

# Measuring Physical and Cognitive Wellbeing in the Elderly: Assessing Impact

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At the NCSEM-EM world-leading experts are developing and implementing assessments of physical and cognitive wellbeing.

Measuring the impact of these interventions in the elderly is fundamental, not only to determine whether the intervention has improved physical, cognitive or social wellbeing, but also to capture the wider economic benefit when reporting to key stakeholders and commissioners.

Therefore we hosted an event to gather individuals involved in delivering and/or commissioning physical activity programmes for older adults. Around 40 attendees shared their experiences and expertise in discussions and helped to identify the breadth of needs within this field.

Attendees were involved in various initiatives including:

- Instructor-led exercise programmes for the elderly or those living with dementia (eg falls prevention)
- Community-based exercise initiatives (eg walking groups)
- Social interaction groups for the elderly (eg coffee mornings, dementia café, dementia holidays)

The aim of the event was to bring together key stakeholders to showcase methods to assess the effectiveness of exercise interventions and to identify barriers to implementation and any gaps in need.

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## Measurement demonstrations

Various outcome measures were demonstrated with attendees having the time to look at all the measures and discuss these with academics who have expertise using them. The measures were of three levels.

### Level one

The first level involved paper and pencil assessment. This can be easily implemented with minimal training. The examples given assessed overall cognitive functioning, verbal learning, motivation, resilience, wellbeing and physical self-efficacy, usually by questionnaire.

### Level two

Level two measures involved a piece of equipment or specific training required to be able to administer the measure. Both physical and cognitive measures were available to see and try.

## Physical health measures

The physical health measures usually required a watch-like device or sensor that could be placed on the body to give a plethora of physical outcomes, including heart rate, number of steps taken and speed of movement. These devices can be worn at different time points or continuously to give physical outcomes.

## Cognitive measures

The cognitive measures used a touch screen laptop and offered assessments of memory, reaction times, inductive reasoning and visuospatial abilities, which takes around 10-20 minutes to administer.

## Level three

Level three measures were also available and discussed. These measures require a visit to a lab setting in order to gather accurate and more extensive outcome measures in various domains.

Most lab-based measures are for assessment of physical health and can offer incredible in-depth information of the participants' health. There are also more in-depth cognitive assessments with brain scans (fMRI) available if attendees wanted to consider level three assessment.

Following the measurement demonstrations, Professor Eef Hogervorst delivered a summary talk which gave more in-depth information on why you might want to use outcome measures, what measures are available at the NCSEM-EM and finally potential routes to accessing various different measurements.

## Funding opportunities

Councils and other parties can work with academics to obtain additional funding sources when implementing outcome measurements for public health interventions. Attendees were given information on these potential funding options such as the Big Lottery fund, Alzheimer's Research UK and Alzheimer's Society.

The various benefits of applying to each of the examples were discussed. Key points emphasised for all applications were collaboration with an academic, public engagement and creating impact for the wider community.

## Case studies

This part of the evening saw attendees share their interventions and experiences. This facilitated a whole group discussion around measurements already being used by the attendees and the barriers they were facing.

Many found assessing interventions to be a barrier to delivering them. Many discussed difficulties with assessment length and types of assessments being overwhelming and intimidating for participants. Further issues raised were reliability and validity of assessments and no standard outcomes used across the sector (creating a lack of confidence in data collection, for example recall in dementia is hampered and the carer is often an unreliable source making questionnaire use difficult).

It is possible to overcome these barriers if there is consideration when selecting outcome measures, keeping in mind who the assessment is for and what you need to know.

Other barriers related to methods used included:

- It was unclear what controls should do (standard care? control activity?)
- Wide variation in elderly (fitness, ability, function)
- Getting a sufficient sample size (drop out often high, especially among controls)
- GPs are already bombarded with requests for inclusion of participants
- Technology barriers (costs)
- Difficulty in obtaining funding
- A wide difference in the costs of venues (some free, others not)

Other Richmond barriers (qualitative research) to participation were:

- Pain
- Fatigue
- Breathlessness
- Low mood (internal/cognition: 'I will feel bad as a result of exercising', which is often supported by many health professionals and peers telling them to rest)

The costs involved or attending gyms were not as much of a barrier.

Through the case studies and discussions attendees also offered experiences and solutions they had found to barriers.

Tips for navigating barriers to delivering physical activity included:

- Making the intervention fun, not using the word 'exercise' and almost delivering exercise by stealth through social activity and group engagement tasks
- Using music to help people to enjoy movement and engage with the intervention
- Instructor personality is crucial to having a successful uptake of intervention and guarantee adherence. Technology can be used to prompt instructors.
- Balance is often an issue, solutions include cycling on a stationary bike, doing balance exercise with strength exercises, keeping it simple, small groups (six or less)
- Allowing the participant to engage within their own time
- Embedding assessments in the exercise (for example completing the chair stand exercise as many times as possible in 30 seconds)
- Training volunteers to support activities

Important questions to help research include finding out what works for whom and how, and who is the research for? The focus should be on changing mind sets and expectations, emphasising exercise as a social event, that it is fun and you can learning something new.

The discussed interventions were delivered either weekly or once a fortnight, this meant attendance was high and people generally enjoyed these interventions.



## Next steps

Following this event, we will be developing an interactive web resource that will be able to indicate which outcome measures are possible and most advised, based on evidence and academic input from the NCSEM-EM.

The final section of the event will also contribute towards a PhD project looking at how older adults access exercise.

If you would like more information about this event or potential collaborations with academics at Loughborough University, please email [dementia@lboro.ac.uk](mailto:dementia@lboro.ac.uk)

Find out more about dementia research at Loughborough:  
[www.lboro.ac.uk/research/dementia](http://www.lboro.ac.uk/research/dementia)