Background
Cement dust is associated with chronic respiratory symptoms, but only few studies have investigated the mechanisms involved in airway inflammation related to cement dust exposure.

We aimed at exploring the association between cement dust exposure, chronic respiratory symptoms and fractional concentration of nitric oxide in exhaled air (FeNO) among cement factory workers in Tanzania.

Methods
Personal total dust samples were collected by 37 mm closed-faced Millipore cassettes from the breathing zone of workers in one cement factory (n=130) and one beverage factory (n=16).

Chronic respiratory symptoms were assessed by using a modified version of the BMRC questionnaire.

FeNO concentrations were measured by a NIOX MINO monitor among 117 dust-exposed cement workers and 24 controls from the beverage factory.

Results
Geometric mean of personal total dust exposure among control and exposed workers were 0.6 mg/m$^3$ and 5.0 mg/m$^3$, respectively (p<0.001).

The prevalence of chronic respiratory symptoms was higher among exposed compared to controls; Wheezing (18.7% vs. 15.3%), work related shortness of breath (SOB) (15.8% vs. 6.1%), dyspnoea (13.5% vs. 9.2%), chronic sputum production (4.7% vs. 1.0%) and chronic cough (6.4% vs. 1.0%).

Exposed workers had higher mean FeNO concentrations (26.0 ppm) than controls (20.0 ppm), but the difference was not statistically significant.

Conclusion
Cement workers had higher dust exposure and higher prevalence of chronic respiratory symptoms than controls. The tendency of increased levels of exhaled nitric oxide among cement workers should be studied further in a follow-up study.