Background/Aim: Occupational exposure is a risk factor for asthma. However, its impact on asthma control, the main target of asthma management, has rarely been studied. We aimed to investigate this issue in a French longitudinal study on asthma. As past asthma symptoms can predict both future occupational exposures and asthma control, we evaluated a potential healthy worker effect (HWE) in this assessment.

Methods: Analyses were conducted on the French EGEA study (Epidemiological study on the Genetics and Environment of Asthma), a case-control and family-based study (EGEA1: 1991-1995), with two follow-ups (EGEA2: 2003-2007; EGEA3: 2011-2013). Analyses included adult participants with asthma and information on occupational exposure, evaluated using an asthma specific job-exposure matrix (http://asthmajem.vjf.inserm.fr). Asthma control was evaluated according to international guidelines (GINA 2014). We assessed cross-sectional associations between occupational exposure (no, low risk exposures, high risk asthmagens) and asthma control (poorly controlled, controlled) both at EGEA2 and EGEA3, using logistic regressions adjusted for sex, age and smoking. To evaluate a potential HWE, we also assessed the association between past asthma symptoms and asthma control (0-1, ≥2) with subsequent occupational exposure (symptoms at EGEA1 (EGEA2), and exposure at EGEA2 (EGEA3)).

Results: Asthma was poorly controlled in 48% of participants at EGEA2 (n=471) and 47% at EGEA3 (n=338). No statistically significant association was found between occupational exposure to asthmagens and asthma control at EGEA2 (30% exposed, adjusted OR: 1.19 [0.77-1.83]) and EGEA3 (10% exposed, adjusted OR: 1.74 [0.82-3.70]). Participants with past asthma symptoms had lower level of subsequent occupational exposure to asthmagens, although associations were not significant (≥2 symptoms: 0.83 [0.42-1.63] at EGEA2 (n=307); 0.64 [0.28-1.45] at EGEA3 (n=374)).
Conclusions: Results may reflect the presence of a HWE. In future longitudinal analyses, we will use a marginal structural model to address the HWE, which can be modelled as a time-varying confounding situation.