Abstract P248 Table 1 Results for all IPF patients: Demographics and Disease Severity by FVC percent predicted

Total IPF patients n = 528				
Sex		Male	Female	Row total
Number of patients (proportion)		431 (82%)	97 (18%)	528
Ethnicity		Caucasian	Non-Caucasian	
Number of patients (proportion)		453 (86%)	75 (14%)	528
Reference equations used	Characteristic	Unit	Median	IQ range
	Age	years	72	68–78
	FVC	litres	2.175	1.700–2.780
	ECSC	FVC%pred	64.9	52.2–75.9
	GLI	FVC%pred	60.6	49.3–72.4
	NHANES	FVC%pred	58.9	49.4–70.0
FVC percent predicted range				
Reference equations used		>80%	<80%	Row total
	ECSC	98	430	528
	GLI	73	455	528
	NHANES	64	464	528

Key for Table 1: FVC = forced vital capacity; ECSC = European Community for Steel and Coal; GLI = Global Lung Index; NHANES = National Health and Nutrition Examination Survey; %pred = percent predicted; IQ = interquartile

function reports. Those choosing reference values must be aware of implications for patients.

P249 COMPARISON OF PHYSIOLOGICAL VERSUS MATHEMATICAL METHODS FOR QUALITY CONTROL IN MBW NORMALISED PHASE III ANALYSIS

¹M Arigliani, ²N Verger, ³E Raywood, ³J Duncan, ⁴A Bush, ⁵P Aurora on behalf of the London Cystic Fibrosis Collaboration. ¹Department of Clinical and Experimental Medical Sciences, Unit of Paediatrics, University Hospital of Udine, Udine, Italy; ²Université Pierre et Marie Curie, Paris, France; ³Respiratory, Critical Care and Anaesthesia Section, IIRP, UCL Institute of Child Health, London, UK; ⁴The National Heart and Lung Institute, Imperial College, London, UK; ⁵Department of Respiratory Medicine, Great Ormond Street Hospital for Children, London, UK

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Background Breathing pattern cannot be controlled in small children, so multiple breath washout SnIII analysis has to exclude inadequate volume breaths.

Aim To compare an existing mathematical breath exclusion algorithm with a physiological method.

Methods School age children with CF (30) and controls (30) performed SF6MBW with mass spectrometer, with uncontrolled tidal breathing. Two different breath exclusion methods were compared, with exclusion based on:

1) Expired tidal volume (VT) deviating by >25% of the median VT¹

2) VT <3 Langley dead space² volume or 90% bigger than the median VT

Runs with >33% excluded breaths were removed. Volume corrected Scond was calculated from subjects with 3 valid runs.

Results Far fewer subjects were excluded by the physiological Langley method, than by the mathematical method (Table). The mean and SD for Scond was identical by both methods, implying that the mathematical algorithm excludes valid data.

Abstract P249 Table 1

	Breath size exclusion criteria		Mean diff (95% CI)
	VT±25%	Langley correction	
Number of subjects excluded	30/60	12/60	
Scond (SD) controls	0.009(0.012)	0.011(0.012)	-0.011; 0.006
Scond (SD) CF	0.070(0.025)	0.072 (0.025)	-0.004; 0.0009

Conclusion A physiological approach to data cleaning prior to SnIII analysis allows retention of data that would be inappropriately excluded mathematically.

REFERENCES

- 1 Bigler A, et al. *Paediatric Pulmonol* 2015;**50**(8):805–13.
- 2 Langley FE, et al. *Colloques INSERM* 1975;**51**:209–212.

P250 REAL FLIGHT SPO2 COMPARES WITH HYPOXIC CHALLENGE TESTING IN ADULTS WITH CYSTIC FIBROSIS

R Peat, J Furlong, E Spencer, D Russell, M Ledson, MJ Walshaw. *Liverpool Heart and Chest Hospital, Liverpool, UK*

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Introduction Limited data are available comparing air travel with the hypoxic challenge test (HCT) in adults with cystic fibrosis (CF). The aim of this study was to assess the predictive capability the HCT to in-flight hypoxaemia in adult passengers with CF.

Methods Fifteen subjects (three male) volunteered for this study. Lung function measurements (FEV1) were performed pre and post flight. Oxygen saturation measured by pulse oximetry (SpO2) and symptoms were recorded in-flight on both outward and inward flights. The HCT was performed post flight and the in-flight oxygenation response was compared to the HCT and lung function results.