

EVALUATION OF THE EASYONE SPIROMETER FOR PAEDIATRIC USE: A PILOT STUDY.

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The EasyOne is an ultrasonic flow-measuring hand-held spirometer. Features making it attractive for use in paediatrics include portability, child incentives, and a disposable flow tube "Spirette" that minimises cross-infection. This study shows preliminary results of validating the EasyOne for paediatric use. Comparisons of acceptable and reproducible spirometry using the EasyOne were made with those from a "Gold Standard" Lab-based SensorMedics Vmax20C spirometer (SMV). Children referred to the Lung Function Lab for testing, were asked to perform spirometry on both the EasyOne, and then the SMV. Spirometry was performed to the recommendations of the British Thoracic Society and the Association of Respiratory Technicians and Physiologists. 12 children (4M: 8F, ages 5-15, 10.4 mean (3.6 (SD)) performed acceptable and reproducible spirometry on both systems. The group consisted of children with asthma (2), post-Chronic Neonatal Lung Disease (2), Cystic Fibrosis (7), and pre-scoliosis correction (1). A small but significant bias in favour of the EasyOne was seen for FVC of 95ml (123 (SD)($p < 0.05$). There were no statistically significant differences observed for FEV1, PEF, nor FEF25-75. This study shows that the EasyOne gives repeatable spirometry results in children, which are comparable with a gold standard. A further study to fully validate its use in paediatrics is warranted.

Key Words: spirometer, EasyOne, validating, evaluation, paediatrics, spirometry.

Nomination for Award: Nil