

**Table 1:** Demographics of the PCD, respiratory control and healthy participants.

	PCD	Non-PCD	
		Respiratory Control	Healthy
Number of subjects	15	9	10
Male n (%)	10 (66.7)	5 (55.6)	3 (30)
Median age in years (IQR)	16.85 (19.89)	2.9 (4.87)	32.55 (14.96)
Pulmonary symptoms n (%)	15 (100)	8 (88.9)	0
Rhinosinusitis n (%)	14 (93.3)	7 (77.8)	0
Situs abnormality n (%)	9 (60)	1 (11.1) <sup>Δ</sup>	0
Footnote: <sup>Δ</sup> normal diagnostic tests (see Supplementary Table 1, participant 018)			

**Supplementary Table S1:** Diagnostic results for PCD and respiratory control and healthy participants.

We have indicated which experiments the participants were recruited to (NTHi isolation, co-culture (*Biofilm CFUs*, *SEM*, *FISH*, *TEER*, *Cytokines*, *LL-37*), % ciliation by beta-tubulin immunofluorescence (IF) or Fast Fourier Transform (FFT) analysis, nitric oxide synthase (NOS) isoenzyme IF, DAF-FM labelling of nitric oxide, PYRRO-CD3 treatment).

	PCD or Respiratory control or Healthy	Age (Years)	Situs	nNO (nL/min)	CBF (normal range 11-20 Hz)	CBP	TEM defect	Genotype	Experiment(s)
001	PCD	8	Dextrocardia	9.6	0	Immotile	ODA & IDA	ZMYND10	NTHi isolation
002	PCD	15	Heterotaxy	6	0	Immotile	ODA & IDA	DYX1C1	NTHi isolation
003	PCD	10	Normal	15	N/A	Predominantly immotile (some residual movement)	ODA	DNAH5	NTHi isolation
004	PCD	5	Dextrocardia	3	0	Immotile	ODA	DNAH5	NTHi isolation
005	PCD	27.97	Normal	77.4	8.67	Asynchronous stiff cilia on 2 separate occasions, also consistent after ALI-culture	Normal	Unknown	Co-culture, % ciliation (by beta-tubulin IF)
006	PCD	23.05	Dextrocardia	7.98	N/A	Predominantly immotile with some stiff hyperfreq. cilia (reduced amplitude)	Normal	DNAH11	Co-culture, PYRRO-C3D
007	PCD	14.8	Normal	19.5	0	Immotile	ODA	DNAH5	Co-culture, NOS isoenzymes by IF
008	PCD	16.85	Normal	25.8	0	Immotile	ODA	DNAH5	Co-culture
009	PCD	21.61	Dextrocardia	12.9	N/A	Predominantly	ODA	DNAI1	Co-culture

						Immotile (some residual movement)			NOS isoenzymes by IF
010	PCD	47.35	Dextrocardia	12	0	Immotile	ODA	DNAH5	NOS isoenzymes by IF, % ciliation (by beta-tubulin IF)
011	PCD	29.70	Normal	12.6	N/A	Predominantly stiff moving asynchronous cilia and others immotile	Normal	HYDIN	% ciliation (by beta-tubulin IF), DAF-FM, PYRRO-C3D
012	PCD	7.51	Dextrocardia	3	0	Immotile	ODA	DNAH5	% ciliation (by beta-tubulin IF), DAF-FM
013	PCD	0.50	Dextrocardia	ND	0	Immotile	ODA	Unknown	% ciliation (by beta-tubulin IF), DAF-FM
014	PCD	27.89	Normal	1.6	N/A	Predominantly stiff moving asynchronous cilia and others immotile	Normal	HYDIN	PYRRO-C3D
015	PCD	20.45	Dextrocardia	7.32	N/A	Predominantly stiff moving asynchronous cilia and others immotile	Normal	DNAH11	PYRRO-C3D
016	Respiratory control	46.18	Normal	277.5	18.47	Normal	Normal	ND	Co-culture
017	Respiratory control	2.30	Normal	ND	12.2	Normal	Normal	ND	NOS isoenzymes by IF
018	Respiratory control	1.49	Dextrocardia	ND	15	Normal	ND	ND	NOS isoenzymes by IF
019	Respiratory control	1.80	Normal	ND	15.6	Normal	ND	ND	NOS isoenzymes by IF, % ciliation (by beta-tubulin IF)
020	Respiratory control	3.02	Normal	52.8	15.5	Normal	ND	ND	% ciliation (by beta-tubulin IF)
021	Respiratory control	0.19	Unknown	ND	14.56	Normal	Normal	ND	% ciliation (by beta-tubulin IF)
022	Respiratory control	2.91	Normal	ND	15.7	Normal	Normal	ND	% ciliation (by beta-tubulin IF), DAF-FM
023	Respiratory control	2.98	Unknown	ND	18.7	Normal	Normal	ND	% ciliation (by beta-tubulin IF)

[illegible]