# European Respiratory Society
# Annual Congress 2012

**Abstract Number:** 4746

**Publication Number:** P1723

**Abstract Group:** 2.2. Noninvasive Ventilatory Support

**Keyword 1:** Adolescents **Keyword 2:** Acute respiratory failure **Keyword 3:** Cough

**Title:** Introduction of domiciliary mechanical insufflation-exsufflation can reduce the incidence of crisis admissions in patients with Duchenne muscular dystrophy (DMD)

Ms. Emily 30640 Ballard emily.ballard@gstt.nhs.uk [1], Ms. Natalie 30641 Grey natalie.grey@gstt.nhs.uk [1], Dr. Heinz 30642 Jungbluth heinz.jungbluth@gstt.nhs.uk MD [2], Dr. Elizabeth 30643 Wraige elizabeth.wraige@gstt.nhs.uk MD [2], Dr. Stam 30644 Kapetanakis stamatis.kapetanakis@gstt.nhs.uk MD [3], Dr. Craig 30646 Davidson craig.davidson@gstt.nhs.uk MD [1] and Dr. Nicholas 30652 Hart nicholas.hart@gstt.nhs.uk MD [1,4]. [1] The Lane fox Respiratory Unit, St. Thomas' Hospital, London, United Kingdom ; [2] Department of Paediatric Neurology, Evelina Children's Hospital, London, United Kingdom ; [3] Department of Cardiology, St. Thomas' Hospital, London, United Kingdom and [4] NIHR Comprehensive Biomedical Research Centre, Guy's and St Thomas' NHS Foundation Trust & Kings College London, United Kingdom .

**Body:** Although trials are ongoing, there is limited evidence to support the use of mechanical insufflations-exsufflation as a method of secretion clearance to prevent chest infections in patients with DMD. However our local unit practice is to provide a machine to DMD patients that are established on non invasive ventilation with a peak expiratory cough flow < than 160 litres per min despite maximal physiotherapy adjuncts with either: (1) > 2 episodes of chest sepsis per year requiring antibiotics and hospital admission (2) 1 episode of severe chest sepsis requiring invasive ventilation. The aim of the use of the cough assist machine is to reduce the frequency of hospital admissions and length of stay (LOS). We reviewed the prospective data from our DMD patient cohort over a 7 year period in which 32 patients had been issued with a machine. We reviewed the data for 12 months pre and post issue in order to establish the effect on admission frequency and LOS.

Table 1

| n=32 | Pre home issue | Post home issue | Significance |
|---|---|---|---|
| **Mean frequency of respiratory admissionsin a 12 month period** | 3 (1-6) | 0.3 (0.1) | p<0.001* |
| **Mean LOS of respiratory admissions in a 12 month period** | 12.9 (2067) | 11.4 (0.51) | p<0.001* |

data are expressed as absolute value (range) *significant using wilcoxon signed ranks test

These data have showed a significant reduction in both hospital admission frequency and LOS for those patients using a domiciliary cough assist machine. These are the first data to add support to the use of domiciliary cough assist machines in DMD patients with an ineffective cough and previous episodes of chest sepsis already established on NIV.