

Objectivity in the upper limb – does it matter?

Reference list

Benfica PDA, Aguiar LT, Brito SAF, Bernardino LHN, Teixeira-Salmela LF, Faria CDCM. Reference values for muscle strength: a systematic review with a descriptive meta-analysis. *Braz J Phys Ther*. 2018 Sep-Oct;22(5):355-369. [doi:10.1016/j.bjpt.2018.02.006](https://doi.org/10.1016/j.bjpt.2018.02.006)

Borms D, Maenhout A, Cools AM. Upper Quadrant Field Tests and Isokinetic Upper Limb Strength in Overhead Athletes. *J Athl Train*. 2016 Oct;51(10):789-796 [doi:10.4085/1062-6050-51.12.06](https://doi.org/10.4085/1062-6050-51.12.06)

Chamorro C, Arancibia M, Trigo B, Arias-Poblete L, Jerez-Mayorga D. Absolute Reliability and Concurrent Validity of Hand-Held Dynamometry in Shoulder Rotator Strength Assessment: Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2021 Sep 3;18(17):9293 <https://doi.org/10.3390/ijerph18179293>

Cooke N, Obst S, Vicenzino B, Hodges PW, Heales LJ. Upper limb position affects pain-free grip strength in individuals with lateral elbow tendinopathy. *Physiother Res Int*. 2021 Jul;26(3):e1906 [doi:10.1002/pri.1906](https://doi.org/10.1002/pri.1906)

Dorich JM, Cornwall R. Evaluation of a Grip-Strengthening Algorithm for the Initial Treatment of Chronic, Nonspecific Wrist Pain in Adolescents. *J Hand Surg Glob Online*. 2021 Oct 22;4(1):8-13 [doi:10.1016/j.jhsg.2021.09.001](https://doi.org/10.1016/j.jhsg.2021.09.001)

Fernández-de-Las-Peñas C, Ortega-Santiago R, Ambite-Quesada S, Jiménez-García A R, Arroyo-Morales M, Cleland JA. Specific mechanical pain hypersensitivity over peripheral nerve trunks in women with either unilateral epicondylalgia or carpal tunnel syndrome. *J Orthop Sports Phys Ther*. 2010 Nov;40(11):751-60 [doi:10.2519/jospt.2010.3331](https://doi.org/10.2519/jospt.2010.3331)

Gatt IT, Allen T, Wheat J. Effects of using rigid tape with bandaging techniques on wrist joint motion during boxing shots in elite male athletes. *Phys Ther Sport*. 2023 May;61:82-90 [doi:10.1016/j.ptsp.2023.03.002](https://doi.org/10.1016/j.ptsp.2023.03.002)

Gatt I, Allen T, Wheat J. Quantifying wrist angular excursion on impact for Jab and Hook lead arm shots in boxing. *Sports Biomech*. 2021 Dec 6:1-13 [doi:10.1080/14763141.2021.2006296](https://doi.org/10.1080/14763141.2021.2006296)

Gatt I, Smith-Moore S, Steggles C, Loosemore M. The Takei Handheld Dynamometer: An Effective Clinical Outcome Measure Tool for Hand and Wrist Function in Boxing. *Hand (NY)*. 2018 May;13(3):319-324 [doi: 10.1177/1558944717707831](https://doi.org/10.1177/1558944717707831)

Georgopoulos V, Akin-Akinyosoye K, Zhang W, McWilliams DF, Hendrick P, Walsh DA. Quantitative sensory testing and predicting outcomes for musculoskeletal pain, disability, and negative affect: a systematic review and meta-analysis. *Pain*. 2019 Sep;160(9):1920-1932 [doi:10.1097/j.pain.0000000000001590](https://doi.org/10.1097/j.pain.0000000000001590)

Horsley I, Herrington L, Hoyle R, Prescott E, Bellamy N. Do changes in hand grip strength correlate with shoulder rotator cuff function? *Shoulder Elbow*. 2016 Apr;8(2):124-9 [doi:10.1177/1758573215626103](https://doi.org/10.1177/1758573215626103)

