**Lung Function, Bronchial Responsiveness and Respiratory Disability in Patients Sensitized to Latex in a Large University Hospital. The Bergen Latex Allergy Study**

T.B. Aasen[1], E. Florvaag[2], A. Irgens[1], S. Elsayed[2], G. Holter[3]. [1]Dep.of Occupational Medicine, Haukeland University Hospital, Bergen, Norway; [2]Dep. of Clinical Chemistry. Haukeland University Hospital, Bergen, Norway; [3]Occupation. Health, Safety and Environmental Service, Haukeland University Hospital, Bergen, Norway. Email: tor.aasen@haukeland.no

In previous studies the prevalence of latex allergy in hospital workers has been found high (2,8-17%). We have recently published the results from a questionnaire study among 5087 employees at our hospital where 966 (23.8%) of 4068 who responded, reported symptoms related to the use of rubber gloves. This group was invited to an allergological follow-up study using clinical evaluation, skin prick tests and determination of specific IgE in serum. Of the 683 who attended only 45 had immunologically confirmed latex allergy. The estimated prevalence in the general hospital population was 0,9%. The clinical manifestations of latex allergy were as follows: Contact urticaria 33, allergic oral syndrome 7, asthma 9, conjunctivitis 26, rhinitis 20, anaphylaxis 1, no symptoms, but pos. IgE (sensitized) 6.

The spirometric values in subjects with proven latex allergy was within normal limits, FVC 95,3 ±10,4 and $FEV_1$ 95.6±12,7 (percent predicted± SD). 8 had a $FEV_1$ below 80% of predicted. PC20 was ≤ 8g/l in 12 subjects (no=45). Disability evaluations were performed according to Norwegian regulations. In 10 patients there was a significant persisting disability (≥15%).

This study showed a much lower prevalence of latex allergy than earlier studies, possibly due to a lower rate of sensitization. As in several other studies in this field the most important limitation is the cross-sectional design which is often biased by a healthy worker effect. Respiratory manifestations of latex allergy are important. Bronchial asthma is a cause of disability in some patients.

This Abstract is Funded by: None

**Respiratory Symptoms and Latex Allergen Content of Chair Dust in a Health Care Facility**

J.M. Cox-Ganser[1], C.Y. Rao[1], D.N. Weissman[1]. [1]CDC-National Institute for Occupational Safety and Health, Morgantown, WV. Email: jjc8@cdc.gov

**Rationale**: A hospital had a policy of no latex glove use for a year and asked for a survey for symptoms of latex sensitivity, latex glove use, and sampling for latex allergen. **Methods**: A questionnaire was offered to all 2099 current employees (participation 61%). Included were sections on upper and lower respiratory symptoms, latex sensitivity, age, gender, tenure, work history, and smoking history. Air, chair and floor dust samples from 23 sites were analyzed for latex allergen, fungal and bacterial contaminants and animal allergens. The data were linked to 600 (70%) participants. **Results**: Prevalences of latex-related complaints were: 3% latex allergy; 20% skin rash; 6% red, itchy, swollen hands or "water blisters"; and10% eye/nasal symptoms. Despite a year-long no latex policy, powdered latex gloves and powder-free latex gloves were used by 6% and 17% of participants. Housekeeping had a high level of latex glove use. Levels of latex allergen were: air, below level of detection (LOD); floor dust, 0.05 to 108 ng/m$^2$ (0.11 to 87 ng/mg); chair dust, 0.35 to 274 ng/chair (0.26 to 155 ng/mg). After controlling for personal, home and measured contaminants in dust, latex allergen in chair dust was positively associated (OR = 1.2, $p < 0.05$) with both work-related upper respiratory symptoms in the previous 4 weeks and lower respiratory symptoms in the last 12 months. **Conclusions**: Implementation of no-latex glove policies in health care facilities should be monitored in both healthcare and service employees. Even if latex in air is below LOD, exposures associated with health effects may occur from use of contaminated chairs. Chairs should be considered in cleanup of latex allergen reservoirs.

