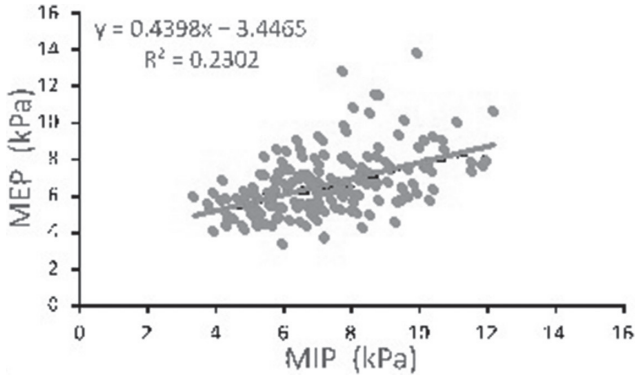


**Abstract P256 Figure 1** MIP vs MEP (regression analysis p = 0.004)

## P257 UNDERSTANDING THE EFFECTS ON LUNG FUNCTION OF CHEST BINDER USE IN THE TRANSGENDER POPULATION

[1]RJM Cumming, [2]K Sylvester, [2]J Fuld. *[1]University of Cambridge, Cambridge, UK; [2]Addenbrookes Hospital, Cambridge, UK*

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**Introduction** Chest binders are garments used for compression of breast tissue by transgender individuals. Deleterious consequences of binder reported include shortness of breath with associated reduced exercise tolerance and speech difficulties; some have suggested lung function is monitored in users of chest binders.[1] We conducted a study to investigate any respiratory deficits caused by chest binders as currently used in the transgender population.

**Methods** We recruited 20 participants from the transgender community. All were assigned female at birth. Ages ranged from 19–47 with median age 22; 4 were current smokers and 4 had mild to moderate asthma. All were habitual users of chest binders. Participants underwent spirometry testing and measures of chest circumference and posture with and without their own binder. The order of testing with or without the binder was random. Ethics approval was granted by the University of Cambridge.

**Results** Table 1 shows abnormal baseline lung function. The median FEV1/FVC is abnormally high but not acutely influenced by the binder. The standard residual of all forced spirometric values was significantly ($p < 0.001$) below predicted values (based on sex assigned at birth); peak expiratory flow (PEF) values were also lower than predicted. There was a significant reduction in expiratory vital capacities, both SVC and FVC ($p < 0.01$) when the binder was on but no other significant acute change. On average chest circumference was reduced by the binder. There was no average change in thoracic kyphosis due to high variability.

**Conclusions** Transgender individuals using chest binders have abnormal lung function. The acute effect of wearing the binder appears to be an overall volume reduction with little other change. Abnormal lung function in the population may indicate a chronic effect of binder usage or generally poor respiratory health. However, due to the small size and timeframe of the study no control population was tested and thus a systematic error cannot be ruled out.

**Abstract P257 Table 1** Median spirometry values acquired with the binder off vs. on. A reduction in vital capacity is seen with the binder on.

| | Summary of spirometry values | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | FVC | | FEV1 | | FEV1/FVC | | PEF | | SVC | |
| | Off | On | Off | On | Off | On | Off | On | Off | On |
| Median (litres) | 4.35 | 4.29 | 3.46 | 3.53 | 0.82 | 0.82 | 394.2 | 397.2 | 4.22 | 4.12 |
| Median (SR) | −0.54 | −0.65 | −0.92 | −1.30 | −0.62 | −0.46 | | | | |
| Median (% Pred.) | | | | | | | 87.7 | 87.0 | | |
| p value off vs on | 0.0062 | | 0.0701 | | 0.3603 | | 0.2349 | | 0.0008 | |

## REFERENCE

1 Davies S, Papp VG, Antoni C. Voice and communication change for gender non-conforming individuals: Giving voice to the person inside. *Int J Transgenderism* 2015;**16**:117–159.

## P258 INFANT LUNG FUNCTION TESTING: A NEW APPROACH USING A RAPID, PORTABLE SYSTEM FOR MEASURING LUNG CLEARANCE INDEX (LCI) IN HEALTH AND DISEASE

[1]A Shawcross, [1]CS Murray, [2]J Kirkby, [3]J Miles, [2]K Pike, [3]S Rees, [2]P Aurora, [1]A Horsley. *[1]University of Manchester, Centre for Respiratory Medicine and Allergy, Manchester, UK; [2]Respiratory, Critical Care and Anaesthesia Section, Institute of Child Health, UCL, London, UK; [3]Lung Function Unit, Great Ormond Street Hospital for Children, London, UK*

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**Introduction** Lung clearance index (LCI) is a sensitive measure of lung disease in infants, with potential applications in clinical practice and research. However, measuring LCI in infants is technically challenging and there is no simple method of assessing LCI outside of specialist research laboratories in this population.

We have previously described an alternative method of measuring LCI, in which expired gas is collected and analysed to derive functional residual capacity (FRC) and LCI without directly measuring flow. This eliminates one of the major technical challenges, whilst also reducing the system's dead space. This method is highly accurate *in vitro*, with a mean accuracy of FRC measurement to within 1%, down to FRC of 100ml.[1] The method does not require large external gas tanks, and washout is performed breathing room air, making the system fully portable.

**Aim** To assess the performance of this method *in vivo*.

**Method** Healthy controls and infants with CF are currently being recruited to undergo LCI measurement using this method. Practical applicability of the system is determined by the number of successful tests and within-subject repeatability, defined as coefficient of variation (CV%) of same-visit repeats. Comparison will be made with LCI measurements obtained using a respiratory mass spectrometer, currently considered the gold standard for infant LCI measurement.