

Smartphone accelerometry and balance assessment in dancers: Future applications
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References

- Armstrong, R., Brogden, C. M., Milner, D., Norris, D., & Greig, M. (2018). Functional Movement Screening as a Predictor of Mechanical Loading and Performance in Dancers. *J Dance Med Sci*, 22(4), 203-208. doi:10.12678/1089-313X.22.4.203
- Armstrong, R., & Relph, N. (2018). Screening Tools as a Predictor of Injury in Dance: Systematic Literature Review and Meta-analysis. *Sports Med Open*, 4(1), 33. doi:10.1186/s40798-018-0146-z
- Clarke, F., Koutedakis, Y., Wilson, M., & Wyon, M. (2018). Balance in Theatrical Dance Performance A Systematic Review. *Medical Problems of Performing Artists*, 33(4), 275-+. doi:10.21091/mppa.2018.4041
- Clarke, F., Koutedakis, Y., Wilson, M., & Wyon, M. (2019). Associations Between Balance Ability and Dance Performance Using Field Balance Tests. *Med Probl Perform Art*, 34(3), 154-160. doi:10.21091/mppa.2019.3026
- Dubois, A., Mounthou, A., Sivagnanaselvam, R. S., & Bresciani, J. P. (2019). Fast and automatic assessment of fall risk by coupling machine learning algorithms with a depth camera to monitor simple balance tasks. *J Neuroeng Rehabil*, 16(1), 71. doi:10.1186/s12984-019-0532-x
- Jansen, S. D., Amick, R. Z., Stern, D. C., Chaparro, A., & Patterson, J. A. (2014). Comparison Of The Sway Balance Mobile Application To The BESS Balance Assessment In Older Adults. *Medicine and Science in Sports and Exercise*, 46(5), 691-691. doi:DOI 10.1249/01.mss.0000495548.01015.d0
- Jones, P., Woodgate, S., Doheny, E., Biggs, P., Williams, D., & Holt, C. (2019). Do changes in feature selection parameters influence the classification of knee rehabilitation exercises when using body work accelerometer data? *Osteoarthritis and Cartilage*, 27(S1), S400.
- Leiros-Rodriguez, R., Garcia-Soidan, J. L., & Romo-Perez, V. (2019). Analyzing the Use of Accelerometers as a Method of Early Diagnosis of Alterations in Balance in Elderly People: A Systematic Review. *Sensors (Basel)*, 19(18). doi:10.3390/s19183883
- McGuine, T. A., Greene, J. J., Best, T., & Leverson, G. (2000). Balance as a predictor of ankle injuries in high school basketball players. *Clin J Sport Med*, 10(4), 239-244.
- Moral-Munoz, J. A., Esteban-Moreno, B., Herrera-Viedma, E., Cobo, M. J., & Perez, I. J. (2018). Smartphone Applications to Perform Body Balance Assessment: a Standardized Review. *Journal of Medical Systems*, 42(7). doi:ARTN 119 10.1007/s10916-018-0970-1

- O'Loughlin, P. F., Hodgkins, C. W., & Kennedy, J. G. (2008). Ankle sprains and instability in dancers. *Clin Sports Med*, 27(2), 247-262.
doi:10.1016/j.csm.2007.12.006
- Saripalle, S. K., Paiva, G. C., Cliett, T. C., 3rd, Derakhshani, R. R., King, G. W., & Lovelace, C. T. (2014). Classification of body movements based on posturographic data. *Hum Mov Sci*, 33, 238-250.
doi:10.1016/j.humov.2013.09.004
- Saunders, N. W., Koutakis, P., Kloos, A. D., Kegelmeyer, D. A., Dicke, J. D., & Devor, S. T. (2015). Reliability and validity of a wireless accelerometer for the assessment of postural sway. *J Appl Biomech*, 31(3), 159-163.
doi:10.1123/jab.2014-0232
- Whitney, S. L., Roche, J. L., Marchetti, G. F., Lin, C. C., Steed, D. P., Furman, G. R., . . . Redfern, M. S. (2011). A comparison of accelerometry and center of pressure measures during computerized dynamic posturography: a measure of balance. *Gait Posture*, 33(4), 594-599. doi:10.1016/j.gaitpost.2011.01.015
- Willems, T., Witvrouw, E., Verstuyft, J., Vaes, P., & De Clercq, D. (2002). Proprioception and Muscle Strength in Subjects With a History of Ankle Sprains and Chronic Instability. *J Athl Train*, 37(4), 487-493.
- Yu, E., Abe, M., Masani, K., Kawashima, N., Eto, F., Haga, N., & Nakazawa, K. (2008). Evaluation of postural control in quiet standing using center of mass acceleration: comparison among the young, the elderly, and people with stroke. *Arch Phys Med Rehabil*, 89(6), 1133-1139. doi:10.1016/j.apmr.2007.10.047