

# Study finds associations between rheumatoid arthritis, other diseases before and after diagnosis

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A Mayo Clinic-led study involving 3,276 patients has found that people with inflammatory bowel disease, Type 1 diabetes or blood clots may be at increased risk of developing rheumatoid arthritis. The study, published in *Mayo Clinic Proceedings*, also found that people who have rheumatoid arthritis are at increased risk of developing heart disease, blood clots and sleep apnea.

Comorbidities, or other [chronic diseases](#) or conditions, have been linked to poorer outcomes for patients with rheumatoid arthritis, including worsened physical disability, functional decline, poorer quality of life and increased mortality. While some research exists on comorbidities and their effects, this study leverages the Mayo Clinic Biobank, which contains data on 74 comorbidities and the age of onset for these comorbidities.

"We found that comorbidities accumulate in an accelerated fashion after diagnosis of rheumatoid arthritis," says Vanessa Kronzer, M.D., a clinician investigator fellow in rheumatology at Mayo Clinic and the study's corresponding author. "We also found that [autoimmune diseases](#) and epilepsy may predispose to development of rheumatoid arthritis, while [heart disease](#) and other conditions may develop as a result of rheumatoid arthritis."

The findings have important implications for understanding how

rheumatoid arthritis develops. It also could lead to earlier detection and screening initiatives for other diseases and conditions.

Rheumatoid arthritis is a chronic inflammatory disorder that can affect not only the joints, but also can damage a wide variety of body systems, including the lungs, heart and blood vessels. Unlike the wear-and-tear damage of osteoarthritis, rheumatoid arthritis affects the lining of joints, causing a painful swelling that can result in bone erosion and joint deformity.

The study identified 821 patients with rheumatoid arthritis who were diagnosed at Mayo Clinic in Minnesota and Florida between January 2009 and February 2018, and enlisted 2,455 control participants, for a total sample of 3,276 participants. Researchers found that 11 comorbidities were associated with rheumatoid arthritis, including epilepsy and pulmonary fibrosis.

Among other new information in the study, blood clots occurred more commonly in rheumatoid arthritis cases before diagnosis, suggesting that systemic inflammation may start before the rheumatoid arthritis symptoms become clinically apparent. The association with Type 1 diabetes prior to diagnosis of rheumatoid arthritis also was strong, highlighting the importance of heightened suspicion of rheumatoid arthritis in patients with autoimmune diseases, and vice versa.

"Our findings suggest that people with certain conditions, such as Type 1 diabetes or [inflammatory bowel disease](#), should be carefully monitored for rheumatoid arthritis," says Dr. Kronzer. "In addition, people who have [rheumatoid arthritis](#), and their [health care providers](#), should have heightened suspicion and a low threshold to screen for cardiovascular disease, [blood clots](#) and sleep apnea."

The Mayo Clinic Biobank is a collection of samples, including blood and

blood derivatives, and health information donated by Mayo Clinic patients and other volunteers. Among its distinctive values for this research is the depth of self-reported health information gathered, including an extensive list of comorbidities.

Provided by Mayo Clinic

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