WHO IS MOST LIKELY TO INCREASE AND SUSTAIN THEIR PHYSICAL ACTIVITY FOLLOWING STROKE?

By Adria Quigley PT, PhD

KEY POINTS

1. Males and people with normal cognitive function were more likely to be physically active, regardless of stroke severity
2. Increased physical activity was associated with a better functional outcome at 6 months post-stroke
3. We need targeted interventions for individuals with decreasing physical activity (ie. females, those with cognitive impairment) in the subacute phase

Background and objective

- Stroke survivors are less likely to be physically active compared to healthy older individuals.
- The purpose of this study was to assess the physical activity levels in the first 6 months after stroke among individuals with similar physical activity patterns over time and to investigate the association between physical activity trajectories and functional recovery at 6 months post-stroke.

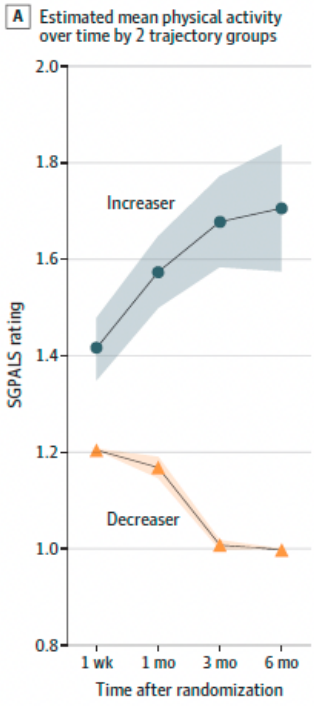
Methods

Longitudinal prospective cohort study of 1367 acute stroke survivors aged 18 or older stratified into physical activity trajectory groups

> *"stroke survivors can make functional gains by becoming more physically active, regardless of initial stroke severity"*

- Physical activity was measured using the Physical Activity Level Scale (SGPALS) at 1 week, 1 month, 3 months, and 6 months.
- The primary outcome was physical activity trajectories over time, estimated using group-based trajectory analysis. This type of analysis allows for the classification of individuals into distinct subgroups based on similar physical activity patterns over time.
- The secondary outcome was functional recovery (modified Rankin Scale) at 6 months post-stroke.
- Baseline sociodemographic characteristics, stroke severity (National Institutes of Health Stroke Scale), and cognitive function (MoCA) were also measured.

Results



- The authors identified two distinct trajectory groups: physical activity increasers (n = 720 of 1367 participants [53%]) and decreasers (n = 647 [47%]).
- **Increasers** significantly increased their physical activity and sustained light-intensity physical activity over time
- **Decreasers** significantly decreased their physical activity compared with increasers and became inactive within 6 months.

In comparison with the decreasers, those in the increaser group were:

- Younger
- Predominantly male
- Worked full-time
- Had an educational level of 12 years or less
- Normal cognition
- Able to walk without an aid
- Did not use antihypertensive or anticoagulant drugs
- Used < 5 drugs

- Stroke severity **did not** differ between increasers and decreasers.

- Very mild stroke (NIHSS score 0-3), ability to lift both arms, and ability to walk without an aid at randomization were associated with higher adjusted odds of a better functional recovery using the modified Rankin Scale.

- Increased physical activity was associated with better functional recovery at 6 months post-stroke.

Limitations

- A large proportion (71%) of the participants had either a very mild or mild stroke in this sample, which may limit the generalizability to moderate or severe stroke.

- Group-based trajectory analysis is a robust statistical method, but it only identified two physical activity trajectory groups, which may suggest that the sample was lacking in diversity

- SGPALS has limited validity in estimating physical activity levels, with weak associations between the scale and accelerometer-measured moderate-vigorous physical activity and step counts.2

Clinical Implications

The good news is that stroke survivors can make functional gains by becoming more physically active, regardless of initial stroke severity!

Neurophysiotherapists should develop and implement interventions to target those more susceptible to decreasing their physical activity levels over time (ie. female stroke survivors and those with cognitive impairment) to prevent this plateau from occurring.

It is important to address environmental, psychological, and sociocultural barriers to physical activity, particularly among females and individuals with cognitive impairment.

STUDY REFERENCE

1. Buvarp D, Viktorisson A, Axelsson F, et al. Physical Activity Trajectories and Functional Recovery After Acute Stroke Among Adults in Sweden. *JAMA network open*. 2023;6(5):e2310919-e2310919. doi:10.1001/jamanetworkopen.2023.10919

Supporting Article

2. Beldo SK, Aars NA, Christoffersen T, et al. Criterion validity of the Saltin-Grimby Physical Activity Level Scale in adolescents. The Fit Futures Study. *PloS one*. 2022;17(9):e0273480-e0273480. doi:10.1371/journal.pone.0273480

MEET THE REVIEWER

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