

Working Group Report 2: Questionnaires for Work-Related Symptoms After Organic Dust Exposure

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INTRODUCTION

Historically the questionnaire is an important instrument in epidemiological studies on respiratory disease. Recognition of chronic bronchitis was initially based on the symptoms, and an accurate assessment required the use of standardized and validated procedures. This led to the development of a standardized questionnaire first published by the British Medical Research Council [BMRC, 1965] and specific for chronic bronchitis [BMRC, 1966]. Other organizations like the American Thoracic Society [Ferris, 1979] and the European Committee on Coal and Steel [CCS,

1967] adopted revised versions of the BMRC questionnaire, which were more suitable for use in other populations or for other purposes.

Questionnaires were also developed for asthma-like symptoms by the International Union Against Tuberculosis and Lung Disease [Burney et al., 1989]. The working group used the widespread applied questionnaire from the European Community Respiratory Health Survey. This questionnaire has been developed for use in a large-scale general population survey [ECRHS, 2003].

A milestone in questionnaire methodology was the development of questionnaires specific for occupationally exposed populations which included questions on work-related symptoms and temporal patterns in symptoms. A specific questionnaire for occupational exposure to organic dust was published at a previous Skokloster meeting [Rylander et al., 1990]. Two phase questionnaires (a generic one, followed by specific agent or job title oriented ones) are particularly useful for this purpose [Tielemans et al., 1999].

In a multinational EU project, a questionnaire was developed to be used among persons exposed to dust during garbage collection or when working in the recycling industry [<http://www.miljomedicin.gu.se/english>]. Download versions of this questionnaire are available in Danish, Dutch, English, French, German, Italian, and Swedish. It can be used as a basis to which work specific questions on other organic dust environments can be added.

VALIDITY AND REPRODUCIBILITY OF QUESTIONNAIRE DATA

Validation is an important part in developing questionnaires and extensive reviews on validation studies are

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available [Samet, 1978; WHO, 1982]. The percentage of agreement was between 65 and 90% in the USA, the UK and the Netherlands when the questionnaire was administered twice after a short time interval of one to a few months by a trained experienced observer. Results also indicate that the appearance of symptoms is not necessarily accompanied by changes in respiratory function. Agreement, even with trained interviewers, is unsatisfactorily low. Other factors, which contribute to the low reproducibility, are differences between observers, inaccuracy in the use of the questionnaire, responder bias and psychosocial factors [Fairbairn et al., 1959; Wright et al., 1977; Samet, 1978; WHO, 1982].

This implies that although researchers believe that different questionnaires and added items will gather more useful information in a better way, there is little firm evidence that suggests that this is actually the case. On the other hand, epidemiological studies do show that correlations between a response to questions on work-related symptoms and work-related sensitization is stronger than for general respiratory symptoms [Hollander et al., 1997]. Also, populations with an exposure to endotoxins are likely to suffer from more or less specific respiratory and systemic inflammatory responses that are clearly clustered as compared to non-exposed controls [Douwes et al., 2001]. The Workgroup concluded that there is a need to perform validation studies to be able to interpret questionnaire data correctly and improve the precision of the questionnaires.

RECOMMENDATION

- An occupational history should be included in the questionnaire.
- Specific questions on work tasks (not only job title, and industry) should be included depending on the kind of working environment that will be studied. When studying acute symptoms, questions need to be modified in such a way that symptoms that occur during the present working day are included.
- With regard to temporal patterns of symptoms, specific attention should be given to symptoms during work, just after work, and symptoms improving during holidays. Similarly, questions should be asked if symptoms are worse on a specific day of the week.

- Questions should be included on symptoms that relate to specific tasks or to handling of specific products, agents, etc.

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