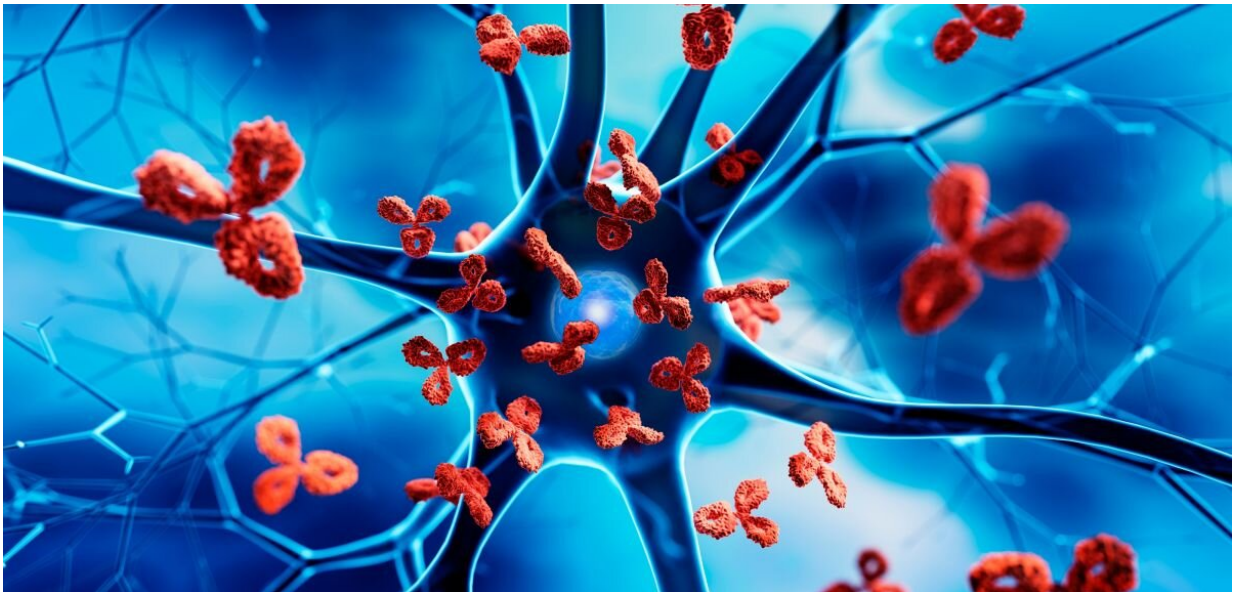


# Autoimmune disorders found to affect around 1 in 10 people

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A new population-based study of 22 million people shows that autoimmune disorders now affect about 1 in 10 individuals. The work, published in *The Lancet*, also highlights important socioeconomic, seasonal, and regional differences for several autoimmune disorders and provides new clues on possible causes behind these diseases.

Autoimmune diseases occur when the normal role of the immune system in defense against infections is disturbed, resulting in it mistakenly

attacking normal healthy cells in the body. Examples of such diseases include [rheumatoid arthritis](#), type 1 diabetes and multiple sclerosis, and there are more than 80 types of [autoimmune diseases](#) known.

Some autoimmune disorders, such as type 1 diabetes, are reported to have increased over the past several decades, raising the question as to whether the overall incidence of autoimmune disorders is on the rise, driven perhaps by common [environmental factors](#) or behavioral changes. Exact causes of autoimmune diseases, particularly with respect to relative contributions of genetic predisposition or environmental factors, also remain largely a mystery and are subject to much research.

Because individual autoimmune diseases are rare, and because there are so many different types of autoimmune diseases, it has been very difficult to undertake sufficiently large studies and establish reliable estimates to answer these questions.

A consortium of experts in epidemiology, biostatistics, rheumatology, endocrinology, and immunology, from KU Leuven, University College London, the University of Glasgow, Imperial College London, Cardiff University, the University of Leicester, and the University of Oxford, have come together to answer some of these questions.

The study used a very large dataset of anonymized electronic health records from the U.K. from 22 million individuals to investigate 19 of the most common autoimmune diseases. The authors examined whether cases of autoimmune diseases are rising over time, who is most affected by these conditions and how different autoimmune diseases may co-exist with each other.

They found that, taken together, these 19 autoimmune diseases studied affect about 10% of the population –13% of women and 7% of men. This is higher than previous estimates, which ranged from 3% to 9% and

often relied on smaller sample sizes and included fewer autoimmune conditions.

They also found evidence of socioeconomic, seasonal, and regional disparities among several autoimmune disorders. They suggest that such variations are unlikely to be attributable to [genetic differences](#) alone and may point to the involvement of potentially modifiable risk factors such as smoking, obesity or stress that contribute to the development of some autoimmune diseases.

Finally, their research also confirmed that in some cases a person with one autoimmune disease is more likely to develop a second compared to someone without an autoimmune disease. These findings reveal novel patterns that will likely inform the design of further research on possible common causes behind different autoimmune disease presentations.

First author of the paper, Dr. Nathalie Conrad, (Deep Medicine, Nuffield Department of Women's & Reproductive Health, University of Oxford) commented, "We observed that some autoimmune diseases tended to co-occur with one another more commonly than would be expected by chance or increased surveillance alone. This could mean that some autoimmune diseases share common risk factors, such as genetic predispositions or environmental triggers. This was particularly visible among rheumatic diseases and among endocrine diseases. But this phenomenon was not generalized across all autoimmune diseases—multiple sclerosis for example, stood out as having low rates of co-occurrence with other autoimmune diseases, suggesting a distinct pathophysiology."

Dr. Nathalie Conrad is also affiliated with KU Leuven and the University of Glasgow.

Senior author of the paper, Professor Geraldine Cambridge, (University

College London) said, "Our study highlights the considerable burden that autoimmune diseases place upon individuals and the wider population. Disentangling the commonalities and differences within this large and varied set of conditions is a complex task. There is a crucial need, therefore, to increase research efforts aimed at understanding the underlying causes of these conditions, which will support the development of targeted interventions to reduce the contribution of environmental and social risk factors."

The study, "Incidence, prevalence, and co-occurrence of [autoimmune disorders](#) over time and by age, sex, and [socioeconomic status](#): a population-based cohort study of 22 million individuals in the UK," is published in *The Lancet*.

**More information:** Nathalie Conrad et al, Incidence, prevalence, and co-occurrence of autoimmune disorders over time and by age, sex, and socioeconomic status: a population-based cohort study of 22 million individuals in the UK, *The Lancet* (2023). [DOI: 10.1016/S0140-6736\(23\)00457-9](#)

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