

serial PEFs, specific IgE bloods, employment advice and compensation advice by their second outpatient appointment. We compared the Birmingham Occupational Lung Disease Service's (OLDS) adherence to the BTS Standards of Care for OA to highlight areas of the service requiring improvement. The Midlands Thoracic Society surveillance scheme database of all Regional OA patients (known as Shield), was utilised to identify all workers notified with OA between 2012 and 2018 (n=146).

**Results** A comprehensive occupational history and spirometry were carried out in all patients. The completion of serial PEF recording and Oasys analysis (the principal method of objective confirmation of occupational asthma) dipped to 63% in 2015, exacerbated by referral after removal from employment. Provision of compensation and employment advice was lower at the time of notification, as employment advice requires the identification of the cause of occupational asthma, which often took longer. Specific IgE measurement was the lowest as not generally available for most agents. The OLDS performed the best in 2013, with 86% fulfilment of the guidelines. There was a subsequent steady decline to 67% in 2016 when the service was without a lead. Since the appointment of a service lead, performance has improved (See figure).

Recommendations for service improvement include the production of an instructional video for ideal PEF technique, text reminders for patients to record PEF data, and investment into smartphone-compatible digital PEF meters

for easy recording and sharing of data. Computer alerts for clinicians reminding them to complete and record fulfilment of BTS criteria as well as the production of local standards of care may improve service provision for the future.

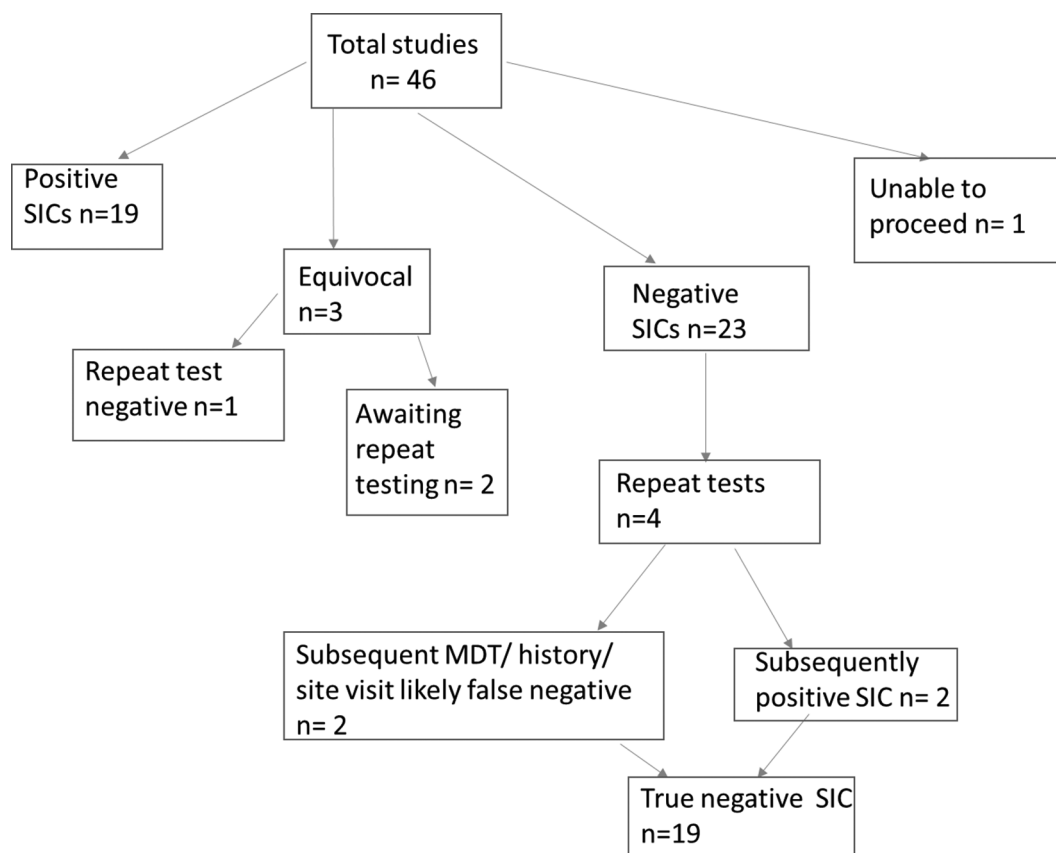
#### S122 POSITIVE VS NEGATIVE SPECIFIC INHALATIONAL CHALLENGES IN OCCUPATIONAL ASTHMA; REVIEW OF 9 YEARS OF TESTING IN A SINGLE UK CENTRE

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10.1136/thorax-2019-BTSAbstracts2019.128

**Introduction and objectives** Occupational causes are thought to account for 20% of the global burden of asthma.<sup>1</sup> The gold standard test for identifying occupational asthma is a specific inhalational challenge (SIC) to the suspected occupational agent. However, there is little published data on real life outcomes of these challenges. We present the outcome of data from such challenges collected in one UK centre.

**Methods** We performed a retrospective review of 46 consecutive SICs carried at the Occupational Lung Disease service between September 2010 and June 2019. Data was collected on demographics, occupation, OASYS score pre SIC, history



Abstract S122 Figure 1 Outcomes of studies

of previous asthma, challenge agent tested, outcome of SIC and ongoing symptoms post SIC.

