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Title: Unexplained dyspnoea, a matter of posture?

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Body: We present the cases of 3 females (aged 71-78) referred to our outpatient clinic complaining dyspnoea during daily activity, in particular during walking. A careful history has allowed us to understand that dyspnoea was significantly reduced when they walked with a support of the upper limbs. Methods. Subjects performed respiratory function test (FEV₁, FVC, DLCO), chest X-ray, echocardiogram with non invasive measurement of PAPs, blood sample and ventilatory evaluation by means of portable respiratory inductive plethysmography (Lifeshirt System, LS). LS accurately estimates ventilation, ventilatory pattern and the synchrony of rib cage-abdominal motion (phase angle, PhA) at rest and during exercise both in patients and in healthy subjects. Subjects performed 6MWT with and without a rollator at the same exercise intensity while equipped with LS. Result. Respiratory, cardiac, radiological examination and blood sample was normal. Life shirt evaluation during 6MWT is reported in Table 1 (values are given as mean). PhA at rest: 13.0, 10.6 and 8.7 for S1, S2, S3 respectively.

Table1: 6MWT

	PhA (°)	Borg Score (0-10)	Lower SpO2 (%)	VE (l/min)
S1 with rollator	20.3	5	95	27.4
S1 no rollator	22.1	9	96	26.7
S2 with rollator	16.9	4	95	27.9
S2 no rollator	38.8	5	96	24.8
S3 with rollator	13.7	6	87	32.8
S3 no rollator	17.3	9	88	36.6

Conclusion. During 6MWT without a rollator an evident increase in PhA is shown, which is an index of asynchrony of rib cage-abdominal motion which in turn could induce dyspnoea. We suggest that postural change during walking without upper limbs support can happen in elderly subjects and this could explain the dyspnoea. These cases highlight the importance of thinking outside the usual tests when evaluating patients

with dyspnoea.