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**Otago Home-Based Strength and Balance Retraining Improves Executive Functioning in Older Fallers: A Randomized Controlled Trial**

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OBJECTIVES: To primarily ascertain the effect of the Otago Exercise Program (OEP) on physiological falls risk, functional mobility, and executive functioning after six months in older adults with a recent history of falls and to ascertain the effect of the OEP on falls during a one year follow-up period.

DESIGN: Randomized controlled trial.

SETTING: Dedicated falls clinics.

PARTICIPANTS: 74 adults aged 70 years and older who presented to a health care professional after a fall.

INTERVENTION: The OEP, a home-based program that consists of both resistance training and balance training exercises.

MEASUREMENTS: Physiological falls risk was assessed using the Physiological Profile Assessment. Functional mobility was assessed by the Timed Up and Go Test. We assessed three central executive functions: 1) set shifting by the Trail Making Test (Part B), 2) updating by the verbal digits backward test, and 3) response inhibition by the Stroop Color-Word Test. Falls were prospectively monitored by daily calendars.

RESULTS: At six-months, there was no significant between-group difference in physiological falls risk or functional mobility ($P > 0.36$). There was a significant between-group difference in response inhibition ($P = 0.05$). A falls histogram revealed two outliers. With these cases removed, using negative binomial regression, the unadjusted incidence rate ratio of falls in the OEP group, compared with the CON group was 0.56. The adjusted incidence rate ratio was 0.47.

CONCLUSION: Our data suggest that the OEP may reduce falls by improving cognitive performance.