This Abstract is Funded by: CDC-NIOSH

**Primary Prevention of Occupational Asthma Caused by Natural Rubber Latex Allergy in German Acute Care Hospitals**

H. Allmers[1], J. Schmengler[2], C. Skudlik[1]. [1]Dept. of Dermatology, Environmental Medicine and Health Sciences, University of Osnabrueck, Osnabrueck, Germany; [2]Berufsgenossenschaft fuer Gesundheitsdienst und Wohlfahrtspflege, Delmenhorst, Delmenhorst, Germany. Email: hallmers@uos.de

BACKGROUND: The development of occupational asthma (OA) due to natural rubber latex (NRL) allergy is a risk for healthcare workers (HCWs). There are few published studies to suggest that intervention programmes to reduce exposure will lead to a primary prevention of sensitisation. OBJECTIVE: This study assesses the effects of intervention to reduce the incidence of NRL allergy in personnel working in acute care hospitals insured by the German statutory accident insurance company for healthcare workers (BGW) by switching to powder-free NRL gloves. METHODS: We analysed the annual numbers of reported suspected cases of NRL caused occupational allergies since 1996 and the amount and type of gloves purchased in German acute care hospitals since 1986. RESULTS: The purchase of powder-free NRL examination gloves exceeded powdered gloves for the first time in 1998. This only became true for powder-free NRL sterile gloves two years later, in 2000. The incidence of suspected occupational asthma cases caused by NRL rose until 1997 and has declined steadily since. By 2001 there was a 86% reduction of reported new cases of OA. A two year lag between the reduction of powder-free NRL examination gloves and the decline OA cases could be observed.CONCLUSIONS: Despite the effect of increased recognition of NRL allergies, education about NRL allergies in acute care hospitals combined with the introduction of powder free NRL gloves with reduced protein levels is associated with a decline in the number of suspected cases of occupational asthma caused by NRL in German acute care hospitals on a nationwide scale.

This Abstract is Funded by: None

**Validation of a Brief Questionnaire To Screen Asthmatic Outpatients for Asthma Symptoms That Are Worse in Relation To Work**

G. Friedman-Jimenez[1,2], T.M. Sturm[3], J. Reibman[1,2], D. Harrison[1,2], W.N. Rom[1,2], S. Zhang[1,2], Z. Berger[1], T. Matte[4]. [1]NYU School of Medicine, NY, NY; [2]Bellevue Hospital Ctr, NY, NY; [3]Mt. Sinai School of Medicine, NY, NY; [4]Ctr for Urban Epidemiologic Studies, NY, NY. Email: george.friedman.jimenez@nyu.edu

Rationale: Clinical evaluation of asthmatic patients with possible work-related asthma requires accurate identification of those whose asthma symptoms are worse in relation to work. Methods: A set of 10 candidate screening questions for work-related asthma symptoms was administered by interviewer to 74 asthma patients in an urban public hospital asthma clinic. Subsets of 2 or 3 of the screening questions were tested for accuracy in predicting a dichotomous physician classification of each patient as having work-related asthma symptoms or not. The physician classification was done blinded to the responses to the screening questions and was based on a thorough (1-2 hr) closed- and open-ended history focusing on relationships between asthma symptoms and work, for current and multiple past jobs. Results: The best set of 3 screening questions predicted the physician classification with 94% specificity (95% CI 73%-99.9%) and 93% sensitivity (95% CI 83%-98%), corresponding to Likelihood Ratios Positive and Negative of 15 and 0.08, respectively. Nine (43%; 95% CI 22%-66%) of the 21 patients working at the time of interview reported work-related asthma symptoms in their current job. Conclusions: A brief screening questionnaire appears to be practical and accurate enough to screen public hospital asthmatic outpatients for work-related asthma symptoms. A history of work-related asthma symptoms was common. Estimates of the prevalence of work-related asthma symptoms and operating characteristics of the screening questions need to be replicated in other populations.

