Abstract P139 Table 1 Descriptive statistics of individual subgroups of the study

		Mean $\pm$ SD	
		CPEF(f) (L/min)	CPEF (m) (L/min)
Group Total	n=58	512.30 $\pm$ 89.40	511.70 $\pm$ 87.90
Gender; Male	n=30	584.24 $\pm$ 49.43	583.58 $\pm$ 48.84
Gender; Female	n=28	435.30 $\pm$ 48.60	434.78 $\pm$ 43.22
Age; 18-39	n=41	525.00 $\pm$ 85.40	523.0 $\pm$ 85.2
Age; 40-60	n=18	479.80 $\pm$ 95.20	483.70 $\pm$ 92.80
CPEFmax	n=58	522.60 $\pm$ 89.60	523.80 $\pm$ 88.80

with the different interfaces. Analysis of each interfaces' maximal effort (CPEF_{max}) indicated no significant differences (CI 95%, $p=0.943$). Randomised sequence data was analysed, where it concluded that there was no significant influence of interface sequencing on the Results (CI=95%, $p=0.671$).

Conclusion The study's Results support the hypothesis, suggesting interchangeability of both interfaces. This now offers a platform for further study in the viability of facemask CPEF within the clinical setting, as well as providing a standardised protocol and CPEF reference values.

P140

HYPOXIC CHALLENGE TESTING IN MOTOR NEURONE DISEASE

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Introduction Respiratory muscle weakness is a feature of motor neurone disease (MND), develops insidiously and presents with subtle symptoms. It can be difficult to assess in MND patients who, as a result, may be at risk of desaturation at altitude. Hypoxic challenge tests (HCT) can identify patients who would benefit from in-flight oxygen, but evidence as to which patients should be referred is lacking. The aim of this study was to identify factors that may predict the need for in-flight oxygen in this group of patients where maintaining their independence for as long as possible is paramount.

Methods 81 consecutive HCT's in 53 male, 28 female patients, and the contemporaneous assessments for respiratory muscle weakness on patients with MND. Data from patients requiring in-flight oxygen according to the HCT was compared to data from patients who did not, in accordance with the BTS Guidance for Air Travel 2011.

Results The median patient age of patients who passed the HCT was 62 years; those that failed the HCT were significantly older with a median age of 68 years ($p=0.009$). There was a significant difference in baseline PaO₂ and PaCO₂ between the groups as shown in Table 1; patients who passed the HCT had higher baseline PaO₂ and lower PaCO₂ (10.4 kPa and 5.3 kPa versus 9.3 kPa and 6.2 kPa respectively $p=0.0001$ and 0.0014). No other parameter, including BMI,

smoking history, or physiological measurement including SNIP, or spirometry, could predict the outcome of the HCT.

Conclusions Although MND patients that are likely to fail a HCT have a higher baseline CO₂, a threshold CO₂ value that could identify patients needing in-flight oxygen was not determined. We recommend that the safest approach is to refer all patients with MND that intend to fly for HCT assessment until more evidence-based data is available, which is the current practice at this regional centre.

Abstract P140 Table 1 Demographic data for the 2 patient groups – those that pass and those that fail the HCT

	Pass	Fail
Number of Tests	60	21
Age (Years)	62 (57.5–68.0)	68 (61.5–71.8) **
BMI	24.5 (21.7–28.0)	24.9 (21.5–28.1)
Pack years	8.5 (0.4–15.5)	1.5 (0.0–31.0)
pH	7.43 (7.41–7.45)	7.42 (7.40–7.43)
PaCO ₂ kPa	5.3 (5.1–5.8)	6.2 (5.4–6.7) **
PaO ₂ kPa	10.4 (9.5–11.1)	9.4 (8.8–9.7) **
HCO ₃	26.4 (25.1–27.7)	27.8 (26.9–30.8) **
BE	2.5 (0.9–3.8)	4.5 (2.8–6.1) **
SaO ₂	95 (95.0–95.0)	96 (95.0–96.0)
SNIP (cmH ₂ O)	35.0 (25.0–49.3)	30.5 (21.5–54.0)
FEV ₁ (L)	2.1 (1.5–2.7)	1.5 (0.77–2.79)
FEV ₁ % Predicted	71.00 (51–93)	53.00 (42–96)
FVC (L)	2.7 (1.81–3.27)	1.8 (1.07–3.08)
FVC% Predicted	69 (46–87)	71 (54–89)
FEV ₁ /FVC	83 (77.5–90.0)	77 (65.8–84.9)

** denotes significant difference between the groups with a p value <0.01

P141

PULMONARY FUNCTION TEST PHYSIOLOGY AND PROGRESSION IN DIFFUSE IDIOPATHIC PULMONARY NEUROENDOCRINE CELL HYPERPLASIA (DIPNECH)

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