

2013

## Estimation of dietary flavonoid intake and cognitive performance in older adults with Alzheimer's type dementia

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### Recommended Citation

Caldwell, Katherine; Charlton, Karen E.; and Roodenrys, Steven J., "Estimation of dietary flavonoid intake and cognitive performance in older adults with Alzheimer's type dementia" (2013). *Faculty of Social Sciences - Papers*. 581.  
<https://ro.uow.edu.au/sspapers/581>

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### Abstract

Abstract presented at The Nutrition Society of Australia and Nutrition Society of New Zealand 2013 Joint Annual Scientific Meeting, 4-6 December 2013, Brisbane, Australia

### Keywords

dietary, older, adults, alzheimer, flavonoid, type, estimation, dementia, performance, cognitive, intake

### Disciplines

Education | Social and Behavioral Sciences

### Publication Details

Caldwell, K., Charlton, K. E. & Roodenrys, S. J. (2013). Estimation of dietary flavonoid intake and cognitive performance in older adults with Alzheimer's type dementia. *Australasian Medical Journal*, 6 (11), 612.



## Concurrent Session 8: Dietary Assessment

### Estimation of dietary flavonoid intake and cognitive performance in older adults with Alzheimer's type dementia

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#### Background

Dietary flavonoid intake has been associated with improved cognitive performance and cognitive evolution with age. The total dietary intake and significant sources of dietary flavonoids in older Australians living with a neurodegenerative disease has not been assessed and may differ from current estimations for adults (65+yrs).

#### Objective

To estimate the total dietary intake and main sources of flavonoids in older Australians with Alzheimer's type dementia and to assess the relationship between dietary flavonoid intake and cognitive performance.

#### Design

Data from a 24-h diet recall in adults (65+yrs) with Alzheimer's type dementia (n=49) was cross-referenced with the **USDA database** for the flavonoid content of selected foods (release 3.1, 2013). A battery of cognitive assessments measured verbal learning and memory, working memory, semantic memory, short term memory and executive function. Bivariate correlations with Pearson and Spearman coefficients were performed and repeated after controlling for education.

#### Outcomes

Total flavonoid intake of 510mg/day (88% being flavon-3-ols) is lower than the Australian +65yrs estimation of 575mg/day. Black tea (80%) was the most significant dietary source of flavonoids followed by green tea (7.5%), red wine (4.5%), apples (1.7%) and oranges (1.6%) with their respective fruit juices. Total flavonoid intake and some cognitive outcomes were significantly correlated with the strongest relationship shown for tasks assessing semantic memory ( $r=0.319$   $p=0.025$ ), including correlations for the flavonoid subclasses flavonols ( $r=0.321$   $p=0.025$ ) and flavon-3-ols ( $r=0.323$   $p=0.023$ ). Participants who displayed greater depressive symptoms consumed less flavonoids ( $r=-0.328$   $p=0.021$ ). After controlling for education, the direction and magnitude of association between flavonoid intake and cognitive outcomes remained, however were no longer significant.

#### Conclusion

For older adults with Alzheimer's disease total flavonoid intake is lower than current Australian estimations but contributions of dietary sources are similar. The identified association between cognitive functioning, depression and flavonoid intake in adults with Alzheimer's disease warrants further research in a larger sample to identify whether dietary interventions may be indicated.

#### Source of funding

Illawarra Health and Medical Research Institute 2010 IHMRI dementia grant.