

Study shows connection between childhood maltreatment and disease in later life

BIRMINGHAM, WEST MIDLANDS, UNITED KINGDOM, January 15, 2025 /EINPresswire.com/ -- University of Birmingham venture Dexter has demonstrated the power of its [Dexter software](#) platform in a study showing that people whose childhoods featured abuse, neglect or domestic abuse carry a significantly increased risk of developing rheumatoid arthritis or psoriasis in later life.

The starting point for the [recently published](#) study was a database of over 16 million Electronic Health Records, from which the Dexter software defined a cohort, one arm that was exposed to childhood maltreatment, and one arm that was not.



Professor Joht Singh Chandan, Clinical Professor of Public Health, and Head of Customer Success at Dexter

The software then checked the records over a 26-year period for medical codes of immune-mediated inflammatory disorders (IMIDs) and found childhood maltreatment was associated with increased incidence rates for Rheumatoid Arthritis and psoriasis.

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*Professor Joht Singh Chandan,
Head of Customer Success at
Dexter software,*

The increase in risk was significant for both diseases, and the association was more pronounced in women than in men.

The study was led by Dr Liam Snook from the University of Birmingham. Its senior author, Professor Joht Singh Chandan, Clinical Professor of Public Health and Health Inequalities Lead at Birmingham Health Partners,

commented: "As far as we're aware, this is the first matched cohort longitudinal study to investigate the relationship between childhood maltreatment and immune-mediated

inflammatory disorders (IMIDs) in later life.”

Previous studies were meta-analyses, which synthesised data from several independent studies, and these showed an increased risk for IMIDs in people whose childhood featured abuse.

But to determine the incidence (the number of new cases over time), you need to follow a cohort over time in a longitudinal study – and the only longitudinal study we could find limited its identification of IMIDs to people who had been hospitalised, so did not show the onset of disease, which is usually recorded in primary care.”

Longitudinal studies, which collect information from the same group of people repeatedly over time, allow for analysis of change over time, and the influence of earlier life circumstances on health later in life.

The uniqueness of the study lies in the Dexter software, which can rapidly inspect huge databases of longitudinal data with billions of datapoints, delivering reproducible, accurate and transparent results.

Professor Chandan, who is also Head of Customer Success at Dexter software, points out two impacts from studies that use this type of ‘big data’. He said: “For scientists, the study identifies an area that warrants further investigation into biological pathways that may link early life stressors to these two immune diseases. For public health professionals, it paints a better picture of the patient.”

“This approach can be used to identify inequalities in healthcare, alerting healthcare providers and delivering to patient groups that need specific attention, and ultimately allocating healthcare resources to meet those with the greatest need. In the future, we plan to use this approach to look at further longitudinal datasets in crime, social care, and mental health care.”

About the study

Starting from 16 million records, the software identified 13.2 million records eligible for the study, based on requirements for age and data quality.

From these, it identified 256,130 records coded for exposure before 18 years of age to abuse (physical, sexual, or emotional), neglect, domestic abuse, either by the GP, or codes relating to social services involvement. The control group consisted of 712,478 records which were matched on age, sex, indices of deprivation, and GP surgery.

The records from these two cohorts were checked for diagnostic codes for immune-mediated inflammatory disorders (rheumatoid arthritis, psoriasis, coeliac disease, multiple sclerosis, inflammatory bowel disease, and systemic lupus erythematosus) over a 26-year period running from 1995 to 2021.

The findings showed the childhood maltreatment cohort had a significantly increased risk for:

- Rheumatoid Arthritis: 11.19/100,000 patient years vs 7.77/100,000 patient years (p=0.003)
- Psoriasis: 152.79/100,000 patient years vs 128.74/100,000 patient years (p<0.001).

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