

378 Patient-physician Communication About Asthma and Work, 2020–2021: An Update



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RATIONALE: A *Healthy People 2020* respiratory disease RD-7.8 objective sought to increase the proportion of adults with current asthma who have discussed with a doctor or other health professional whether their asthma was work related from 14.4% (2010 baseline) to 17.9%.

METHODS: To assess patient-physician communication about asthma and work, data from the 2020–2021 Behavioral Risk Factor Surveillance System Asthma Call-back Survey collected from 30 states, for persons aged ≥ 18 years were examined. Analyses were done using weights to account for the complex survey design of the data.

RESULTS: Among an estimated 15.4 million ever-employed adults with current asthma, 12.0% were ever told by a health professional that their asthma was related to any job they ever had and 15.9% ever told a health professional that their asthma was related to any job they ever had. When responses to these two questions were combined, the proportion of those who communicated with a health professional about asthma and work was 18.2% (95% confidence interval: 16.7%–19.8%).

CONCLUSIONS: The results suggest that the *Healthy People 2020* respiratory disease objective has been met. However, a large proportion of ever-employed adults with current asthma did not communicate with their clinician about the role of workplace exposures in the causation or exacerbation of asthma indicating that efforts to increase this dialogue should continue.

379 Mite cultures integrity and culture evolution by genetic amplifications



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RATIONALE: Mites are mass-cultured to manufacture allergen extracts for allergy diagnostics and immunotherapy. An exhaustive quality control is mandatory to avoid potential contaminations among different species and harvest mite production reaching optimal expansion.

This study focused on designing a new strategy using qRT-PCR to evaluate:
1. The integrity of pharmaceutical cultures by specie-specific amplifications.
2. The progression/growth of mite cultures.

METHODS: Mite cultures were produced under GMP conditions. DNA from individual cultures of 6 different species was isolated. Six pair of primers and probes were designed to specifically amplify DNA from each specie by qRT-PCR.

The growth of five *Dermatophagoides pteronyssinus* cultures was studied obtaining samples at days 1, 15 and 30. DNA was isolated and genetic amplifications by qRT-PCR were performed. Cq values were correlated with mite population determined by visual inspection.

RESULTS: We demonstrated that each pair of primers specifically amplified DNA from each mite species: *D. pteronyssinus*, *D. farinae*, *Lepidoglyphus destructor*, *Glycyphagus domesticus*, *Blomia tropicalis* and *Acarus siro*. Non-specific amplifications across any mite species were observed.

D. pteronyssinus cultures had fast and unrelenting evolution. There was an inversely proportional relationship between Cq obtained in qRT-PCR in and mite density.

CONCLUSIONS: A genetic approach to analyse the integrity of 6 different mite species was established. Moreover, this experimental approach is useful to monitor the progression of *D. pteronyssinus* density. This technology seems to be a potent tool to be implemented as a quality control parameter in pharmaceutical industry.

380 Vulnerability and Adaptation of allergic patients facing climate change in Lebanon



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RATIONALE: Lebanon is a Mediterranean country with increasing air pollutants because of multiple political, economic and electricity crises. Geiger-Köppen climate classification divides Lebanon in two major zones: a hot and humid coastal plain (Zone 1), a dryer and cooler North and Inland (Zone 2).

METHODS: We select all patients presenting to a tertiary allergy clinic who performed a Molecular allergology diagnostic test from 2019 till mid 2024. Pearson's chi-squared, T-student tests and logistic regression model are performed to evaluate Allergy sensitization, Clinical presentation and possible Correlation with the climate zones.

RESULTS: The sample includes 118 patients; 48 females (40.7%) with a mean age of 27 years, a mean total IgE of 510 UI/ml. Respiratory sensitizations are mainly to dust mites (Der p1, Der f1) 46.6%, tree pollen 39.8% (Cup a1 and ole a1), wall pellitory (r Parj 2) 25.4%, and molds (alt a1, r asp f1) 12.7%. The respiratory manifestations were higher in zone 1 compare to zone 2 ($p=0.015$). Sensitization to tree nuts is the highest (33.1%) then fruits (21.2%) and shellfish (17.8%), showing no difference by climate zone. The logistic regression shows a potential association between tree pollen in zone 1 ($p=0.0786$) and molds in zone 2 ($p=0.0794$).

CONCLUSIONS: Compare to previous studies, there is increase sensitization to trees and molds in the respective climate zones but not to house dust mites and wall pellitory. This may lead to more serious disease in particular because fungal spores and pollen fragments are found in fine particulate matter (PM_{2.5}) that exceed the acceptable limits in Lebanon.

381 Report of smokers in the home and in-home PM_{2.5} and air nicotine concentrations in urban homes with children with asthma



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RATIONALE: Exposure to particulate matter 2.5 micrometers and smaller (PM_{2.5}) has been linked to asthma morbidity, especially among urban children with asthma. Cigarette smoke is a major source of PM_{2.5} in urban homes.

METHODS: Caregivers of 155 children with asthma enrolled in an environmental control strategy clinical trial were asked questions about their current smoking habits and about the number of smokers in the home. In-home PM_{2.5} and air nicotine were measured over a 3-day period in the child's bedroom using integrated air sampling.

RESULTS: At the baseline home visit, 33 caregivers reported being active smokers. Caregiver report of smoking was associated with a higher mean PM_{2.5} concentration and a higher air nicotine concentration in the home [PM_{2.5}: 49 mcg/m³ (SD 43) vs. 31 mcg/m³ (33), difference 18 mcg/m³, $p=0.01$; and air nicotine: 0.95 mcg/m³ (1.5) vs. 0.15 mcg/m³ (0.09), difference 0.80 mcg/m³, $p<0.001$]. Caregivers reported having a smoker in 66 homes (0, 1, 2, 3+ smokers in the home). PM_{2.5} and air nicotine concentrations increased as the number of smokers in the home increased [PM_{2.5}: 14 mcg/m³ (8 mcg/m³ - 20 mcg/m³), $p<0.001$; and air nicotine: 0.40 mcg/m³ (0.25 mcg/m³ - 0.55 mcg/m³), $p<0.001$].

CONCLUSIONS: In urban homes with children with asthma, report of caregiver smoking significantly increased in-home PM_{2.5} and air nicotine concentrations. Additionally, for each reported smoker in the home, in-home PM_{2.5} and air nicotine concentrations increased significantly.

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