Introduction Occupational asthma (OA), obstructive chronic bronchopneumonia (OCBP) and pneumoconiosis are occupational respiratory diseases having important impact on morbidity and mortality. Some population studies show that 15% of the cases of asthma with the adults can be attributed to work environment. The aims of this study is to evaluate the respiratory function especially the occupational asthma of workers in a plastic bag manufacturing factory in Togo.

Material and methods By a cross sectional study, we included 182 workers in the sample. They filled a questionnaire and the workers with asthma complains was submitted to spirometry test.

Results The mean age of subjects was $37,13 \pm 5,71$ years with a male predominance (99,5%). The mean of the work experience was $7,66 \pm 2,88$ years. 1,1% of workers were smokers. Rhinitis and conjunctivitis were reported with 79,7%. The frequency of occupational rhinitis was 62,6%. Subjects that presented asthma complains were 34,1%. In 25,8% of cases asthma complains are associated to the work. The abnormal pulmonary function was overlooked by reversible smalls airways pattern (6,6%) and reversible obstructive pattern (4,9%). Spirometry was compatible with asthma in 11,5% of cases. The prevalence of occupational asthma was 7,7%. Occupational asthma only concerns the posts of Thermo-welding and Extrusion. All the workers in these posts did not use respiratory protection.

Conclusion Occupational asthma is a reality in a plastic bag manufacturing factory in Togo. This fact needs preventives and correctives actions to avoid that disease.

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A FREELY-AVAILABLE TUBERCULOSIS SCREENING TOOL FOR ADULT WORKERS EXPOSED TO RESPIRABLE CRYSTALLINE SILICA

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Introduction Exposure to respirable crystalline silica is known to increase the risk of progression to active tuberculosis (TB) disease in those who have latent TB infection. Both latent TB infection and active TB disease are relevant components of screening examinations in silica-exposed workers.

Methods Health care providers screening silica-exposed workers for TB must generally:

- identify for further evaluation and treatment any employees with suspected active TB disease
- adhere to safety and health regulatory requirements, when applicable
- even when regulations do not require screening, exercise sound screening practices in workers who stand to benefit from medical evaluations
- be familiar with current peer-reviewed publications; specialty society recommendations; national and state public health policy approaches
- coordinate with local approaches to TB screening

- incorporate both occupational and non-occupational health indications into screening decisions.

Using a publicly-funded, transparent, and democratic process, the Department of Labour and Industries has developed a TB risk assessment and testing algorithm for adult workers exposed to respirable crystalline silica.

The screening tool integrates these varied needs and resources into a cohesive document for use at the point of health care delivery.

Result The tool is a clinical adjunct that helps health care providers make two key decisions when evaluating patients with exposure to respirable crystalline silica:

1. Which workers should undergo a comprehensive evaluation for active tuberculosis disease?
2. Which workers should receive testing for latent TB infection?

Discussion Widespread availability of the risk assessment and testing algorithm is assured through direct inclusion in Washington State regulatory documents. The tool integrates medical content and public policy for clinicians performing the TB screening in silica-exposed workers through a single, accessible form. As a freely-available clinical aid, it is available to clinicians performing TB screening in silica-exposed workers throughout the United States, and worldwide.

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BREATH TEST FOR PNEUMOCONIOSIS USING AN ELECTRONIC NOSE: A CASE-CONTROL STUDY

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Introduction Current medical surveillance program has flaw that may result in poor detection of early pneumoconiosis around the world. Breath analyses have attracted substantial attention in the screening of occupational environmental lung disease. Pneumoconiosis could generate specific volatile organic compounds (VOCs) that may constitute a specific breath print for diagnosis. The objective of this study was to develop a breath test for pneumoconiosis by analysing VOCs using sensor array technique.

Methods We conducted a case-control study and enrolled study subjects from stone workers in Hualien between October 2016 and November 2016. One litter of breath air was collected after five minutes of tidal breathing through a non-rebreathing valve with inspiratory VOC-filter, and storage by a Tedlar bag. The air was analysed by a 32 nanocomposite sensor array electronic nose within 30 min. Using the ILO/ICRP profusion category $\geq 1/1$ in chest X-ray as the reference standard, we assessed the diagnostic accuracy of the breath test. Data were randomly split into 80% for model building and 20% for validation.

Result After excluding three subjects with poorly controlled diabetes mellitus with fasting serum glucose level >200 mg/dl and one subjects of asthma under medication, a total of 98 subjected were used in final analysis that included 34 cases of pneumoconiosis and 64 healthy controls. By linear