This Abstract is Funded by: NIH: NHLBI 5 R01 HL62621; NIEHS ES00260; NCRR M01 RR00096

**Impact of Work in Industry and Occupation on Prevalence of Chronic Obstructive Pulmonary Disease in the US Population**

E. Hnizdo[1], H. Glindmeyer[2], M. Attfield[1]. [1]National Institute for Occupational Safety and Health, Morgantown, WV; [2]Tulane University Medical Center, New Orleans, LA. Email: EHnizdo@cdc.gov

RATIONALE. In a previous study of the third National Health and Nutrition Examination Survey (NHANES III) data, we identified industries associated with increased risk of COPD defined by GOLD (Global Initiative for COPD) Stage II criteria. In this investigation we evaluated the impact of work in at-risk industries on the overall US prevalence of COPD. We also evaluated the potential of the GOLD criteria and the NHANES III data to develop expected prevalences of COPD for detection of excess prevalence of COPD among worker populations. METHODS: We analyzed data from the NHANES III study using SUDAAN to estimate US age-specific prevalences of COPD, adjusted for smoking and other factors. Next, we compared overall US age-specific prevalences including and excluding at-risk industries. Finally, we compared the age-specific prevalences of COPD in isocyanate spray-painters to these US estimates. RESULTS. The estimated US age-specific prevalences of COPD were significantly increased by inclusion of the at-risk industries. At age 50, the increase was comparable to the prevalence of COPD found in never smokers (5%) and was approximately 30% of the prevalence of 15% found in smokers. The US age-specific prevalence of COPD based on GOLD Stage 0 criteria appeared useful for identifying worker populations at increased risk of COPD. CONCLUSION. Employment in at-risk industries impacted the US prevalence of COPD estimated from NHANES III data. This effect should be considered when estimating prevalences of COPD for comparison with prevalences in worker populations.

This Abstract is Funded by: None

**The Follow-Up Characteristics of Individuals Diagnosed with Work-Related Asthma (WRA)**

J. Roberts[1], S. Janson[1], M. Gillen[1], R. Harrison[1,2]. [1]University of California San Francisco, San Francisco, CA; [2]California Department of Health Services, Oakland, CA.

