Introduction: Currently chrysotile asbestos is widely used in various industries, which determines the relevance of research aimed at the prevention of asbestos-related diseases. It is promising to determine the role of specific genes in the genetic predisposition to the disease.
Material and Methods: There were examined employees of JSC "Uralasbest" with an established diagnosis of asbestosis (n=94) and without lung diseases (n=200), dust exposure doses were calculated taking into account the percentage of time spent at the workplace during the shift for the entire time of work. SNPs IL1b (rs16944), IL4 (rs2243250), IL6 (rs1800795), TNFα (rs1800629), SOD2 (rs4880), GSTP1 (rs1610011), CAT (rs1001179) was detected. The research has been approved by the ethics committee of IRIOH. Data were analysed using Statistica.
Results: SNPs of the IL1b gene (OR=2.457, 95% CI=1.232-4.899) and the SOD2 gene (OR=1.705, 95% CI=1.055-2.756) were associated with the development of asbestosis. SNP of the IL4 gene was associated with asbestosis at lower values of dust exposure doses (OR=2.185, 95% CI=1.057-4.514). Associations of the IL4 and IL6 genes polymorphism with a more severe course of asbestosis, of the GSTP1 gene polymorphism with pleural lesions in asbestosis were established ($p<0.05$).
Conclusions: Genetic polymorphism of cytokines and antioxidant enzymes, which are directly involved in the pathogenetic mechanisms of asbestosis, contribute to the formation of a genetic predisposition to the development and severe course of asbestosis. Determination of these SNPs can be used to identify risk groups of asbestosis among workers.

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Preventing the global dust storm: key insights from regulating silica in a connected age

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Introduction: In 2015, WorkSafe Victoria received its first worker's compensation claims for silicosis in a stonemason which has since risen rapidly. The alarming re-emergence of this preventable disease began with the importation of engineered stone which was not matched by sufficient knowledge of its hazards and risk. This was exacerbated by the popularity of this product in the rapidly growing residential construction industry. Equally, the premature declaration of victory against silicosis and lack of international surveillance meant that its re-emergence was not detected until too late.
Material and Methods: Initial activities focused on understanding the scale of the issue. WorkSafe Victoria funded a free health assessment program for current and past stonemason's which diagnosed 169 workers with Silicosis. WorkSafe Victoria commissioned air monitoring at 20 stonemason workplaces and 270 stonemason workplaces were visited and 318 silica-related notices were issued for noncompliance with OHS legislation and regulations.
Results: This initial information informed WorkSafe Victoria to undertake further activities across the entire spectrum of the issue from the supply of engineered stone to medical professionals involved in diagnosing Silicosis in workers. Key achievements by WorkSafe Victoria have been the partnership with The Alfred for the first dedicated public hospital occupational respiratory clinic and the proposal of Crystalline Silica Regulations including a licencing scheme for engineered stone.
Conclusions: Overcoming this challenge has required an innovative approach in occupational disease prevention,

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Respiratory symptoms of workers in small roastery: Implementation of surveillance system

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Introduction: Flavors such as diacetyl are known to damage the lungs. Concerns have been raised about other types of flavors or coffee roasting workers, but evidence and experience are still lacking.
Materials and Methods: A 30-year-old male worker was referred to an occupational health clinic through the surveillance center for occupational poisoning prevention. He has been working in a small coffee roastery. Chief complaint was cough for a year. We found four other male workers with similar symptoms such as cough, chest tightness, sore throat or irritation, in different coffee roastery. Diagnostic tests were performed, including chest X-rays, chest high-resolution computed tomography (HRCT) and pulmonary function tests. We also conducted a survey of the workplace.
Results: All five workers were young male (range of age, 29 to 38). Their coffee roasting experience ranged from 11 months to 8 years. Common symptoms included cough, irritations of the nose and throat and chest tightness.
They were exposed to dust from coffee beans and packing materials and various volatile organic compounds while roasting coffee beans. There were no specific findings on chest HRCT and pulmonary function tests, but symptoms were much relieved after installing the local ventilators.
Conclusions: Workers may be exposed to various kinds of hazardous materials while roasting coffee beans. These substances may cause respiratory damage, but their health effects are not well known. It is important to establish occupational health surveillance system for early detection and prevention of occupational diseases.

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The Correlation between Occupational Pesticide Exposure with The Incidence of COPD and Chronic Bronchitis: a Systematic Review and Meta-Analysis

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