



The Dual-Task Condition: Sources

Megan Christiansen, SPT

Dietra Buxton, PT, DPT

Division of Physical Therapy, UNC-Chapel Hill

Journals

1. Beauchet O, Dubost V, Aminian K, Gonthier R, Kressig RW (2005). Dual-task-related gait changes in the elderly: does the type of cognitive task matter? *J Mot Behav*, 37, 259-64.
2. Beauchet O, Dubost V, Allali G, Gonthier R, Hermann FR, Kressig RW (2007). 'Faster counting while walking' as a predictor of falls in older adults. *Age and Ageing*, 36(4): 418-23.
3. Beauchet O, Annweiler C, Dubost V, Allali G, Kressig RW, Bridenbaugh S, Berrut G, Assal F, Herrmann FR (2009). Stops walking when talking: a predictor of falls in older adults? *Eur J Neurol*, [Epub ahead of print].
4. Beauchet O, Allali G, Poujol L, Barthelemy JC, Roche F, Annweiler C (2010). Decrease in gait variability while counting backward: a marker of "magnet effect"? *J Neural Transm*; 117(10):1171-6.
5. Bensoussan L, Viton JM, Schieppati M, Collado H, Milhe de Bovis V, Mesure S, Delarque A (2007). Changes in postural control in hemiplegic patients after stroke performing a dual task. *Arch Phys Med Rehabil*, 88, 1009-15.
6. Brandler TC, Oh-Park M, Wang C, Holtzer R, Verghese J (2012). "Walking while talking: investigation of alternate forms." *Gait and Posture*, 35(1): 164-166.
7. Coppin AK, Shumway-Cook A, Saczynski JS, Patel KV, Ble A, Ferrucci L, Guralnik JM (2006). Association of executive function and performance of dual-task physical tests among older adults: analyses from the InChianti study. *Age & Ageing*, 35, 619-24.
8. de Bruin ED, Schmidt A. Walking behaviour of healthy elderly: attention should be paid. *Behav Brain Funct*. 2010 Oct 12;6:59.
9. de Hoon EW, Allum JH, Carpenter MG, Salis C, Bloem BR, Conzelmann M, Bischoff HA (2003). Quantitative assessment of the stops walking while talking test in the elderly. *Arch Phys Med Rehabil*, 84(6): 838-42.
10. Gentile, AM (2000). Skill acquisition: Action, movement, and neuromotor processes. In JH Carr & RB Shepherd (Eds.), *Movement Science: Foundations for Physical Therapy in Rehabilitation*, 2nd ed. (pp. 111-187). Gaithersburg, MD: Aspen.

11. Hausdorff JM, Schweiger A, Herman T, Yogev-Seligmann G, Giladi N (2008). Dual-task decrements in gait: contributing factors among healthy older adults. *J Gerontol A Biol Sci Med Sci*, 63, 1335-43.
12. Hawkes TD, Siu KC, Silsupadol P, Woollacott MH. Why does older adults' balance become less stable when walking and performing a secondary task? Examination of attentional switching abilities. *Gait Posture*. 2012 Jan;35(1):159-63.
13. Hiyamizu M, Morioka S, Shomoto K, Shimada T. Effects of dual task balance training on dual task performance in elderly people: a randomized controlled trial. *Clin Rehabil*. 2012 Jan;26(1):58-67.
14. Hofheinz M, Schusterschitz C. (2010). "Dual task interference in estimating the risk of falls and measuring change: a comparative, psychometric study of four measurements." *Clin Rehabil* 24(9): 831-842.
15. Holtzer R, Wang C, Verghese J. The relationship between attention and gait in aging: facts and fallacies. *Motor Control*. 2012 Jan;16(1):64-80.
16. Hyndman D, Ashburn A, Yardley L, Stack E (2006). Interference between balance, gait and cognitive task performance among people with stroke living in the community. *Disabil Rehabil*, 28, 849-56.
17. Kressig RW, Allali G, Beauchet O. Long-term practice of Jaques-Dalcroze eurhythmics prevents age-related increase of gait variability under a dual task. *J Am Geriatr Soc*. 2005 Apr;53(4):728-9.
18. Li KZ, Roudaia E, Lussier M, Bherer L, Leroux A, McKinley PA. Benefits of cognitive dual-task training on balance performance in healthy older adults. *J Gerontol A Biol Sci Med Sci*. 2010 Dec;65(12):1344-52.
19. Lundin-Olsson L, Nyberg L, Gustafson Y (1997). "Stops walking when talking" as a predictor of falls in elderly people. *Lancet*, 349(9052): 617.
20. McCulloch KL, Mercer VS, Giuliani CA, Marshall S (2009). Development of a clinical measure of dual-task performance in walking: Reliability and preliminary validity of the Walking and Remembering Test. *J Ger Phys Ther* 32, 2-9.
21. Montero-Odasso M, Verghese J, Beauchet O, Hausdorff JM. Gait and cognition: a complementary approach to understanding brain function and the risk of falling. *J Am Geriatr Soc*. 2012 Nov;60(11):2127-36.
22. O'Sullivan S. & Schmitz T. *Physical Rehabilitation*. 5th ed. 2007. F.A. Davis Company. Philadelphia, PA.

