and does not necessarily correlate with objective measures of lung function, which indicates the multi-faceted nature of the syndrome. Further quantitative and qualitative analysis of HPX-MRI data and its correlations with perfusion MRI, markers of coagulopathy and endotheliopathy, and breathing pattern assessment in our EXPLAIN cohort may provide insight into the different mechanisms driving symptoms in NHLC.

**Aims** To assess small airways function in previously hospitalised patients with long COVID-19 syndrome.

**Methods** 33 patients (mean±SD, 53±11 years) were recruited from June 2021 to August 2022, 149±90 days following hospital discharge. Pulmonary function tests, including spirometry, static lung volumes using the multiple breath nitrogen washout technique, and lung diffusion capacity for carbon monoxide were performed. Small airway function was evaluated by measuring closing volume using the single breath nitrogen washout technique (SBN2W).

**Results** BMI was 28.1±5.4% predicted, Forced Expiratory Volume at the 1st second (FEV₁) was 100±19% predicted, Total Lung Capacity (TLC) was 94±27% predicted and diffusion capacity for carbon monoxide (DLco) was 78±23% predicted. None of the patients exhibited an obstructive pattern in spirometry. Forced mid-Expiratory Flow (FEF25–75) was 95±33% pred., Closing Capacity (CC) was 115±28% pred. and Functional Residual Capacity-Closing Capacity (FRC-CC) was 0.4±0.5 litres. Eight patients (24%) presented tidal airway closure, assessed via FRC-CC (-0.140±0.090 litres). Three ±0.5 litres. Eight patients (24%) presented tidal airway closure.

**Conclusions** Patients with long COVID-19 syndrome, developed following hospitalisation, present with small airways dysfunction and tidal airway closure.

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**Background** Reticulation, ground glass opacities and post-infection bronchiectasis are present three months following recovery in patients recovering from COVID-19 infection and are associated with the severity of acute disease, while scarce data exist on small airways impairment.

**Aims** To assess small airways function in previously hospitalised patients with long COVID-19 syndrome.

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**Conclusions** Patients with long COVID-19 syndrome, developed following hospitalisation, present with small airways dysfunction and tidal airway closure.

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**Introduction** Primary Ciliary Dyskinesia (PCD) is a rare genetic disease, affecting ~400 children in England. Ciliary structural defects cause abnormal function, impairing mucociliary clearance. Mucus build-up and infection cause lung disease, including bronchiectasis. Little is known about disease progression in PCD. CT imaging identifies structural lung damage and alongside lung function could be used to measure disease severity. This study compared CT changes over time to identify disease progression in children with PCD linked to spirometry, infection, and ciliary defect.

**Methods** 278 children with confirmed PCD diagnosis were screened. Inclusion criteria were referrals between 2013–2022 and having two sequential lung CT scans according to an internal hospital guideline, ensuring children were scanned at similar ages. CTs were analysed using the Brody score. Demographic, anthropometric, ciliary defect, lung function, infection and treatment data were collected for patients using hospital records.

**Results** 61 children (30 male) had two CTs, mean age at first, 9.1 years, and second, 14.8 years. There was no significant change over time in total CT lung scores, median (IQR) 16 (6–26) and 14 (7.9–24.7), or lung function, mean ppFEV₁ 72.9% and 73.4%, ppFVC 81.1% and 83.1%. Dependent lobes scored higher, as expected. The sub-category score for bronchiectasis did increase over time, however 3 of the other sub-categories improved (mucus plugging, peribronchial thickening, parenchymal changes). CT score and lung function showed significant negative correlation at both CT time points (r²=0.25, p<0.0001 at second). Increased CT scores were associated with increased chronic infections, at second CT. CT changes, anthropometrics and lung function did not differ significantly between ciliary defects.

**Conclusion** This large, longitudinal CT study in PCD showed no changes in total CT score or lung function in children aged 5 and over, contrasting with sparse and inconclusive evidence in the literature. This was a single-centre study, using a CT score derived from cystic fibrosis, which may have introduced bias and scoring limitations resulting in participants showing less progressed disease. Our findings suggest CT is a useful modality, alongside spirometry, to monitor disease progression. However, larger multicentre longitudinal studies, using a PCD-specific score, are required to validate this claim.