Results A minimum wear time of 11 hours (≥ 1 valid day) allowed 80% of the sample to be retained. All minimum wear time thresholds produced an ICC ≥ 0.80 , resulting in 1 day of wear required to produce representative inpatient PA. Mornings and afternoons were more active than evenings and overnight (32.1% and 32.0% vs. 25.2% and 10.7% of steps/day, respectively, $p < 0.001$) (figure 1). No changes in PA were observed during the hospital stay; ranging 585–707 steps/day and 72–83 min/day of walking. After controlling for wear time, patients admitted for 2–3 days took more steps on average than patients staying 7–14 days (997 ± 125 vs. 597 ± 91 , $p = 0.036$).

Conclusions One full day (24 hours) of monitoring is required at the individual-level to obtain representative inpatient PA. A minimum wear time criteria of ≥ 11 waking hours is recommended for sample-level data. Wear time and LOHS should be accounted for in analyses.

S83 NEURAL RESPIRATORY DRIVE, RESPIRATORY MECHANICS AND BREATHLESSNESS IN HIGHLY ACTIVE OLDER ADULTS

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Introduction and Objectives Ageing is typically associated with progressive deleterious changes in respiratory mechanics which increase the work of breathing and limit ventilatory reserve. The impact on exercise capacity and exertional breathlessness in healthy ageing remains incompletely understood, in part due to a failure of previous research to control for negative effects of physical inactivity. This study aimed to compare neural respiratory drive (NRD), respiratory mechanics and breathlessness between highly active older adults (AOA) and recreationally active younger adults (YA). We hypothesised that NRD, quantified as diaphragm electromyogram activity (EMGdi) as a percentage of volitional maximum (EMGdi% max), would be higher in AOA than in YA and that this would be associated with increased breathlessness intensity during exercise.

Methods 12 YA (mean ($\pm$ SD) age 26.4 ± 4.7 years) and 12 AOA (cyclists, 59.0 ± 10.1 years), all male, underwent incremental cycle ergometry to their symptom-limited maximum. EMGdi was recorded continuously using an oesophageal multi-pair electrode catheter and quantified as EMGdi%max. Breathlessness intensity was quantified each minute and at end-exercise using the modified Borg scale.

Results Absolute FEV₁, FVC, FEV₁%FVC and IC tended to lower values in AOA than in YA (Table 1), without significant differences in baseline EMGdi%max (AOA $10.6 \pm 5.8\%$ max; YA $7.6 \pm 3.7\%$ max, $p = 0.15$). End-exercise EMGdi%max was significantly higher in AOA than in YA (AOA $61.8 \pm 13.7\%$ max; YA: $51.9 \pm 9.1\%$ max $p = 0.049$), with a trend towards higher end-exercise tidal volume (V_T) relative to IC (AOA: $V_T\%IC = 83.1 \pm 16.7\%$; YA: $V_T\%IC = 73.2 \pm 17.1\%$, $p = 0.17$). There were no significant end-exercise differences in V_T (AOA 2.9 ± 0.8 L; YA 2.8 ± 0.6 L, $p = 0.85$), minute ventilation (V_E) (AOA 116.7 ± 35.8 L/min; YA: 110.4 ± 29.3 L/min, $p = 0.64$) or mBorg breathlessness intensity (median (IQR) AOA 5 (3.25–7.75); YA 5 (5–9), $p = 0.5$).

Conclusions Highly active older adults achieved a similar end-exercise V_E to the younger adults despite age-related respiratory constraints. This required higher levels of NRD, which contrary to our hypothesis, was not perceived as increased breathlessness intensity. The contribution of ageing and/or regular physical activity to this apparent blunted perception of breathlessness requires further study.

Abstract S83 Table 1 Demographics, anthropometrics and lung function data for active older adults (AOA) and younger adults (YA). BMI, body mass index; FEV₁, forced expiratory volume in 1 s; FVC, forced vital capacity; TLC, total lung capacity; RV, residual volume; IC, inspiratory capacity. Values presented are mean $\pm$ SD. * Indicates statistically significant difference between groups, $p < 0.05$

	Younger adults	Active Older Adults	p-value
Age (yrs)	26.4 $\pm$ 4.7	59.0 $\pm$ 10.1	<0.0001*
BMI (kg/m ²)	24.5 $\pm$ 3.5	25.7 $\pm$ 2.4	0.35
FEV ₁ (L)	4.70 $\pm$ 0.80	3.82 $\pm$ 0.86	0.023*
FEV ₁ % pred. (%)	105.0 $\pm$ 17.9	109.1 $\pm$ 12.8	0.53
FVC (L)	5.88 $\pm$ 0.95	5.23 $\pm$ 1.20	0.16
FVC% pred. (%)	105.6 $\pm$ 15.9	112.1 $\pm$ 16.8	0.11
FEV ₁ %FVC (%)	79.5 $\pm$ 5.0	73.1 $\pm$ 6.1	0.01*
IC (L)	3.80 $\pm$ 0.47	3.47 $\pm$ 0.86	0.26
IC pred. (%)	89.4 $\pm$ 17.8	97.6 $\pm$ 21.6	0.40
TLC (L)	7.68 $\pm$ 1.12	7.76 $\pm$ 1.78	0.91
TLC% pred. (%)	105.0 $\pm$ 13.6	106.4 $\pm$ 17.2	0.84
RV (L)	1.95 $\pm$ 0.26	2.41 $\pm$ 0.70	0.09
RV% pred. (%)	110.1 $\pm$ 17.9	97.6 $\pm$ 25.0	0.24
RV% TLC (%)	26.0 $\pm$ 4.2	31.3 $\pm$ 6.0	0.043*

S84 DO PATIENTS GAIN AS MUCH KNOWLEDGE AROUND THEIR CONDITION FROM A WEB-BASED PULMONARY REHABILITATION PROGRAMME?

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Introduction The educational components of Pulmonary Rehabilitation (PR) are fundamental to the format and success of the programme.¹ All patients enrolled onto a PR programme should have access to a structured education programme. However the ideal mode of delivery is unknown and delivery can be varied. It has previously been demonstrated that a web-based programme is feasible.² However the gains in knowledge have not previously been reported for a digital programme compared to face-to-face contact. The Bristol COPD knowledge questionnaire (BCKQ) is a 65 item self-completed questionnaire often used to assess the effectiveness of education delivered.

Methods A single blinded, randomised, controlled feasibility trial comparing a web-based PR programme with a conventional PR programme for 7 weeks was conducted. Patients completed a BCKQ at their initial assessment or online when registering and again at their discharge appointment following completion of the PR programme or online at the end of the web programme.