

Pneumoproteins concentrations were determined by ELISA in samples collected post shift.

**Results** The exposure to dust ranged from 0.02 to 9.3 mg/m<sup>3</sup>, bacteria 0.3 to 4900x10<sup>3</sup> bacteria/m<sup>3</sup> and endotoxins from 1 to 3160 EU/m<sup>3</sup>. The workers had lower CC-16 (p<0.001) and a close to significantly lower SP-D (p=0.07) concentrations compared to the referents. Exposure to bacteria was positively associated with CC-16 (p<0.05) in multiple regression analyses. Exposure to bacteria was also positively associated with SP-D and negatively associated with atopy (p<0.05).

**Conclusions** This study showed that exposed subjects had lower serum concentrations of CC-16 and SP-D compared to the referents. Recent exposure to airborne bacteria were positively associated with the serum levels of CC-16 and SP-D.

## Poster-discussion: Respiratory effects 1

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### SERUM PNEUMOPROTEINS IN WASTE WATER WORKERS EXPOSED TO BIOAEROSOLS

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**Objectives** Workers in sewage treatment plants are exposed to bacteria and bacterial components such as endotoxins. Endotoxins are strong proinflammatory agents that may affect the airways. A leakage of pneumoproteins into the circulation may occur. The most validated pulmonary biomarker is Clara cell protein 16 (CC-16). The surfactant-associated pneumoproteins SP-A and SP-D are also increasingly being applied in epidemiological studies. The purpose of this study was to examine the association between exposure and the serum levels of CC-16, SP-A and SP-D in sewage treatment plant workers.

**Methods** All 44 workers from 8 sewage treatment plants and 38 reference workers participated. Microbial exposure was sampled by personal inhalable samplers and determined by fluorescence microscopy (bacteria) and LAL assay (endotoxins).