47

Silicosis Among Artificial Stone Fabrication Workers: A New Face of an Old Threat

Duygu Seyhan Erdoğan[1], Fatma Bozdağ[1], Fatıma Betül Topcu[1], Volkan Medeni[1], Sultan Pınar Çetİntepe[1], Mustafa Necmi İlhan[1]
[1]Department of Occupational Medicine, Gazi University, Ankara, Türkiye
Presenting author: Fatma Bozdağ (duyguseyhan@yahoo.com)
Journal of Occupational Medicine and Toxicology 2026, **21(Suppl 1):**47

Keywords: *Occupational health, Silicosis, Artificial stone*

Abstract

In Türkiye, silicosis—historically recognized as a disease affecting denim sandblasting workers—is a preventable yet fatal occupational disease. Denim sandblasting was introduced in the 1980s and became widespread in the 1990s due to the popularity of distressed and bleached jeans. Workers, often employed in small, poorly ventilated workshops without adequate personal protective equipment, began to experience progressive dyspnea. Through clinicians' investigative efforts and detailed occupational histories, the diagnosis of silicosis was eventually established.

As a result of advocacy by affected workers and civil society organizations, the Denim Sandblasting Workers' Solidarity Committee was formed, followed by the launch of the Clean Clothes Campaign. These initiatives led to significant regulatory changes: denim sandblasting was banned in Türkiye in 2009, silicosis was formally recognized as an occupational disease, and affected workers were granted access to free medical treatment. Consequently, a marked reduction in the incidence of denim sandblasting–related silicosis was achieved.

With technological advancements, the production and processing of artificial stone have emerged as a new industrial practice worldwide and in Türkiye. Artificial stone, widely used for kitchen and bathroom countertops, contains more than 90% crystalline silica—significantly higher than that found in most natural stones. During cutting, grinding, and shaping processes, high concentrations of respirable silica dust are generated, leading to accelerated and acute forms of silicosis. This has resulted in the re-emergence of silicosis as a major occupational health concern, even in high-income countries.

Türkiye is among the countries where artificial stone is commonly used, and recent studies evaluating patients diagnosed with silicosis have emphasized this emerging risk. In a study conducted in Istanbul, Türkiye, between January 2021 and 2025, 15 patients were diagnosed with artificial stone–related silicosis. Obtaining detailed occupational histories—beyond job titles and including specific tasks performed—plays a crucial role in improving diagnostic accuracy. However, given the absence of an effective curative treatment, prevention remains the cornerstone of disease control.

Restricting or banning the use of artificial stone, analogous to the successful campaign against denim sandblasting, represents a critical preventive strategy. The recent prohibition of artificial stone in Australia provides a compelling precedent and may serve as an evidence-based example to draw the attention of policymakers toward urgent regulatory action.

Acknowledgments: None.

48

Unrecognized Lessons: Early European Insights into Reproductive Toxicity from Workplace Exposures

Michele Augusto Riva[1,2], Michael Belingheri[1,2], Maria Emilia Paladino[1,2]
[1]School of Medicine and Surgery, University of Milano-Bicocca, Monza, Italy, [2]Department of Occupational Health, Fondazione IRCCS San Gerardo dei Tintori, Monza, Italy
Presenting author: Michele Augusto Riva (michele.riva@unimib.it)
Journal of Occupational Medicine and Toxicology 2026, **21(Suppl 1):**48

Keywords: *Reproductive toxicity, Occupational exposure, Historical case studies, Lead poisoning, History*

Abstract

Reproductive toxicants represent a long-standing yet underestimated issue in the history of occupational health. One of the earliest reports came from the French clinician Constantin Paul (1833–1896), who reported miscarriages, stillbirths, and infant mortality among lead-exposed female workers. In 1861, he documented that 91 of 141 pregnancies in lead-exposed workers resulted in fetal death. These findings were soon supported by studies on both maternal and paternal saturnism and fetal outcomes, particularly those by the Italian gynecologist Alessandro Cuzzi (1849–1895) in Pavia. Reproductive risks were also discussed at the First Italian Congress of Occupational Medicine, held in Palermo in 1907, which highlighted concerns that could have guided earlier preventive strategies. In Italy, as elsewhere in Europe, these case studies were largely ignored in policymaking, partly due to economic pressures and persistent gender biases. In 1925, important reflections were advanced by Livia Lollini (b. 1889), assistant physician to Luigi Devoto (1864 –1936) at the Clinica del Lavoro in Milan, who emphasized the need for medical surveillance of women workers. The thalidomide disaster (1957–1961) marked a dramatic turning point, exposing the inadequacy of toxicological testing and the underestimation of fetal susceptibility to chemical agents – including those encountered in occupational settings. Only from the 1960s onward did the FDA, WHO, and later OSHA and OECD establish structured guidelines for fertility, embryotoxicity, and teratogenicity testing. International harmonization followed in the 1990s and 2000s, and today reproductive toxicants are formally recognized in European regulations such as REACH and Directive 2022/431. Revisiting these historical case studies shows that relevant evidence on reproductive risks had emerged much earlier, yet the potential value of early clinical observations was not fully exploited to advance prevention. Understanding why this evidence was overlooked can inform contemporary regulatory frameworks and strengthen current strategies for safeguarding reproductive health in the workplace.

Publisher's note