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Title: Lung function in different ethnic groups in children with primary ciliary dyskinesia (PCD)

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Body: Background: Few studies describe the progression of lung function (LF) in children with PCD but little is known about the evolution in different ethnic groups. Aims and objectives: We investigated whether any differences existed in LF in children with PCD from different ethnic backgrounds. Methods: This is an observational, single-tertiary-centre study describing the progression of FEV_1, FVC, and $MMEF_{25-75}$ over a period of 9 years in children with PCD. Data was collected from a database and patient records. Lung function was described as increasing, stable or decreasing based on 10% change over time. Results: 15 boys and 8 girls- 8 Caucasians (C) and 15 Asians/Africans (A) with PCD were followed up. Out of 18 children who could perform LF, 2 Asian siblings with ciliary aplasia were excluded. 95 LF measurements (39 C / 56 A) were reliably evaluated from age seven. The baseline mean (range) FEV_1 % predicted was higher in C-group at 116 (112-120) than in the A-group 72 (64-100) at age 7. By 14 years, this dropped more than 10% in the C-group [78 (60-95)] and was lower but remained steady in the A-group [74 (64-78)]. FVC followed a similar trend. The $MMEF_{25-75}$ values dropped steadily to about 50% in both groups by 14 years. Conclusions: Our study suggests differences in the progression of lung function between ethnic groups in children with PCD. The small airways function steadily declines in all patients. By adolescence lung function is comparable across the ethnic groups. Larger prospective study is needed to evaluate whether these differences are related to any genetic, environmental or cultural factors.