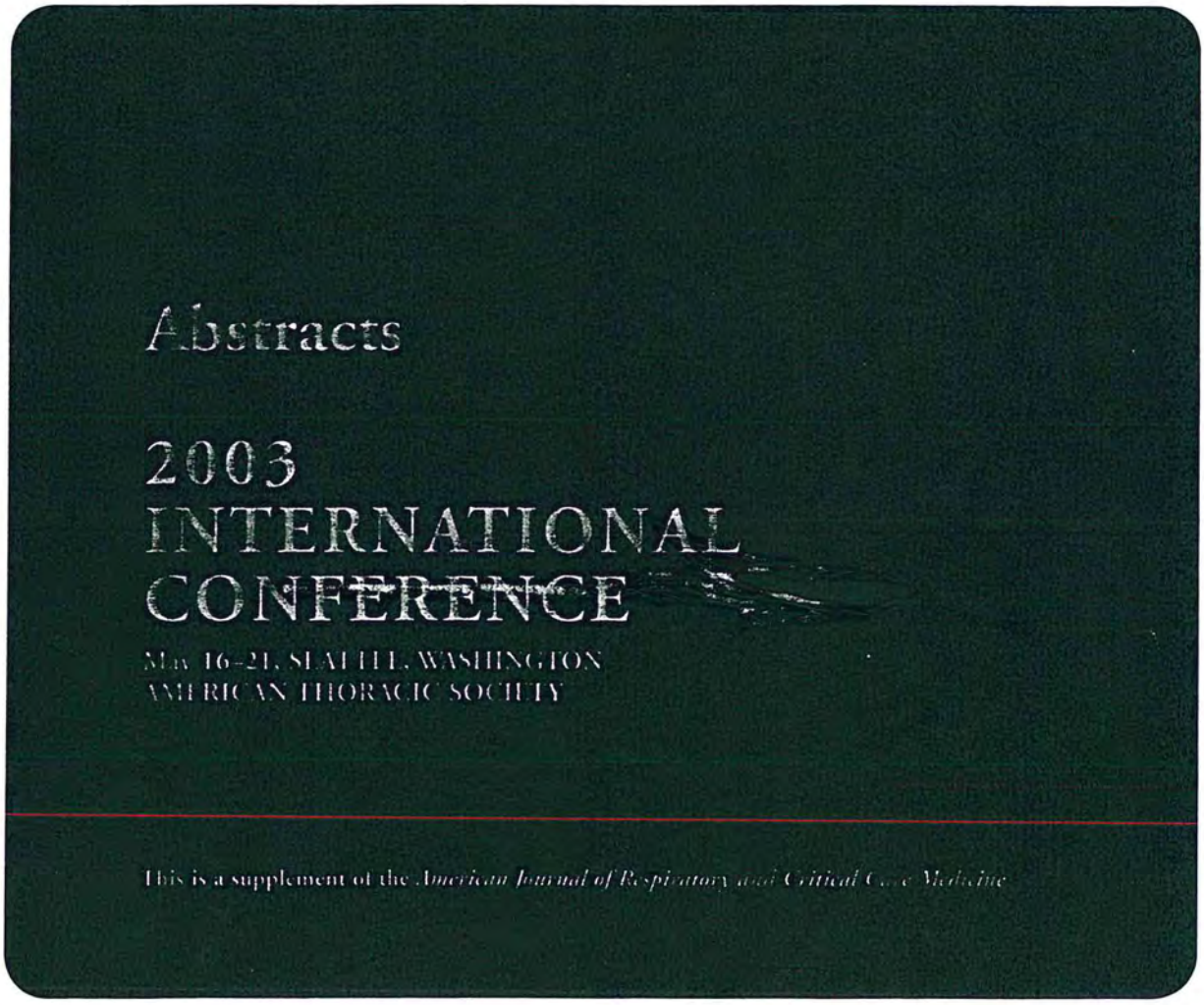
RATIONALE: The prevalence of asthma in working-age individuals continues to rise each year. Work-Related Asthma (WRA) causes significant loss of productivity and costs employers millions of dollars annually. The California Department of Health Services conducts statewide surveillance of WRA to document and classify each work-related exposure, but to date had not conducted a follow-up study of health care after diagnosis. DESIGN: In this study, we recruited subjects with WRA from Doctors First Reports (DFR) in order to investigate follow-up care. Using a cross-sectional, descriptive comparative design, we interviewed individuals and audited available medical records to explore the workers and providers perception of care. Two cohorts of workers were compared, those evaluated in a large HMO system (n=79) and workers followed in private, non-HMO practices (n=76). The telephone interview asked about type of provider seen, tests ordered, treatment recommendations made, and the impact asthma had on the ability to work. RESULTS: HMO WRA patients were significantly more likely than non-HMO WRA patients to see occupational medicine specialists (p=0.004), have pulmonary function testing (p=0.049), and receive information about job changes (p=0.037) during the initial treatment phase. 28 (24%) of those patients currently working (n =118) stated that they had missed some complete workdays due to asthma in the past six months. The overall follow-up care of WRA patients was not consistent with published treatment standards. CONCLUSIONS: The findings indicate the assessment and management of WRA varies by the health care system in which treatment is delivered in California. Medical care did not closely follow recommendations made by WRA practice guidelines and needs further study.

This Abstract is Funded by: NINR #5T32NR07088

AMERICAN JOURNAL OF

# Respiratory and Critical Care Medicine

Volume 167 • Number 7 • April 2003




AN OFFICIAL JOURNAL OF THE AMERICAN THORACIC SOCIETY