(Addenbrooke's Cognitive Examination-III [ACE-III] 40.8±17.7 points), 28 community-dwelling PwD (ACE-III 52.8±18.5 points) and 26 healthy older people (ACE-III 88.7±5.4 points). Lung function (Peak Expiratory Flow [PEF]), respiratory muscle strength (Maximal Inspiratory/Expiratory [MIP/MEP] and sniff nasal inspiratory [SNIP] pressures) and UL functional ability (Grocery Shelving Task [GST] were recorded. Descriptive statistics was used to characterise the sample. Comparisons among groups were explored using a One-way ANOVA.

Results were significantly worse in institutionalised than in community-dwelling PwD, and the values from these two groups were significantly worse than those from the healthy older people group, i.e., lung function (PEF: 183.8±69.8 vs. 280.2±72.1 vs. 411.5±115.5 L/min; $p<0.001$), respiratory muscle strength (MIP: 28.5±11.6 vs. 46.5±11.4 vs. 88±26.9 cmH2O, $p<0.001$; MEP: 46.7±27.2 vs. 71±22.4 vs. 122.4±27.4 cmH2O, $p<0.001$; and SNIP: 31.2±12.1 vs. 45.7±18.4 vs. 74.1±21.1 cmH2O, $p<0.001$), and UL functional ability (GST: 130.7±52.6 vs. 90±50.4 vs. 38.5±12 seconds, $p<0.001$).

Conclusions: This study showed that respiratory function and UL functional ability, in PwD, declines with worse cognitive function and institutionalisation. Awareness for respiratory and UL routine assessment in PwD is needed to guide personalised and early interventions. Future studies with larger and representative samples are recommended.

PO2.12. Relationship between upper limb functional ability and respiratory function in people with dementia

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Background: People with dementia often experience lower respiratory tract infections. It is also known that people with dementia present decreased functionality, namely in upper limbs. These two facts lead to higher level of functional dependence and institutionalisation in people with dementia. It is likely that impaired upper limb functional ability affects respiratory function but this association in people with dementia is unknown.

Aim: To explore the relationship between upper limb functional ability, lung function and respiratory muscle strength in people with dementia.

Methods: An exploratory cross-sectional study was conducted. People with dementia were recruited in nursing homes, day care centres, long-term care facilities and in the community. Upper limb functional ability (Grocery Shelving Task [GST]), lung function (Peak Expiratory Flow [PEF]) and respiratory muscle strength (Maximal Inspiratory/Expiratory [MIP/MEP] and sniff nasal inspiratory [SNIP] pressures) were recorded. Descriptive statistics was used to characterise the sample. Correlations were explored with the Pearson's correlation coefficient.

Results: Fifty people with dementia [75.9±5.9 years old; 35 (70%) female; Body Mass Index=26.6±3.9 kg/m2] participated. GST was significantly: i) low and negatively correlated with SNIP ($r=-0.49$, $p=0.002$); and ii) moderate and negatively correlated with PEF ($r=-0.58$, $p<0.001$), MIP ($r=-0.54$, $p=0.001$) and MEP ($r=-0.57$, $p=0.001$).

Conclusions: Upper limb functional ability correlated significantly with lung function and respiratory muscle strength in people with dementia. Those with lower upper limb functional ability seem to present worst lung function and respiratory muscle strength. Thus, early detection and personalised interventions may prevent clinical and functional decline in this population. Further research on respiratory function and upper limb functional ability is needed to enhance knowledge on dementia management.

PO2.13. Lifestyle integrated Functional Exercise for people with Dementia - LiFE4D: Pilot study

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Background: People with dementia (PwD) want and are recommended to live at home. For this purpose, being physically active is vital. Nevertheless, home-based physical activity programmes for PwD are scarce. The Lifestyle Integrated Functional Exercise for People with Dementia (LiFE4D) might overcome this gap.

Objective: To explore the feasibility and effectiveness of LiFE4D on cognitive function and health-related physical fitness components in PwD.

Methods: A quasi-experimental pilot study was conducted with PwD living at home. The experimental group (EG) received 3-months of individualised home-based physical activity programme (LiFE4D), integrated in everyday tasks with the supervision of carers (when possible). Face-to-face sessions with the health professional were progressively reduced over time (1st month 3x/week, 2nd month 2x/week, 3rd month 1x/week). The control group (CG) continued with usual care (pharmacological treatment). Measures of cognitive function (Addenbrooke's Cognitive Examination-III [ACE-III]) and health-related physical fitness (Brief-Balance Evaluation System Test [Brief-BESTest], Handgrip, 30-Second Sit to Stand Test, 2Minute Step Test, Chair Sit-and-Reach Test [CSR], Functional Reach Test [FRT] and Timed Up and Go test [TUG]) were assessed. Comparisons between mean differences of each group were performed with Kruskal Wallis.

Results: Twelve PwD (8 ♀ (66.7%), 80.7±7.2yrs) were enrolled. Although not significant, improvements were observed in the EG when compared with the CG on ACE-III (4.5 [1.2; 13]; 3 [-7; 7.5] points, p=0.810), Brief-BESTest (5.5 [2.8; 6.8]; -2 [-4.5; 2.5] points, p=0.126), 30-Second Sit to Stand (2 [0.2; 4.5]; 0 [-1; 0.5] times, p=0.162), 2Minute Step Test (29.5 [18.8; 40.2]; -8 [-20; -1.5] times, p=0.054), CSR (2 [-5; 6]; -5 [-13; -3.5]cm, p=0.081), FRT (4 [2.2; 11]; 0.9 [-5.5; 13]cm, p=0.347) and TUG (-2.1 [-9.5; 13]; 0.5 [-4; 11.3] seconds, p=1). No adverse events were reported.

Conclusions: LiFE4D seems a promising intervention to delay the decline of cognitive function and health-related physical fitness in PwD living at home and warrants further investigation.

PO2.14. Home-based physical activity for people with dementia: A systematic review and meta-analysis

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Background: Home-based physical activity interventions for people with dementia (PwD) are important for this population to live at home. However, the evidence about these interventions is still scattered in the literature.

Objective: To identify and synthetize the effects of home-based physical activity interventions for PwD.

Methods: Electronic and hand search were conducted. Quality of studies was assessed using the Delphi-List. Effect sizes (ES) were calculated with MetaXL 2.0. A meta-analysis was conducted for Mini-Mental Status Examination (MMSE), Neuropsychiatric Inventory, Cornell Scale for Depression in Dementia, Alzheimer's Disease Cooperative Study Group Activities of Daily Living Scale (ADCS-ADL), Functional Reach test, Timed Up and Go test, Short Physical Performance Battery, Dementia Quality of Life, Neuropsychiatric Inventory caregivers and Zarit Burden Interview.

Results: Sixteen randomised controlled trials were included, with most being of high quality and published after 2015. Large heterogeneity of intervention length (2 months to 2 years), frequency (daily to 4-6 times bimonthly) and session duration (20-30 minutes to 12 hours) was found. Medium to large ES were found in cognitive function, changes in Behavioural and Psychological Symptoms of Dementia (BPSD), activities of daily living, health-related physical fitness, physical activity, falls, health-related quality of life and carer's burden. Significant results in Meta-analysis, favouring home-based physical activity intervention, were showed for MMSE (ES=0.71, 95%CI 0.43, 0.99), Neuropsychiatric Inventory (ES=-0.37, 95%CI -0.57, -0.17), ADCS-ADL (ES=0.80,