

Variable	At least one of ocular, nasal or respiratory symptoms		p value
	Work related	Not work related	
N	85	102	
Age in years, median (range)	31.4 (24.6-60.7)	33.4 (22.8-57.2)	0.589
Male	47 (55.3)	51 (50.0)	0.470
Ever smoked	27 (31.8)	43 (42.2)	0.144
Atopic to common aeroallergen	33 (38.8)	41 (40.6)	0.806
Sensitised to mouse proteins	32 (37.7)	10 (9.8)	<0.001
OH mouse allergy	21 (24.7)	0 (0.0)	<0.001
Job title			
Technician	20 (23.5)	29 (28.4)	0.720
Scientist	58 (68.2)	64 (62.8)	
Other	7 (8.2)	9 (8.8)	

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sensitised animal workers. Measurement of exposure to endotoxin levels in these workers is in progress.

#### S118 CAN FRACTIONAL EXHALED NITRIC OXIDE HELP PREDICT ASTHMA IN BRITISH FOUNDRY WORKERS?

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**Background** Foundry work may involve exposure to respiratory sensitisers and irritants. There is limited evidence for the use of FE<sub>NO</sub> in occupational settings, and particularly in foundries.

**Aim** To examine the usefulness of FE<sub>NO</sub> in identifying foundry workers at risk of asthma.

**Methods** Foundry workers undertook a respiratory questionnaire. Spirometry (Ndd Easy on-PC Spirometer, Zurich) and FE<sub>NO</sub> (NOBreath, Bedford Scientific, Kent) were measured to ATS/ERS standards. The ATS upper limit of normal (ULN) of 50 parts per billion (ppb), or 45.9ppb for current smokers, determined the high FE<sub>NO</sub> category (FE<sub>NO</sub> >ULN). Workers with FE<sub>NO</sub> >ULN were compared with those with at least one work-related respiratory symptom (WRRS) and those with obstructive lung function (FEV<sub>1</sub>/FVC <0.7) using Chi Square and Fisher's Exact Tests.

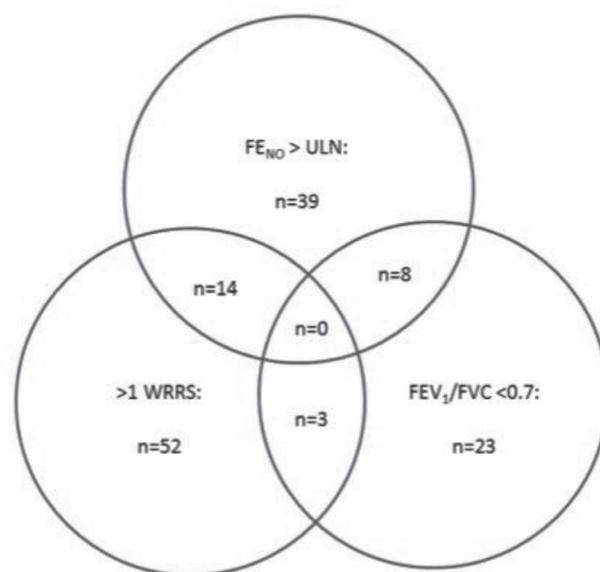
**Results** 351 workers (350 men, 99%) participated. 350 workers had a valid FE<sub>NO</sub> performed. Arithmetic mean FE<sub>NO</sub> was 30.2ppb (95% CI: 27.3–33.2); geometric mean (GM) FE<sub>NO</sub> 20.8 (18.9–22.9) ppb.

FE<sub>NO</sub> exceeded the ULN in 61 (17%) workers. Average age for the FE<sub>NO</sub> >ULN group was 41.5 (95% CI: 38.3–44.7), with a mean of 15.8 (12.4 – 19.2) years working in the foundry industry.

Workers in the FE<sub>NO</sub> >ULN group were significantly more likely to have a current diagnosis of asthma (12% vs 5%, p < 0.05), have ever suffered allergies (55% vs 31%, p < 0.01), or report work-related shortness of breath (3% vs 0%, p < 0.05).

Fourteen workers (4%) had a FE<sub>NO</sub> >ULN and WRRS (Figure 1). Of these 14, only 2 (14%) had a current diagnosis of asthma (Fisher's p = 0.20). Eight (2%) workers had a FE<sub>NO</sub> >ULN and FEV<sub>1</sub>/FVC <0.7, though only 2 (25%) had a current asthma diagnosis (Fisher's p = 0.08).

**Conclusion** A significant proportion of foundry workers have FE<sub>NO</sub> levels that exceed the ATS cut point for likely eosinophilic airway inflammation. Of these workers, most had a raised FE<sub>NO</sub> but no WRRS or obstructive lung disease. Only a minority of workers with FE<sub>NO</sub> >ULN and either WRRS or obstruction had a current diagnosis of asthma. FE<sub>NO</sub> may be useful in identifying foundry workers at risk of asthma and warrants further study.



**Abstract S118 Figure 1** Overlap between FE<sub>NO</sub>>ULN, work-related respiratory symptoms and obstructive spirometry in foundry workers. Total numbers in each group (% of total): FE<sub>NO</sub> >ULN: n=61 (17%); >1 WRRS: n = 69(20%); FEV<sub>1</sub>/FVC <0.7 = n = 34 (10%). FE<sub>NO</sub>>ULN = FE<sub>NO</sub> above 50ppb or 45.9ppb in current smokers; WRRS = at least one work-related respiratory symptom