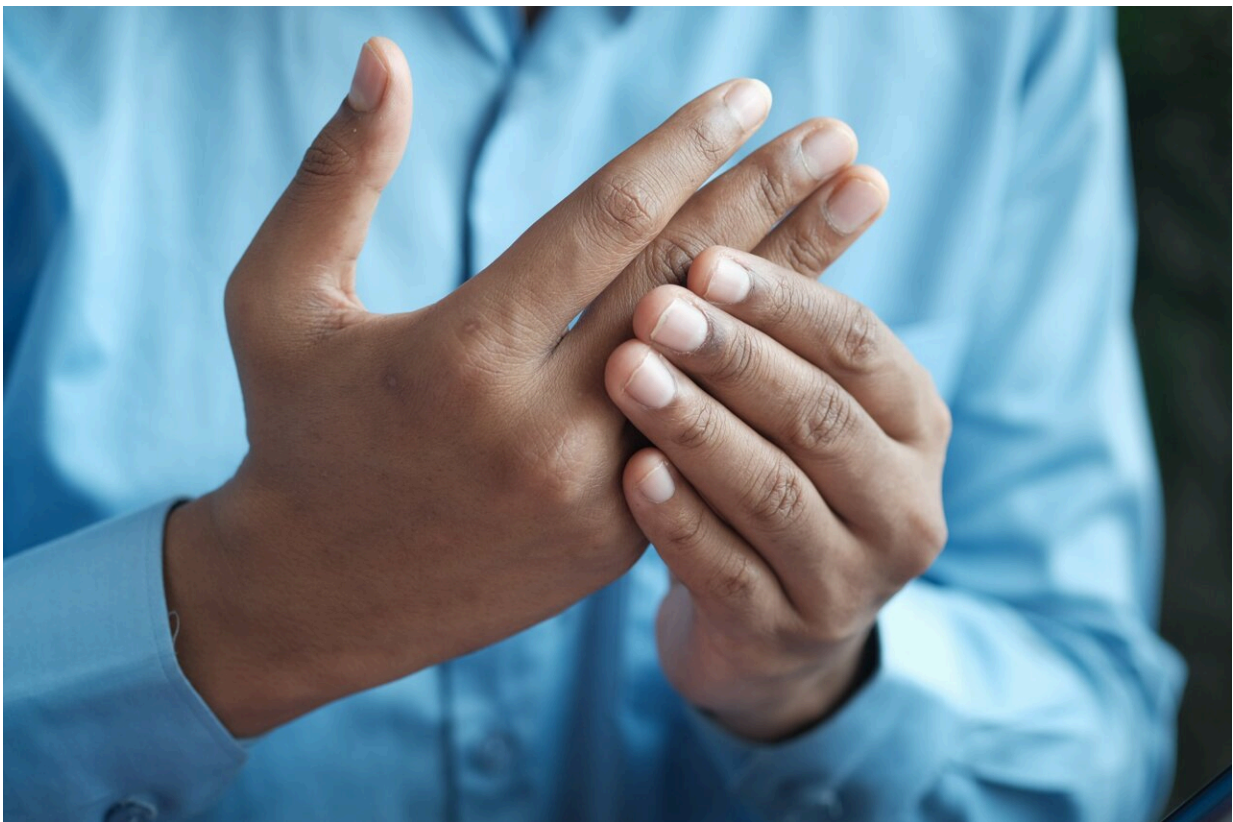


# Inflammatory activity of rheumatoid arthritis linked to specific cognitive impairments

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The inflammatory activity in the body caused by rheumatoid arthritis is linked to specific cognitive impairments, finds a small comparative

study, published in the open access journal *RMD Open*.

These are diminished visuospatial abilities, recall, abstract thinking, and the executive functions of working memory, concentration, and inhibition.

Inflammatory activity in [rheumatoid arthritis](#) has been associated with various systemic effects, including within the brain, but it's not clear which specific cognitive domains might be affected.

To investigate, the researchers compared the cognitive function of 70 adults with rheumatoid arthritis (80% women, average age 56) under the care of one hospital and 70 volunteers without rheumatoid arthritis, and matched for age, sex, and [educational attainment](#).

Nearly 3 out of 4 of the patients (49; 72%) had ongoing moderate to high levels of systemic inflammatory activity caused by their disease, as measured by levels of indicative proteins and the degree of joint inflammation, despite conventional drug treatment. They had had their disease for an average of 10.5 years.

All 140 participants underwent comprehensive neurological and psychological assessment, plus various validated [cognitive tests](#), and assessments of mood and quality of life between June 2022 and June 2023.

Specific cognitive abilities tested were the ability to process and order visuospatial information; naming; attention; language; abstract thinking; delayed recall; and orientation, plus [executive functions](#) of working memory, concentration, and inhibition.

Cognitive impairment was defined as a Montreal Cognitive Assessment (MoCA) score of less than 26 out of a maximum of 30.

Information was collected on other influential risk factors. These included age; sex; smoking; alcohol intake; [high blood pressure](#); obesity; blood fat levels; diabetes; and a history of heart disease/stroke.

In general, those who were cognitively impaired tended to be older, have lower educational attainment, and have more coexisting conditions--such as obesity, unhealthy blood fat levels, and high blood pressure--than those with intact cognition.

But patients with rheumatoid arthritis achieved lower average scores in the Montreal Cognitive Assessment than the volunteers (23 vs. 25), and lower scores for executive function. Cognitive impairment was recorded in 60% of them compared with 40% of the volunteers.

Significantly more of the patients also scored higher for anxiety and depression and had lower quality of life scores than the volunteers.

Cognitively impaired patients had more substantial and persistent inflammatory activity than those patients who maintained their cognitive function. And they were more likely to have symptoms of depression and poorer physical capacity.

The factors associated with the greatest risk of cognitive impairment among the patients were obesity (almost 6 times the risk) and inflammatory activity throughout the course of the disease (around double the risk). As in the general population, older age and lower educational attainment were also [risk factors](#).

By way of an explanation for their findings, the researchers point to previous suggestions that the [chronic inflammation](#), autoimmune processes, and persistent symptoms of pain and fatigue associated with rheumatoid arthritis could underpin the diminution of cognitive function.

This is an observational study, so no definitive conclusions about causal factors can be drawn. The researchers also acknowledge various limitations to their findings, including the lack of imaging tests to detect vascular damage associated with cognitive impairment.

But they conclude, "These results support the hypothesis that [rheumatoid arthritis] is a chronic systemic inflammatory disease that affects multiple systems, including neural tissue... [and the] results underline the importance of earlier and more stringent control of the activity of arthritis and the need for new therapeutic strategies aimed at associated factors, with the aim of mitigating the risk of [cognitive impairment](#) in patients with rheumatoid arthritis."

**More information:** Natalia Mena-Vázquez et al, Impact of inflammation on cognitive function in patients with highly inflammatory rheumatoid arthritis, *RMD Open* (2024). [DOI: 10.1136/rmdopen-2024-004422](#)

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