

Expert Assessment of Chemical Exposures of Incident Cases of Work-Related Asthma.

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Background: Environmental sampling at the workplace is not usually feasible in studies involving a large variety of workplaces.

Aim: To develop a semi-quantitative coding procedure for assessing occupational exposures in a population of workers suspected of work-related asthma (WRA).

Methods: An occupational questionnaire was administered to each incident case of WRA in a prospective cohort study. It included questions regarding employer and employment. An occupational hygienist (DB) carried out for each job the coding of potential exposures from a pre-established list of 45 substances within five generic categories (organic aerosols, combustion fumes, gases and mists, inorganic dusts, organic chemicals). Coding was carried out in a semi-quantitative way for concentration in workplace air, frequency and reliability of exposure. Exposure was assigned as low or substantial according to the combination of these indices. Information sources included the questionnaire, technical and material safety data sheets of the substances handled, the industrial chemistry and occupational hygiene literature, several data bases and Web sites.

Results: One hundred and twenty jobs were coded, mainly in manufacturing industries, for a total of 554 assigned exposures covering 45 families of substances. The 10 exposures most often coded were (any level, substantial level, as % of total jobs): solvents (43.0,32.5), cleaning agents (29.2,2.5), pesticides, fungicides and biocides(20,1.6), acids (17.5, 0.8) ammonia (15.8,0), metals (18.3, 3), metallic fumes (20,5.8), woods (18.3, 12.5), paints (15.0, 5.8), and formaldehyde (14.2, 1.6).

Conclusion: The expert coding method identified a large variety of exposures at different levels. It can be a useful alternative to environmental sampling in studies involving a large number of workplaces.

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