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**Title:** Increased exhaled nitric oxide among workers exposed to metalworking fluid aerosol

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**Body:** Background Recent outbreaks of respiratory symptoms among workers, including dry cough, asthma symptoms and pneumonitis, exposed to metal working fluids (MWF), has initiated a cohort-study of 200 exposed and 75 unexposed workers. The exposure is complex and it is yet unknown what causes the respiratory symptoms, i.e. the levels of aerosol exposure, chemical or bacterial components of the MWF. Aim The overall aim is to identify and reduce harmful exposures among machine workers exposed to MWF aerosols. In this subproject we wanted to examine if repeated measurement of fractional exhaled nitric oxide (FENO) discriminate subjects who develop airway inflammation after exposure. Methods A subgroup of 16 exposed workers, in whom personal exposure measurements were performed, were examined with FENO directly after summer vacation and after a working period of at least 8 continues days. Subjects with upper respiratory tract infection within three weeks were excluded, as well as smokers and snuffers. FENO was measured with NIOX MINO®. Results FENO increased in 13 out of 16 subjects, the median FENO directly after holidays was 14 ppb and 16.5 ppb after the working-period. The increase was higher among those who had an initial higher FENO value. The mean increase of FENO was 38% (95% CI 16-60 %), analyzed with a paired t-test. Conclusions FENO increased substantially after exposure to MWF in most subjects. Repeated measurements of FENO in workers seem to be a relevant method to identify subjects with airway inflammation after exposure to MWF. When more subjects have been included in the study, FENO may also help to sort out what characteristics of the exposure can be associated with airway inflammation.