

This week [Reuters reported](#) what are billed as the first documented clinical cases of human health effects from exposure to nanoparticles. Seven young women, two of whom died, suffered severe permanent lung damage following months of largely unprotected exposure to fumes and smoke containing nanoparticles in spray painting operation in China. The women all worked in the same small, windowless room without windows or ventilation. Their lung tissues and fluids found in the lungs contained the same type of nanoparticles as used in materials at the factory. In an article published in [European Respiratory Journal](#), Chinese researchers concluded that the patients' illness appeared to be a "nanomaterial-related disease" based upon the presence of the nanomaterials in the lung tissue and fluids, the similarity of the symptoms to the outcomes of prior animal studies, and the low toxicity of the other conventional chemicals used in the factory's process.

The study does not conclusively establish a causal relationship between the nanoparticles found in the lungs and the patients' lung disease. Skeptics already abound, some arguing that other chemicals in the process likely caused the illnesses, while others characterize it more of a lesson in the importance of effective industrial hygiene than a warning about the hazards of nanomaterials. Consider what Clayton Teague, head of the National Nanotechnology Coordination Office at the White House Office of Science and Technology Policy, had to say in the Reuters piece: "From what we know, this tragedy could have been avoided by proper industrial hygiene techniques." He was right to caveat his statement; the fact is that we don't actually know very much about how these particles act in the workplace environment or in the human body. My guess is that we will see more of these unfortunate outcomes over the next few years as the pervasive use of nanomaterials outstrips our limited knowledge of nanotoxicity.