

Authors' response

We thank Hochegger, Irion and Marchiorio¹ their interest in our manuscript.² We agree that cumulative radiation dose exposures from chest computed tomography (CT) could be a limiting factor for the use of frequent scans in children with cystic fibrosis, although continuous advances in CT technology are allowing comprehensive assessments of lung structure with increasingly smaller radiation exposures.³ The authors suggest that lung magnetic resonance imaging (MRI) may be an emerging modality with improving temporal and spatial resolution, stating that previous studies demonstrate that MRI is comparable with CT for the detection of structural changes. In fact, these studies were conducted in older children and adults with established structural disease,^{4 5} rather than in infants and young children in whom the earliest changes in lung structure occur. As the earliest structural changes due to cystic fibrosis appear to develop in the peripheral airways,⁶ a region of the lung that is poorly characterised by lung MRI, both by direct assessment of small airways^{7 8} and indirectly by air trapping,⁹ the relatively poor ability of lung MRI to accurately assess the peripheral airways is likely to limit its use for assessing airways disease in young children or in mild disease. While lung MRI has an additional ability to assess functional changes, the importance of these in early childhood is not clear. Therefore, at present, the role of lung MRI in assessing mild structural changes due to cystic fibrosis seen in early childhood is uncertain and until lung MRI is established as a feasible and appropriate assessment tool for early structural lung disease, chest CT remains the gold standard in this population, particularly when acknowledging the reducing

radiation exposures afforded by technological advances.

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