

## THE IMPACT OF INHALER TECHNIQUE: SHOWING IMPROVED ASTHMA OUTCOMES WITH A SIMPLE INTERVENTION BY COMMUNITY PHARMACISTS

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**Purpose:** Currently, few asthma patients or pharmacists demonstrate correct inhaler technique. The aim of this cluster randomised parallel-group study was to evaluate the effectiveness of an educational intervention delivered to community pharmacists, and by the pharmacists in turn to their asthma patients, on clinical and humanistic outcomes.

**Methods:** 31 pharmacists were randomized (Active: n=16, Control: n=15), and were trained in a workshop to deliver Peak Flow Meter education alone (Control group) or Peak Flow Meter (PFM) education plus inhaler technique education for Turbuhaler (TH) and Accuhaler (ACC) (Active group). PFM technique was delivered at Visit 1 for both Active and Control groups. At Visit 2 and all subsequent visits, Active pharmacists assessed each patient's inhaler Technique for TH or ACC as appropriate, and highlighted any incorrect steps on a custom-designed "Inhaler Technique Label" which was pre-printed with the items from the technique checklist. The pharmacists then educated the patients following specialised Inhaler technique counselling service that included augmented verbal counselling and physical demonstration with a placebo inhaler, addressing all steps in the inhaler technique checklist. The 'Show and tell' counselling was repeated up to three times as necessary until the patients had correct technique. At the completion of counselling, the pharmacist attached the marked-up Inhaler Technique Label to the outside of the patient's own ACC or TH cap, without covering any important information.

**Results:** Before education, 23% pharmacists had correct inhaler technique. All Active pharmacists achieved correct inhaler technique after the workshop. The pharmacists enrolled 97 patients (Active:53, Control:44) and delivered the intervention at each of 5 visits over 6 months. At baseline, patients in all groups demonstrated poor inhaler technique, with correct technique observed in 9% Active and 5% Control TH users, and in 10% Active and 17% Control ACC users. At 6 months, correct technique was more common in Active than Control patients (TH: 50% vs. 14%, p=0.003; ACC: 79% vs. 14%, p=0.001). PEF variability, assessed by Min%Max, was significantly better in Active than Control patients (change from baseline to 6 months: Active 5.5±7.9 vs. Control 0.2±6.3, p=0.003). The Active group also demonstrated significant improvements in asthma severity, asthma-related quality of life, perceived control and reliever use.

**Conclusions:** This study demonstrates that a simple feasible intervention in community pharmacies can lead to improvement in patients' clinical and humanistic outcomes for asthma.