

### 347 OCCUPATIONAL CONTACT DERMATITIS FROM PROTEIN IN SEA PRODUCTS: DIFFERENCES BETWEEN 2 POPULATIONS

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**Background** Protein contact dermatitis has frequently been reported in case studies (usually in cases involving contact with seafood products), but there are very few descriptive series.

**Objectives** First, to determine the incidence of protein contact dermatitis among fishermen in France and compare it with data from onshore work involving seafood exposure. Second, to discover what factors could explain any differences.

**Methods/materials/patients** We analysed data from the French national occupational disease surveillance and prevention network (RNV3P) and occupational diseases declared to the French National Network for Monitoring and Prevention of Occupational Disease. This retrospective study was done for a 13 year period.

**Results** Between 2000 and 2012, we only found eight cases of protein contact dermatitis in the French network. There were no cases of protein contact dermatitis in the seafaring population. The eight cases from the French network are essentially allergies to different fish and chefs are the professionals most affected. Atopy is present in half of these cases.

In the seafaring population we found several cases of eczema due to bryozoans and to gloves but no protein contact dermatitis.

**Conclusions** Chefs who have to cook seafood are more at risk of occupational protein contact dermatitis than fishermen. We think that skin protection (that is to say glove wearing) is better implemented in the fishing sector than in the catering profession on shore in France.

### 384 THE RISK BUSINESS OF BEING AN ENTOMOLOGIST: A SYSTEMATIC REVIEW

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**Introduction** Adverse work-related health outcomes are a significant problem worldwide. Entomologists, including arthropod breeders, are a unique occupational group exposed to potentially harmful arthropods, pesticides, and other more generic hazards. These exposures may place entomologists at risk of a range of adverse work-related health outcomes.<sup>1</sup>

We sought to determine which adverse work-related health outcomes entomologists have experienced, the incidence and prevalence of these outcomes, and what occupational management strategies have been employed by entomologists, and their effectiveness.

**Methods** A systematic search of eight databases was undertaken to identify studies informing the review objectives. Data pertaining to country, year, design, work-exposure, adverse work-related health outcomes, incidence or prevalence of these outcomes, and occupational management strategies were extracted, and reported descriptively.

**Result** Results showed entomologists experienced work-related allergies, venom reactions, infections, infestations and

delusional parasitosis. These related to exposure to insects, arachnids, chilopods and entognathans, and non-arthropod exposures, e.g. arthropod feed. Few studies reported the incidence or prevalence of such conditions, or work-related management strategies utilised by entomologists. There were no studies that specifically investigated the effectiveness of potential management strategies for entomologists as a population. Critical appraisal indicated poor research quality in this area.

**Discussion** Entomologists are a diverse, unique occupational group, at risk of a range of adverse work-related health outcomes. This study represents the first systematic review of their work-related health risks. Future studies investigating the prevalence of adverse work-related health outcomes for entomologists, and the effectiveness of management strategies are warranted to decrease the disease burden of this otherwise understudied group.

#### REFERENCE

1. Stanhope J, Carver S, Weinstein, P. The risky business of being an entomologist: A systematic review. *Environmental Research* 2015;**140**:619–633.

### 414 INDUCTION OF IL-17 PRODUCTION FROM HUMAN PERIPHERAL BLOOD CD4+ CELLS BY ASBESTOS EXPOSURE

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From our previously reports, chronic, recurrent and low-dose exposure to asbestos fibres causes a reduction in antitumor immunity. In addition with natural killer (NK) cells and cytotoxic T lymphocytes (CTL), the analysis of T helper cells showed that surface CXCR3, chemokine receptor, and the productive potential of interferon (IFN) $\gamma$  were reduced following asbestos exposure in an *in vitro* cell line model and in peripheral CD4 +cells of asbestos-exposed patients. Moreover, experiments revealed that asbestos exposure enhanced regulatory T cell (Treg) function. This study also focused on CXCR3 expression and the Th-17 cell fraction. Following activation with T-cell receptor and co-culture with various concentrations of chrysotile fibres using freshly isolated CD4 +surface CXCR3 positive and negative fractions, the intracellular expression of CXCR3, IFN $\gamma$  and IL-17 remained unchanged when co-cultured with chrysotile. However, subsequent re-stimulation with phorbol 12-myristate 13-acetate (PMA) and ionomycin resulted in enhanced IL-17 production and expression, particularly in CD4 +surface CXCR3 positive cells. These results indicated that the balance and polarisation between Treg and Th-17 fractions play an important role with respect to the immunological effects of asbestos and the associated reduction in antitumor immunity.

### 416 SEARCH FOR BIOMARKERS OF ASBESTOS EXPOSURE AND ASBESTOS-INDUCED CANCERS IN INVESTIGATIONS OF THE IMMUNOLOGICAL EFFECTS OF ASBESTOS

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