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RESPIRATORY FUNCTION AND EFFECTS OF SO₂: 4-YEAR FOLLOW UP OF MIYAKEJIMA RESIDENTS AFTER RETURNING TO THE ISLAND

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Objectives Mount Oyama on Miyakejima Island, Tokyo, erupted in June, 2000. All Miyake village citizens were forced to evacuate from the island in September, 2000, due to continuous eruptions and emissions of unsafe amounts of volcanic gas, mainly SO₂. From February, 2005, residents started to return to the island despite the fact that volcanic gas was still being emitted. This study examines changes in respiratory function over 4 years from autumn 2004 to November 2008.

Methods The study population comprised 276 adults (122 male, 154 female) who each underwent an examination for respiratory health just before returning to the island (2004) and another examination 4 years after their return (2008). Exposure was approximated by monitoring data across 7 monitoring stations. Mean SO₂ concentration from February 2005 to November 2008 was 0.022 ppm. Effects were evaluated by spirometry.

Results Study subjects showed no reduction in lung function between 2004 and 2008.

Conclusions No change was observed in respiratory function in adult Miyakejima residents due to 4 years of residence in an environment with an average SO₂ concentration of 0.022 ppm. However, to truly shed light on the effects of SO₂ on respiratory function in adults, it is important to continue this study and conduct further analysis.