



## Association between dual task-related decrease in walking speed and real versus imagined Timed Up and Go test performance

Submitted by Emmanuel Lemoine on Wed, 04/22/2015 - 16:45

Titre	Association between dual task-related decrease in walking speed and real versus imagined Timed Up and Go test performance
Type de publication	Article de revue
Auteur	Bridenbaugh, S.A. [1], Beauchet, Olivier [2], Annweiler, Cédric [3], Allali, Gilles [4], Herrmann, F. [5], Kressig, R. W [6]
Type	Article scientifique dans une revue à comité de lecture
Année	2013
Langue	Anglais
Date	2013/06/07
Numéro	3
Pagination	283-9
Volume	25
Titre de la revue	Aging Clinical and Experimental Research
ISSN	1594-0667

**BACKGROUND AND AIMS:** To examine whether older people with markedly dual task-related decreases in walking speed - a marker of disturbed higher-level gait control and falls - have a larger discrepancy between real and imagined Timed Up and Go (TUG) test times than those with less dual task-related decreases in walking speed.

**METHODS:** Based on a prospective cross-sectional study, 193 older adults (mean age 77.4 +/- 5.9 years; 44.0 % women) referred to and consecutively assessed at a Swiss university clinic for a gait analysis to assess either gait disorders, fall risk or memory disorders were included. For all participants, walking speed was measured using a GAITRite((R)) electronic walkway system during usual walking at self-selected pace and while dual tasking (i.e., usual walking and simultaneously counting backwards out loud). In addition, real Timed Up and Go (TUGr) and imagined Timed Up and Go (TUGi) (i.e., the time needed to imagine performing the TUGr) times were measured with a stopwatch. Differences between both walking conditions for walking speed (delta of walking speed) and both TUG conditions (delta of TUG time) were calculated. Age, gender, height, total number drugs taken per day, daily use of psychoactive drugs, use of walking aid, history of falls, Mini-Mental State Examination score, near vision and education level were used as covariables in this analysis.

**RESULTS:** Participants were categorized into two groups based on being in the lowest tertian (i.e., <33 %: group A corresponding to participants undisturbed by dual task) or not (i.e., >=33 %: group B corresponding to participants disturbed by dual task) of the delta of walking speed. In both groups, TUGr and TUGi times were similar (P = .169 and P = .839). In both groups, TUGi was faster than TUGr (P < .001). Delta of TUG time was significantly greater in group B compared to group A (P < .001). After adjustment for all covariables, only the delta of walking speed was significantly associated with the delta of TUG time (P = <.001). Stepwise backward regression showed that polypharmacy (P = .017) and delta of walking speed (P = <.001) were associated with an increase in delta of TUG time, whereas an increased MMSE score (P = .030) was associated with a decrease in delta of TUG time.

**CONCLUSION:** These findings show that a large discrepancy between real and imagined TUG performances is significantly correlated with a decrease in walking speed while dual tasking, and thus may also be a surrogate marker of disturbed higher-level gait control. The quickly and easily performed TUG tests may represent a feasible, practical screening tool for early detection of higher-level gait disorders in older adults.

Résumé en anglais

URL de la notice <http://okina.univ-angers.fr/publications/ua10028> [7]

DOI [10.1007/s40520-013-0046-5](http://dx.doi.org/10.1007/s40520-013-0046-5) [8]

Titre abrégé Aging clinical and experimental research

---

## Liens

[1] [http://okina.univ-angers.fr/publications?f\[author\]=17628](http://okina.univ-angers.fr/publications?f[author]=17628)

[2] <http://okina.univ-angers.fr/o.beauchet/publications>

[3] <http://okina.univ-angers.fr/cedric.annweiler/publications>

[4] [http://okina.univ-angers.fr/publications?f\[author\]=17652](http://okina.univ-angers.fr/publications?f[author]=17652)

[5] [http://okina.univ-angers.fr/publications?f\[author\]=17699](http://okina.univ-angers.fr/publications?f[author]=17699)

[6] [http://okina.univ-angers.fr/publications?f\[author\]=17700](http://okina.univ-angers.fr/publications?f[author]=17700)

[7] <http://okina.univ-angers.fr/publications/ua10028>

[8] <http://dx.doi.org/10.1007/s40520-013-0046-5>

Publié sur *Okina* (<http://okina.univ-angers.fr>)