Letter by Kutlubaev and Mead Regarding Article, “Exertion Fatigue and Chronic Fatigue Are Two Distinct Constructs in People Post-Stroke”

To the Editor:

We read with interest the article by Tseng et al1 published in the December issue of Stroke. This study supports the concept that there are 2 types of fatigue after stroke—peripheral (neuromuscular) and central (cognitive).2,3 Authors demonstrated in chronic stroke patients that peak oxygen uptake was associated with exertional fatigue, whereas depression was associated with chronic fatigue. Exertion fatigue could be interpreted as a fatigue associated with neuromuscular impairment, whereas chronic fatigue is central in origin and may be related to failure to sustain attention.2

However, the relationship between these 2 types of fatigue could well be more complex. Population-based studies have demonstrated associations between depression and low levels of physical activity.4 Animal studies have shown that exercise may have similar effects on the brain as antidepressants do,5 and exercise improves depressive symptoms in humans.4 Functional neuroimaging studies reported that physical activity is associated with activation of prefrontal brain and insular and anterior cingular cortex.5 The same brain areas were implicated in the development of tiredness after stroke.6 Thus, physical activity, by activating the prefrontal circuits, may improve attention and therefore reduce fatigue. One plausible model for post-stroke fatigue is that reduced physical activity after stroke may lead to physical deconditioning and therefore exertional (neuromuscular) fatigue, and that exertional fatigue leads to avoidance of physical activity, which then contributes to the development of chronic (cognitive) fatigue.

As Tseng et al suggest,1 further larger studies are required to unpick the pathophysiology of fatigue after stroke. Longitudinal cohort studies are required, with measurements of physical activity, physical fitness, and mood at multiple time points to determine whether low levels of physical fitness might lead to both exertional and chronic fatigue.

Disclosures

None.

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