Physical Activity Routines
After Stroke

NHS
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Guide to self-monitoring tools for stroke survivors

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Guide to self-monitoring tools for stroke survivors

NB: the selection of the tool should be based upon the stroke survivor's goal and whether the tool is appropriate for this patient

Type of self monitoring tool	Advantages	Disadvantages	Examples of tools
Paper-based diary	• Quick to use • Useful if the stroke survivor wants to record lots of different types of activities over the day e.g. swimming, walking • Can be used to record time, type, intensity and duration of activity • Can be used to capture fatigue and mental well-being alongside activity • Cheap • Could be laminated and used as fridge diary which helps cue activity and create physical activity habits	• Not suitable for people with writing and communication problems (although they could be supported by a carer) • Subjective measure therefore may be subject to recall bias and social desirability bias • Doesn't provide real time feedback • Doesn't automatically summarise activity levels	• **PARAS physical activity diary**
Heart rate monitor	• An objective measure of physical activity energy expenditure and of time spent in different intensities of activity, also provides an indicator of frequency and duration of these activities. • Useful if goals focus on cardiovascular fitness and increasing the intensity of physical activity • Relatively cheap	• Difficult to don with only one arm • Can provide a lot of data that can be hard to understand. • Changes in heart rate can be related to emotion rather than activity • Relatively expensive compared to paper based diaries pedometers etc.	• **Polar heart rate sensors** www.polar.com/uk-en/productsheart-rate-sensors • **Garmin** buy.garmin.com/en-GB/GB/p/649059

Type of self monitoring tool	Advantages	Disadvantages	Examples of tools
Pedometer	• Relatively cheap and widely available • Easy to use • Provide real time feedback to potentially aid behaviour change	• Not useful for stroke survivor with slow gait speeds and/or marked gait impairment as can be inaccurate • Carroll, S.L. et al (2012). The use of pedometers in stroke survivors: are they feasible and how well do they detect steps?. *Archives of Physical Medicine and Rehabilitation,* 93(3), pp.466-470. • Often quite small so can be lost • Some pedometers have small buttons which may be difficult for people with dexterity problems • Although some pedometers store daily step counts, it is usually the case that a written diary of daily steps is also required which introduces another step into the monitoring process • Cannot identify the type of activity being undertaken	• **Omron walking style pedometer** Used successfully in cardiovascular populations and older adults, but when tested in our user groups they thought the buttons were quite small and it was difficult to use. www.omron-healthcare.co.uk/activity-monitors • **Yamax digiwalkers** www.yamax.co.uk/yamax-pedometers/ Used in the PACE-UP trial. Feasible for use with healthy older adults but our user group fed back they were difficult to open. Harris, T. et al (2017). Effect of a Primary Care Walking Intervention with and without Nurse Support on Physical Activity Levels in 45-to 75-Year-Olds: The Pedometer And Consultation Evaluation (PACE-UP) Cluster Randomised Clinical Trial. *PLoS medicine,* 14(1), p.e1002210 • **Sportline 330 step pedometer** Used previously in stroke. Concurrent validity demonstrated for measuring step count Sullivan, J.E., Espe, L.E., Kelly, A.M., Veilbig, L.E. and Kwasny, M.J., 2014. Feasibility and outcomes of a community-based, pedometer-monitored walking program in chronic stroke: a pilot study. *Topics in Stroke Rehabilitation*, 21(2), pp.101-110. • **Pingko walking pedometer** Rated highly in our user group but not tested with those with low gait speed.

Type of self monitoring tool	Advantages	Disadvantages	Examples of tools
Fitness tracker	• Objectively measure a number of different physical activity related outcomes e.g. steps, distance walked, stairs climbed, heart rate, calorie turnover, activity intensity and duration, sedentary time • Provide a summary of daily activity • Can be used to set targets e.g. steps per day, reducing sedentary time	• Relatively high costs which increase as the accuracy of the technology increases • Algorithms designed for 'healthy population' therefore can be inaccurate for people with slow gait speeds and impairment. • Often like a watch therefore may be difficult to take on and off for those with stroke. • Basic understanding of technology required • Do not provide information on the type of exercise undertaken	FitBit, Garmin, Misfit and Samsung. Visit www.which.co.uk/Fitness-Trackers for a review of different types of tracker
Commercially available apps	• Can be downloaded often for free on your phone • Some SMART phones have built in health functions	• Basic understanding of technology required • Phone or other suitable device required to download the app • Some apps may not be safe and secure	**Map My Walk, Map My Run, Couch to 5K, Strava, Human Activity Tracker.** **The Organisation for the Review of Care and Health Apps (ORCHA)** can be used to review the quality of apps. appfinder.orcha.co.uk/search//?keyword=Stroke/Transient%20Ischaemic%20Attack **My-therapy** provides information about different apps for clinicians and patients www.my-therapy.co.uk/