23. Plummer-D'Amato P, Cohen Z, Dae NA, Lawson SE, Lizotte MR, Padilla A. Effects of once weekly dual-task training in older adults: A pilot randomized controlled trial. *Geriatr Gerontol Int.* 2012 Oct;12(4):622-9.
24. Schwenk M, Zieschang T, Oster P, Hauer K. Dual-task performances can be improved in patients with dementia: a randomized controlled trial. *Neurology.* 2010 Jun 15;74(24):1961-8.
25. Shumway-Cook A, Brauer S, Woollacott M (2000). Predicting the probability for falls in community-dwelling older adults using the Timed Up & Go Test. *Phys Ther*, 80(9): 896-903.
26. Silsupadol P, Siu KC, Shumway-Cook A, Woollacott MH (2006). Training of balance under single- and dual-task conditions in older adults with balance impairment. *Phys Ther*, 86, 269-81.
27. Silsupadol P, Shumway-Cook A, Lugade V, van Donkelaar P, Chou LS, Mayr U, Woollacott MH (2009a). Effects of single-task versus dual-task training on balance performance in older adults: a double-blind, randomized controlled trial. *Arch Phys Med Rehabil.* 2009 Mar;90(3):381-7.
28. Silsupadol P, Lugade V, Shumway-Cook A, van Donkelaar P, Chou LS, Mayr U, Woollacott MH (2009b). Training-related changes in dual-task walking performance of elderly persons with balance impairment: a double-blind, randomized controlled trial. *Gait Posture.* 2009 Jun;29(4):634-9.
29. Trombetti A, Hars M, Herrmann FR, Kressig RW, Ferrari S, Rizzoli R. Effect of music-based multitask training on gait, balance, and fall risk in elderly people: a randomized controlled trial. *Arch Intern Med.* 2011 Mar 28;171(6):525-33.
30. Tsang WW, Hui-Chan CW, Fu SN. Effects of Tai Chi on pre-landing muscle response latency during stepping down while performing a concurrent mental task in older adults. *Eur J Appl Physiol.* 2012 Jul;112(7):2663-9.
31. Uemura K, Yamada M, Nagai K, Tateuchi H, Mori S, Tanaka B, Ichihashi N. Effects of dual-task switch exercise on gait and gait initiation performance in older adults: preliminary results of a randomized controlled trial. *Arch Gerontol Geriatr.* 2012 Mar-Apr;54(2):e167-71.
32. Unsworth, C. *Cognitive and Perceptual Dysfunction: A Clinical Reasoning Approach to Evaluation and Intervention.* FA Davis, Philadelphia, 1999.

33. van Iersel MB, Kessels RP, Bloem BR, Verbeek AL, Olde Rikkert MG. Executive functions are associated with gait and balance in community-living elderly people. *J Gerontol A Biol Sci Med Sci.* 2008 Dec;63(12):1344-9.
34. Verghese J, Buschke H, Viola L, Katz M, Hall C, Kuslansky G, Lipton R (2002). Validity of divided attention tasks in predicting falls in older individuals: a preliminary study. *J Am Geriatr Soc*, 50(9): 1572-6.
35. Verghese J, Kuslansky G, Holtzer R, Katz M, Xue X, Buschke H, Pahor M (2007). Walking while talking: effect of task prioritization in the elderly. *Arch Phys Med Rehabil*, 88, 50-3.
36. Yamada M, Aoyama T, Arai H, Nagai K, Tanaka B, Uemura K, Mori S, Ichihashi N. Complex obstacle negotiation exercise can prevent falls in community-dwelling elderly Japanese aged 75 years and older. *Geriatr Gerontol Int.* 2012 Jul;12(3):461-7.
37. Yang YR, Wang RY, Chen YC, Kao MJ (2007). Dual-task exercise improves walking ability in chronic stroke: a randomized controlled trial. *Arch Phys Med Rehabil*, 88, 1236-40.
38. Zijlstra A, Ufkes T, Skelton DA, Lundin-Olsson L, Zijlstra W (2008). Do dual tasks have an added value over single tasks for balance assessment in fall prevention programs? A mini-review. *Gerontology*, 54, 40-9.

Other

Alzheimer's Disease Neuroimaging Initiative. Cognitive Testing: Digit Span Forward. PDF. <http://adni.loni.ucla.edu/wp-content/uploads/2010/09/BLCogTestingWorksheet>. PDF. Accessed March 6, 2013

Centers for Disease Control and Prevention. Falls Among Older Adults: An Overview. <http://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html>. Page Revised September 20, 2012. Accessed March 7, 2013.

National Council on Aging. Center for Healthy Aging. <http://www.ncoa.org/improve-health/center-for-healthy-aging/falls-prevention/>. Accessed March 7, 2013.

U.S. Department of Commerce. State & County QuickFacts. <http://quickfacts.census.gov/qfd/states/ooooo.html>. United States Census Bureau. Accessed March 7, 2013.