

## **Do Asbestos-Induced Pleural Plaques Cause Lung Function Deficits?**

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While there is general agreement that pleural plaques are biomarkers of asbestos exposure, there is debate in the scientific community over whether or not pleural plaques cause lung function deficits. Many of the studies that have addressed this were subject to certain limitations. In several studies, pleural plaques were diagnosed *via* radiography, which is less accurate than high resolution computed tomography (HRCT) and can lead to misdiagnoses. Some studies also reported lung function changes in subjects that had lung abnormalities in addition to pleural plaques, so that the contribution of pleural plaques to deficits was unknown. To eliminate these sources of uncertainty, we conducted the first comprehensive analysis of the associations between pleural plaques and lung function based on epidemiology studies in which 1) pleural plaques were diagnosed by HRCT and 2) individuals were identified with pleural plaques and no other lung abnormalities. We identified and analyzed 16 relevant studies. We looked for patterns within and across studies and examined whether associations were reproducible. Only three of the 16 studies reported statistically significant associations between pleural plaques and some measure of lung function. Among these three studies, the lung function parameters were not consistent, suggesting that the associations were not likely causal. In addition, mean asbestos exposures in all three studies were higher in the subjects with pleural plaques than in the subjects without. This suggests that if the effects were not due to chance, the asbestos exposure itself, rather than pleural plaques, may have been responsible for observed lung function deficits. Taken as a whole, the direction of effect (*i.e.*, lung function deficit vs. improvement) varied among studies, indicating the absence of even subtle effects and that the lack of effect noted in the majority of studies was not a result of low statistical power. We conclude that there is no reliable association between the presence of pleural plaques in asbestos-exposed populations and lung function deficits.