

## Textile dust is a risk factor for the development of rheumatoid arthritis



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Exposure to textile dust is associated with an increased risk of developing rheumatoid arthritis. In addition, a gene–environment interaction is also seen.

### INTRODUCTION

Rheumatoid arthritis is a chronic inflammatory disease that affects a person's joints and sometimes their internal organs. Rheumatoid arthritis may develop for a number of reasons, and there may be a link between environmental and genetic factors. Cigarette smoking and inhaling certain chemicals such as silica have both been shown to increase a person's risk of developing rheumatoid arthritis. It is thought that the chemicals and irritants in smoke and dust particles might cause changes in the lungs. These changes trigger an autoimmune response – leading to inflammation and the development of rheumatoid arthritis.

### WHAT DID THE AUTHORS HOPE TO FIND?

The authors wanted to see whether breathing in airborne dust generated in the manufacture of textiles might cause workers to develop rheumatoid arthritis.

### WHO WAS STUDIED?

The study looked at 910 Malaysian women diagnosed with early stage rheumatoid arthritis. They also looked at 910 women of a similar age who lived in the same geographical area but who did not have rheumatoid arthritis. The study participants were mostly non-smokers in both groups.

### HOW WAS THE STUDY CONDUCTED?

This was an observational study. This means that the groups of people in the studies had no medical intervention, but simply had information about their medical history and lifestyle collected in a database, which allowed researchers to investigate certain links or risks. The authors collected information in a face-to-face interview. The women were asked if they had ever worked in the textile industry, and whether they had been exposed to textile dust during their leisure time. Blood samples were taken to test for antibodies (called ACPA) and the presence of certain genetic variants that might predispose people to developing rheumatoid arthritis.

### WHAT WERE THE MAIN FINDINGS OF THE STUDY?

The authors found that people exposed to occupational textile dust were almost three-times more likely to develop rheumatoid arthritis compared with people who were not exposed. They also found a link between occupational textile dust exposure and the presence of genetic variants associated with risk of developing ACPA-positive rheumatoid arthritis.

### ARE THESE FINDINGS NEW?

This is the first study of its kind showing that textile dust exposure is associated with an increased risk of developing rheumatoid arthritis, and that there is a gene–environment interaction between certain genetic variants and textile dust exposure that provides a high risk for developing ACPA-positive rheumatoid arthritis.

### WHAT ARE THE LIMITATIONS OF THE STUDY?

This was an observational study, and so it is not possible to draw conclusions about the cause and effect for the risks of developing rheumatoid arthritis, and it is not possible to exclude the involvement of other exposures. Additionally, the study participants may have encountered other agents associated with rheumatoid arthritis through other hazardous exposures to mineral or chemical dusts in their working environment.

### WHAT DO THE AUTHORS PLAN ON DOING WITH THIS INFORMATION?

The authors have previously investigated the link between smoking and exposure to silica in the development of rheumatoid arthritis, mainly in men. In this new study they found a similar pattern of risk for developing rheumatoid arthritis among women exposed to textile dust. Taken together, these findings support the idea that lung exposure to various agents may play an important role in the development of rheumatoid arthritis. The investigation of more environmental exposures as well as biological and clinical parameters is currently underway.

## WHAT DOES THIS MEAN FOR ME?

These results show how important it is to take precautions to reduce exposure to textile dust. If you work in the manufacture or processing of textiles, you should try to limit how much dust you breathe in by wearing protective clothing and masks. Even if you already have rheumatoid arthritis, limiting your ongoing exposure may possibly help to slow disease progression or worsening.

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