

Y. SCHIKHOF, L. WAUBEN. **Two types of stimuli in virtual cycling for people with dementia.** *Gerontechnology* 2016;15(suppl):163s; doi:10.4017/gt.2016.15.s.709.00 **Purpose** Exploration of differences in responses by people with dementia during virtual cycling, i.e. cycling on a home trainer while viewing cycle routes or other images on a screen (Figure 1). Practicing physiotherapists and care professionals experience that virtual cycling stimulates people with dementia to start indoor cycling and persevere with cycling. Most studies on exercise adherence have been done with people without dementia.^{1,2} This study focuses on observing people with dementia, during a trial period of new virtual cycling equipment in a day care facility for people with dementia. **Method** A small Dutch company (Wiltraco) provided the virtual cycling set-up with videos of cycle routes, as well as series of images on different subjects, especially for people with dementia. Based on Dementia Care Mapping³ (DCM), an observational tool was used to compare responses to different types of stimulation (video of cycling route versus images of personal interest, like young animals, winter landscapes or photos of Rotterdam before World War II). Eight participants (4 men, 4 women; mean age 82; range 60-93) were observed on mood and engagement, before, during and after cycling. Changes in cycling speed were observed, as well as verbal reactions to the videos and images. A student and senior researcher both used the DCM-tool and compared scores and other observations on the first participants to reach inter-rater agreement. The scores were imported in Excel and analysed. **Results & Discussion** The eight participants showed a slight tendency towards higher engagement while watching the videos of cycling routes, but their mood improved more by watching the images. Both watching the video of cycling routes or images, stimulated the participants to cycle and to persevere in cycling. There was no difference in tempo, but a big difference in verbal reactions. The personally preferred images triggered more reactions, mostly about persons' memories or interests. Even after the virtual cycling episode with images, the participants kept talking about what they saw. Although the participants in this pilot did not clearly favour personally preferred images over videos of cycling routes, when asked, they all communicated more while watching the images. Perhaps this is an additional benefit? This exploration during the trial period caused the day care facility to opt in favour of equipment explicitly where both images and cycle routes could be chosen.

References

1. Rhodes RE, Warbuton DER, Bredin SSD. Predicting the effect of interactive video bikes on exercise adherence: An efficacy trial. *Psychology, Health & Medicine* 2009;14(6):631-640; doi:10.1080/13548500903281088
2. Anderson-Hanley C, Snyder AL, Nimon JP, Arciero JP: Social facilitation in virtual reality-enhanced exercise: competitiveness moderates exercise effort on older adults. *Journal of Clinical Interventions in Aging* 2011;6:275-280; doi:10.2147/CIA.S25337 (online)
3. Brooker DJ, Surr C. Dementia Care Mapping (DCM): initial validation of DCM 8 in UK field trials. *International Journal of Geriatric Psychiatry* 2006;21(11):1018-1025; doi:10.1002/gps.1600

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Figure 1. Virtual cycling