Leisure activity participation and risk of dementia
An 18-year follow-up of the Whitehall II Study

Andrew Sommerlad, PhD, Séverine Sabia, PhD, Gill Livingston, MD, et al.

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Study question
Is participation in leisure activity associated with a long-term lower risk of incident dementia?

What is known and what this paper adds
Participation in leisure activities is associated with a lower risk of dementia but it is unclear if reverse causation could explain the association. This investigation’s results show that participation in leisure activities at mean age 56 years was not associated with incidence of dementia over the subsequent 18 years. Associations were only evident when leisure activity was assessed at older ages, with less than 10 years between assessment of leisure activities and diagnosis of dementia. These results do not support the hypothesis that leisure activity participation can lower dementia risk, but suggest instead that reduction in activity participation is an indication of possible prodromal dementia.

Methods
The investigators analyzed data from 8,280 civil servants enrolled in the Whitehall II longitudinal study (30.7% female; mean baseline age, 55.9 ± 6.0 years). Data concerning leisure activity participation was collected using a 13-item scale during the 1997–1999 visit (baseline) and again in the 2002–2004 and 2007–2009 visits. Cases of incident dementia were identified using 3 linked UK national healthcare databases. Cox regression analyses were used to test for associations between leisure activity participation and incident dementia risks.

Results and study limitations
Over 147,774 person-years of follow-up, 360 participants were diagnosed with incident dementia (incidence of 2.4 cases per 10,000 person-years.) Leisure activity participation levels at baseline were not associated with the risk of dementia over the subsequent 18.0 years. In contrast, higher levels of leisure activity participation at the 2007–2009 timepoint was associated with lower incident dementia risks over the subsequent 8.3 years. Decline in leisure activity participation over 10 years was associated with subsequent elevated risk of dementia. No consistent associations were found for participation in specific types of leisure activities. The present study’s limitations include a lack of standardized dementia screenings and the inexhaustive list of leisure activities included in assessments.

Study funding and competing interests
This study was funded by the Wellcome Trust, the NIH, the UK Medical Research Council, and the British Heart Foundation. Some authors report additional competing interests. Go to Neurology.org/N for full disclosures.

<table>
<thead>
<tr>
<th>Mean age at leisure activity assessment (mean years follow-up)</th>
<th>Hazard ratio (95% CI) for risk of incident dementia per 1-SD increase in leisure activity participation scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>55.8 (18.0)</td>
<td>0.92 (0.79–1.06)</td>
</tr>
<tr>
<td>61.0 (13.0)</td>
<td>0.88 (0.76–1.03)</td>
</tr>
<tr>
<td>65.7 (8.3)</td>
<td>0.82 (0.69–0.98)</td>
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</tbody>
</table>
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**CORRECTIONS**

**Stroke Reperfusion Therapy Following Dabigatran Reversal With Idarucizumab in a National Cohort**

*Neurology*® 2021;96:828. doi:10.1212/WNL.0000000000009542

In the article "Stroke Reperfusion Therapy Following Dabigatran Reversal With Idarucizumab in a National Cohort" by Barber et al., the first sentence in the Methods section should denote this study as providing Class III evidence. The authors regret the error.

**Reference**


**Leisure Activity Participation and Risk of Dementia**

*An 18-Year Follow-up of the Whitehall II Study*

*Neurology*® 2021;96:828. doi:10.1212/WNL.0000000000011447

In the article "Leisure Activity Participation and Risk of Dementia: An 18-Year Follow-up of the Whitehall II Study" by Sommerlad et al., the second sentence of the Results section should read "During 147,774 person-years at risk, 360 incident dementia cases were recorded (incidence 2.4 per 1,000 person-years)." The short version of the article, published October 28, 2020, should also have stated "incidence 2.4 per 1,000 person-years." The authors regret the error.

**Reference**


**RETRACTION**

**An Alternative to Vitamin D Supplementation to Prevent Fractures in Patients With MS**

*Neurology*® 2021;96:828. doi:10.1212/WNL.0000000000011856

The Editors retract the article "An Alternative to Vitamin D Supplementation to Prevent Fractures in Patients With MS." We previously published an Expression of Concern about this Letter to the Editor along with several other articles by Y. Sato and others. Since then, the other articles in the Expression of Concern have been retracted.

The Letter to the Editor is strongly reliant on several of its references also authored by Y. Sato. We have learned that references 2, 4, 5, 6, and 7 in the Letter have been retracted by other journals and therefore retract this Letter.

**References**

2. Does compensatory hyperparathyroidism predispose to ischemic stroke? Decreased bone mass and increased bone turnover with valproate therapy in adults with epilepsy; An alternative to vitamin D supplementation to prevent fractures in patients with MS; High prevalence of vitamin D deficiency and reduced bone mass in Parkinson’s disease [Expression of Concern]. *Neurology* 2018;90:e287.