Keller RA, De Giacomo AF, Neumann JA, Limpisvasti O, Tibone JE. Glenohumeral Internal Rotation Deficit and Risk of Upper Extremity Injury in Overhead Athletes: A Meta-Analysis and Systematic Review. *Sports Health*. 2018 Mar/Apr;10(2):125-132 [doi:10.1177/1941738118756577](https://doi.org/10.1177/1941738118756577)

Królikowska A, Mika A, Plaskota B, Daszkiewicz M, Kentel M, Kołcz A, Kentel M, Prill R, Diakowska D, Reichert P, Stolarczyk A, Oleksy Ł. Reliability and Validity of the Athletic Shoulder (ASH) Test Performed Using Portable Isometric-Based Strength Training Device. *Biology (Basel)*. 2022 Apr 11;11(4):577 [doi:10.3390/biology11040577](https://doi.org/10.3390/biology11040577)

Kuru CA, Uysal O, Karaca NB, Akar Z, Ayhan E, Kuru I. Responsiveness and Validity of Weight-Bearing Test for Measuring Loading Capacity in Patients With Triangular Fibrocartilage Complex Injury. *J Sport Rehabil*. 2022 Apr 23;31(7):876-884 [doi:10.1123/jsr.2021-0386](https://doi.org/10.1123/jsr.2021-0386)

Lubis AM, Wisnubaroto RP, Ilyas EI, Ifran NN. Glenohumeral internal rotation deficit in non-pitcher overhead athletic athletes: case series analysis of ten athletes. *Ann Med Surg (Lond)*. 2020 Sep 8;58:138-142 [doi:10.1016/j.amsu.2020.08.050](https://doi.org/10.1016/j.amsu.2020.08.050)

Ohuchi K, Kijima H, Saito H, Sugimura Y, Yoshikawa T, Miyakoshi N. Risk Factors for Glenohumeral Internal Rotation Deficit in Adolescent Athletes: A Comparison of Overhead Sports and Non-overhead Sports. *Cureus*. 2023 Jan 21;15(1):e34045 [doi:10.7759/cureus.34045](https://doi.org/10.7759/cureus.34045)

Parry GN, Herrington LC, Horsley IG, Gatt I. The Test-Retest Reliability of Bilateral and Unilateral Force Plate-Derived Parameters of the Countermovement Push-Up in Elite Boxers. *J Sport Rehabil*. 2021 Feb 24;30(7):1106-1110 [doi:10.1123/jsr.2020-0340](https://doi.org/10.1123/jsr.2020-0340)

Shigetoh H, Koga M, Tanaka Y, Morioka S. Central Sensitivity Is Associated with Poor Recovery of Pain: Prediction, Cluster, and Decision Tree Analyses. *Pain Res Manag*. 2020 Oct 30;2020:8844219 [doi:10.1155/2020/8844219](https://doi.org/10.1155/2020/8844219)

Van Harlinger W, Blalock L, Merritt JL. Upper limb strength: study providing normative data for a clinical handheld dynamometer. *PM R*. 2015 Feb;7(2):135-40 [doi:10.1016/j.pmrj.2014.09.007](https://doi.org/10.1016/j.pmrj.2014.09.007)

Vascellari A, Ramponi C, Venturin D, Ben G, Coletti N. The Relationship between Kinesiophobia and Return to Sport after Shoulder Surgery for Recurrent Anterior Instability. *Joints*. 2021 Jun 18;7(4):148-154 [doi:10.1055/s-0041-1730975](https://doi.org/10.1055/s-0041-1730975)

Wang YC, Bohannon RW, Li X, Sindhu B, Kapellusch J. Hand-Grip Strength: Normative Reference Values and Equations for Individuals 18 to 85 Years of Age Residing in the United States. *J Orthop Sports Phys Ther*. 2018 Sep;48(9):685-693 [doi:10.2519/jospt.2018.7851](https://doi.org/10.2519/jospt.2018.7851)