**Results** Of the 46 SICs carried out during this period, 23 were negative, 19 were positive, 3 were equivocal and 1 test could not be completed (see figure 1). Median age of patients was 49.5yrs (IQR 42–58), 18 patients were female (39%). Fifty nine percent of SICs were carried out whilst patients were currently exposed at work. Fifty three percent of negative SICs had an OASYS score of  $> 2.52$  i.e. positive peak flow charts for work effect. The most common occupations were food industry work 11 (23%) and healthcare 9 (20%). In the positive SIC group 16% of patients had a prior history of asthma compared to none in the negative SIC group. Almost twice as many patients with negative SICs had ongoing symptoms compared to those with positive SICs (43 vs 26%).

**Conclusions** Our data suggests that patients with a positive SIC were more likely to have a prior history of asthma documented and even when patients have a negative SIC a high proportion have ongoing symptoms.

#### REFERENCE

- Vandenplas O, Suojalehto H, Aasen TB, Baur X, Burge PS, de Blay F, *et al.* Specific inhalation challenge in the diagnosis of occupational asthma: consensus statement. *The European respiratory journal*. 2014;**43**(6):1573–87.

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#### OCCUPATIONAL EXPOSURES TO WOOD, METAL, AND STONE IN IPF; FINDINGS FROM THE IDIOPATHIC PULMONARY FIBROSIS JOB EXPOSURES STUDY (IPFJES)

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10.1136/thorax-2019-BTSAbstracts2019.129

**Introduction and objectives** Case-control studies investigating occupational exposures in idiopathic pulmonary fibrosis (IPF) have found associations with wood, metal, and stone dust. A recent meta-analysis of these studies found pooled odds ratios of 1.7 (1.3–2.2), 2.0 (1.3–3.0), and 1.7 (1.2–2.4) respectively. The majority of studies relied on self-reported exposure histories and used community controls; approaches vulnerable to

bias. Our aim was to investigate wood, metal, and stone dust associations by means of a lifetime occupational history, which included details of job tasks, in a hospital based case-control study.

**Methods** Participants (488 cases, 368 controls; all men) from a UK based multicentre hospital-based case-control study, the idiopathic pulmonary fibrosis job exposures study (IPFJES), were asked to recall details of their occupational history including describing job tasks within each job. They were not asked directly about specific exposures. Participants who described working with wood, metal or stone (or silica) were labelled as exposed and (unadjusted) odds ratios for associations between exposure and IPF were calculated.

**Results** 45 cases (9%) and 28 controls (8%) were exposed to wood (OR 0.81  $p=0.5$ ), 86 cases (18%) and 48 controls (13%) were exposed to metal (OR 1.43  $p=0.07$ ), and 23 cases (5%) and 8 controls (2%) were exposed to stone (OR 2.23  $p=0.06$ ). **Conclusions:** Unprompted reports of wood, metal, and stone dust exposure from job task descriptions are not significantly statistically associated with IPF risk in IPFJES. Our exposure measures may lack sensitivity or estimates of association in previous studies may be an artefact of study-design.

#### 'Under your skin' – imaging in lung disease

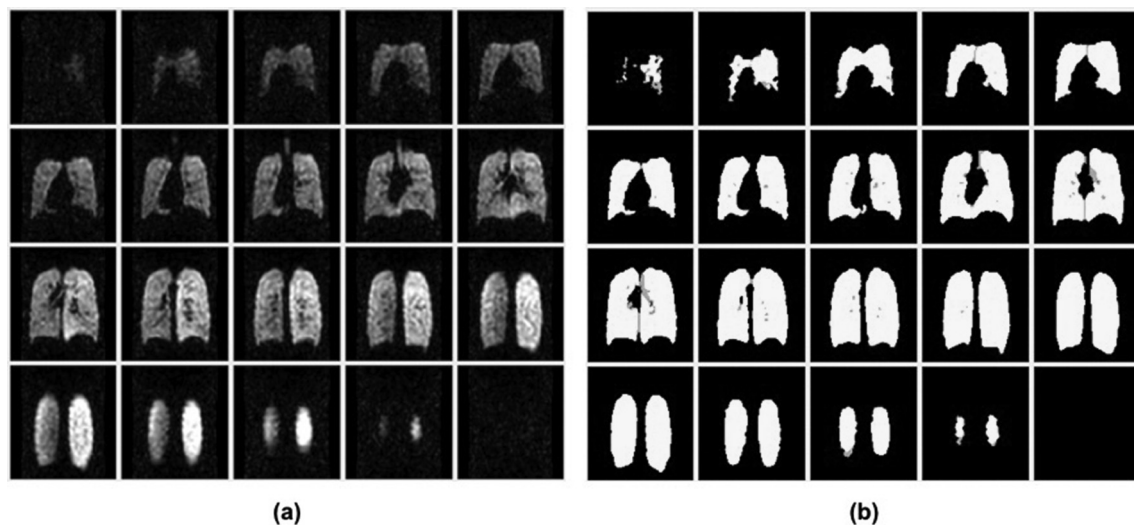
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#### MULTI-CENTRE REPRODUCIBILITY OF 19F-MR VENTILATION IMAGING IN HEALTHY VOLUNTEERS

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10.1136/thorax-2019-BTSAbstracts2019.130

**Introduction** <sup>19</sup>F-MRI of inhaled perfluoropropane (PFP) is a relatively new approach to ventilation imaging, enabling assessment of regional gas distribution without the requirement for hyperpolarization.<sup>1</sup> While quantitative measures of pulmonary ventilation (e.g. the percent ventilated lung volume, %VV) are well established for hyperpolarized-gas MRI,<sup>2</sup> their utility in <sup>19</sup>F-MR ventilation imaging is less clear. Determining the



**Abstract S124 Figure 1** (a) Representative <sup>19</sup>F-MR ventilation images (coronal slices) from one healthy volunteer; and (b) corresponding image segmentations showing agreement (yellow) and discrepancies (green) of ventilated regions between the two raters