

# Smoking impairs treatment response in inflammatory back arthritis

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Smoking harms nearly every organ in the body and causes many diseases. Credit: CDC/Debora Cartagena

Smoking impairs the response to biological drugs used to treat inflammatory arthritis affecting the lower back, known as axial spondyloarthritis, or AxSpA, for short, reveals research published online in the *Annals of the Rheumatic Diseases*.

Smoking is known to heighten the risk of developing [rheumatoid arthritis](#), and several drugs don't seem to work as well in smokers with the condition. But as AxSpA is a relatively newly defined form of arthritis, it's not clear what impact smoking has.

The researchers tracked the [treatment response](#) to a class of biological drugs known as [tumour necrosis factor](#) inhibitors in just under 700 patients with confirmed AxSpA in the Swiss Clinical Quality Management Cohort (SCQM), between 2005 and 2014.

Almost two thirds (62%) were smokers; 38% were non-smokers.

Their response to treatment was assessed using recognised criteria to quantify disease activity (BASDAI and ASDAS scores) 1-2 years later.

In all, complete data on treatment response and smoking status were available for just under 500 (70%) patients.

As the impact of treatment on BASDAI scores is likely to be affected by several factors, such as age, sex, symptom duration, weight, and exercise, these were all accounted for in the analysis.

Having smoked in the past didn't affect the response to treatment, but current smoking did.

Compared with the non-smokers, current smokers responded significantly less well to their [drug treatment](#) and achieved significantly smaller reductions in the BASDAI and ASDAS scores.

This difference was particularly noticeable among those who had higher levels of an inflammatory marker (C reactive protein or CRP) to begin with.

Between 10% and 20% fewer current smokers than non-smokers achieved a 50% fall in their baseline disease activity score (BASDAI) after a 1 year of treatment.

Exactly how smoking impairs response to treatment with tumour necrosis factor inhibitors is not clear, say the researchers. It may prompt a rise in C reactive protein or increase pain by interfering with the neural processing of sensory information or starving tissues of oxygen, they suggest.

**More information:** *Annals of the Rheumatic Diseases*,  
[ard.bmj.com/lookup/doi/10.1136 ... rheumdis-2013-205133](https://ard.bmj.com/lookup/doi/10.1136...rheumdis-2013-205133)

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