CAN, Arrieiro AN, Teixeira LADC, Duarte TC, *et al.* Accuracy of handgrip and respiratory muscle strength in identifying sarcopenia in older, community-dwelling, Brazilian women. *Nature Portfolio*. 2023;13:1553.
129. Nguyen NTT, Nguyen TX, Nguyen AT, Nguyen TTH, Nguyen TN, Nguyen HTT, *et al.* A description of handgrip strength in the very older adult people living in rural Vietnam and its association with daily functions. *BioMed Research International*. 2021:1-6.
130. Amaral CA, Amaral TLM, Monteiro GTR, Vasconcellos MTL, Portela MC. Hand grip strength: reference values for adults and elderly people of Rio Branco, Acre, Brazil. *PLOS ONE*. 2019:1-13.
131. Ibrahim AA, Hakami HA, Abdelbasset WK. Impact of chronic kidney disease on handgrip strength: a cross-sectional study in Ha'il, Saudi Arabia. *JPRI*. 2022;34(21A):1-5.
132. Abdelnabil AM, Esmayel EM, Nasr-Eldin AHA, AbdelAal AA. Assessment of upper muscle function in elderly patients with chronic kidney disease. *ZUMJ*. 2021;30(2):343-349.
133. Pojednic RM, Ceglia L., Olsson K., Gustafsson T, Lichtenstein AH, Hughes BD *et al.* Effects of 1000 IU vitamin D supplementation on physical function

in vitamin D deficient older adults. *Medicine & Science in Sports & Exercise*. 2015;47(12):2456-2464.

134. Remelli F, Vitali A, Zurlo A, Volpato S. Vitamin D deficiency and sarcopenia in older persons. *Nutrients*. 2019;12(1):103.
135. Germantaite A, Celis-Morales CA, Ho F, Pell JP, Ratkevicius A, Gray SR. Associations between diet and handgrip strength: a cross-sectional study from UK Biobank. *Mechanism of Ageing and Development*. 2020;189:111269.
136. Chen L, Wang Y, Zhang M, Li J, Wu X. Optimal dose of resistance training to improve handgrip strength in older adults with sarcopenia: a systemic review and Bayesian model-based network meta-analysis. *Frontiers in Physiology*. 2025;16:1564988.

