

Table 3G. Occupational asthma

Referral Guideline	Rationale	Evidence Type
Patients with a history suggesting occupational	(1) History and physical examination is insufficient to confirm occupational	Diagnostic
asthma should undergo testing to confirm the	asthma, and inaccurate conclusions can easily be drawn' ² . Allergists can	Indirect
diagnosis of asthma and referral to an allergist	interpret spirometry when performed as a baseline, with response to	outcome
caused by or triggered by agents at the workplace and to initiate appropriate avoidance	bronchodilator, serial assessment of spirometry or peak flows, and changes in methacholine response during work periods vs. off work periods. ³⁻⁹	(avoidance)
therapy.	(2) Allergists can outline the algorithm for the clinical investigation of suspected occupational asthma and interpret other studies to confirm bronchial hyper-	
	responsiveness including challenges with methacholine, histamine, cold air or exercise, yet realize that such studies may be negative if performed when the patient is off work and free of symptoms. ^{3,5,-8}	
	(3) Allergists can review Material Safety Data Sheets (MSDS) and other specific details of the workplace obtained either through specific questioning, direct observation during an onsite work evaluation or assisting in obtaining industrial hygiene survey in an effort to identify exposure to possible causal agents. Allergists can arrange and interpret workplace challenges and be able to provide assistance in referring to centers that can perform specific agent laboratory challenges if indicated. ^{3,5,-7}	
	(4). The importance of identifying the agent responsible for asthma is that continued exposure can lead to worsening asthma and possibly persistent disease even after exposure is instituted. Early accurate diagnosis and removal from further exposure to specific work sensitizers carries the best medical prognosis for those with occupational lung disease. ¹⁰⁻¹⁶	
Consider referral of a worker with asthma for evaluation of workplace exposures that could worsen or exacerbate the asthma.	Exposure to workplace irritants is a known cause of and known exacerbator of asthma. ¹⁷⁻²¹	Indirect outcome (avoidance)

References:

- 1. Malo JL, Ghezzo H, L'Archeveque J, Lagier F, Perrin B, Cartier A. Is the clinical history a satisfactory means of diagnosing occupational asthma? Am Rev Resp Dis. 1991; 143:528-32. Evidence grade: III
- 2. Baur X, Huber H, Degens PO, Allmers H, Ammon J. Relation between occupational asthma case history, bronchial, methacholine challenge, and specific challenge test in patients with suspected occupational asthma. Am J Ind Med. 1998; 33:114-22. Evidence grade: III

- 3. Allergy and Immunology Core Curriculum Outline 1996. Core Curriculum Subcommitee of the Training Program Directors. American Academy of Allergy, Asthma and Immunology. J Allergy Clin Immunol 1996;98(6pt.1):1012-5, updated 2002 http://www.aaaai.org/professionals/careers/training_programs.stm Evidence grade: IV
- 4. Moscato G, Godnic-Cvar J, Maestrelli P, Malo JL, Burge PS, Coifman R. Statement on self-monitoring of peak expiratory flows in the investigation of occupational asthma. J Allergy Clin Immunol. 1995; 96:295-301. Evidence grade: IV
- 5. Vandenplas O, Binard-van Cangh F, Brumagne A, et al. Occupational asthma in symptomatic workers exposed to natural rubber latex: evaluation of diagnostic procedures. J Allergy Clin Immunol. 2001; 107:542-47. Evidence grade: III
- 6. ACCP Consensus Committee. Assessment of asthma in the workplace. Chest. 1995; 108:1084-1117. Evidence grade: IV
- 7. Tarlo SM, Boulet LP, Cartier A, et al. Canadian Thoracic Guidelines on Occupational Asthma. Can Resp J. 1998; 5:289-300. Evidence grade: IV
- 8. Cartier A, Pineau L, Malo JL. Monitoring of maximum expiratory peak flow rates and histamine inhalation tests in the investigation of occupational asthma. Clin Allergy. 1984; 14:193-6. Evidence grade: III
- 9. Cockroft DW, Mink JT. Isocyanate-induced asthma in an automobile spray painter. Can Med Assoc J. 1979; 121:602-4. Evidence grade: III
- 10. Moscato G, Dellabianca A, Perfetti L, et al. Occupational asthma. A longitudinal study on the clinical and socioeconomic outcome after diagnosis. Chest. 1999; 115:249-56. Evidence grade: III
- 11. Paggiaro PL, Bacci E, Dente FL, Talini D, Giuntini C. Prognosis of occupational asthma induced by isocyanates. Bulletin Europeen de Physiopathologie Respiratoire. 1987; 23:565-9. Evidence grade: IV
- 12. Gannon PF, Weir DC, Robertson AS, Burge PS. Health, employment, and financial outcomes in workers with occupational asthma. British J Ind Med. 1993; 50: 491-6. Evidence grade: III
- 13. Chan-Yeung M, MacLean L, Paggiaro PL. Follow-up study of 232 patients with occupational asthma caused by western red cedar. J Allergy Clin Immunol. 1987; 79:792-6. Evidence grade: III
- 14. Rosenberg N, Garnier R, Rousselin X, Mertz R, Gervais P. Clinical and socio-professional fate of isocyanate-induced asthma. Clin Allergy. 1987; 17:55-61. Evidence grade: III
- 15. Tarlo SM, Banks D, Liss G, Broder I. Outcome determinants for isocyanate induced occupational asthma among compensation claimants. Occup Environ Med. 1997; 54:756-61. Evidence grade: III
- 16. Perfetti L, Cartier A, Ghezzo H, Gautrin D, Malo JL. Follow-up of occupational asthma after removal from or diminution of exposure to the responsible agent: relevance of the length of interval from cessation of exposure. Chest. 1998; 114:398-403. Evidence grade: III
- 17. Tarlo SM, Leung K, Broder I, Silverman F, Holness DL. Prevalence and characterization of asthmatics symptomatically worse at work among a general asthma clinic population. Chest. 2000; 118:1309-14. Evidence grade: III

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- 18. Goe SK, Henneberger PK, Reilly MJ, et al. A descriptive study of work aggravated asthma. Occup Environ Med. 2004;61:512-7.
- 19. Henneberger PK, Hoffman CD, Magid DJ, et al. Work-related exacerbation of asthma. Int J Occup Environ Health. 2002;8:291-6.
- 20. Henneberger PK, Deprez RD, Asdigian N, et al. Workplace exacerbation of asthma symptoms: findings from a population-based study in Maine. Arch Environ Health. 2003;58:781-8.
- 21. Milton DK, Solomon GM, Roseillo RA, Herrick RF. Risk and incidence of asthma attributable to occupational exposure among HMO members. Am J Ind Med. 1998;33:1-10.