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Smoking Behind More Than a Third of Severe Rheumatoid Arthritis Cases

Smoking accounts for more than a third of cases of the most severe and common form of rheumatoid arthritis, indicates research published online in the Annals of the Rheumatic Diseases.

And it accounts for more than half of cases in people, who are genetically susceptible to development of the disease, finds the study.

The researchers base their findings on more than 1,200 people with rheumatoid arthritis and 871 people matched for age and sex, but free of the disease. The patients came from 19 health clinics in south and central Sweden, while their healthy peers were randomly selected from the population register. All the participants were aged between 18 and 70.

They were quizzed about their smoking habits and grouped into three categories, depending on how long they had smoked.

Blood samples were taken to assess all the participants' genetic profile for susceptibility to rheumatoid arthritis and to gauge the severity of their disease, as indicated by their antibody levels.

More than half of those with rheumatoid arthritis (61%) had the most severe form of the disease, which is also the most common form, as judged by testing positive for Anticitrullinated Protein/peptide Antibody (ACPA).

Those who were the heaviest smokers -- 20 cigarettes a day for at least 20 years -- were more than 2.5 times as likely to test positive for ACPA. The risk fell for ex-smokers, the

longer they had given up smoking. But among the heaviest smokers, the risk was still relatively high, even after 20 years of not having smoked.

Based on these figures, the researchers calculated that smoking accounted for 35% of ACPA positive cases, and one in five cases of rheumatoid arthritis, overall.

Although this risk is not as high as for lung cancer, where smoking accounts for 90% of cases, it is similar to that for coronary artery heart disease, say the authors.

Among those with genetic susceptibility to the disease, and who tested positive for ACPA, smoking accounted for more than half the cases (55%). Those who smoked the most had the highest risk.

The authors point out that several other environmental factors may contribute to an increased risk of rheumatoid arthritis, including air pollutants and hormonal factors. But they suggest that their findings are sufficient to prompt those with a family history of rheumatoid arthritis to be advised to give up smoking.

Henrik Källberg, Bo Ding, Leonid Padyukov, Camilla Bengtsson, Johan Rönnelid, Lars Klareskog, Lars Alfredsson, Eira Study Group. Smoking is a major preventable risk factor for rheumatoid arthritis: estimations of risks after various exposures to cigarette smoke. *Ann Rheum Dis*, *Ann Rheum Dis* DOI: 10.1136/ard.2009.120899