

## BTS Clinical Statement on Occupational Asthma

### Appendix 4: Diagnostic tests for OA: a summary

Test	Sensitivity / specificity for a diagnosis of OA	Diagnostic utility
<b>History (expert).</b>	Sensitivity ~90%, but specificity 27-50%.	Many patients with work-related symptoms do not have OA.
<b>Questionnaires.</b>	Generally sensitive but less specific.	Used for health surveillance. May be falsified.
<b>Spirometry.</b>	Single and cross-shift measures have low sensitivity.	Used for asthma diagnosis and health surveillance. Baseline value useful for prognosis, and to judge changes over time in exposed workers.
<b>Immunological testing (skin prick testing and specific IgE).</b>	HMW: sensitivity of 0.74 and specificity of 0.71. LMW: sensitivity of 0.28 and specificity of 0.89.	Confirm sensitisation if +ve. More useful for HMW allergens.
<b>Serial PEF.</b>	Sensitivity of 75-82% and specificity of 79-88%. Low quality data significantly alter sensitivity and specificity.	Generally regarded as the best first-line approach to assessing the physiological response to inhaled agents in the workplace. Does not confirm the cause, except in cases when exposure varies by day or time of day. Also positive in WAA.
<b>Exhaled nitric oxide and sputum eosinophils.</b>	Single measures have low sensitivity for OA. Increases the sensitivity of SIC.	Used for asthma diagnosis and as an additional test with SIC.
<b>Non-specific bronchial hyper-responsiveness (NSBHR).</b>	Single measures: sensitivity of 34-64% and specificity of 84-87%. Serial measures: sensitivity of 43-62% and specificity of 52-83%. Increases the sensitivity of SIC.	Single measures used for asthma diagnosis. May resolve within a few days of ceasing exposure in early OA. Serial measures more useful for confirming OA. Additional test with SIC.
<b>Specific inhalation challenge (SIC).</b>	Difficult to assess sensitivity and specificity as regarded as the gold standard diagnostic test (although false positive and negative responses occur). Increasing time since last occupational exposure reduces sensitivity. NSBHR, FeNO and induced sputum improve sensitivity.	Most UK patients do not require SIC for a diagnosis of OA. Only available in specialist centres. Useful for confirming novel causes and for diagnosis if other tests are not feasible or inconclusive. May cause asthma exacerbations.

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<b>Workplace challenge.</b>	Difficult to assess sensitivity and specificity.	Alternative to SIC if exposures cannot be safely replicated. May confirm OA after -ve SIC.
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