

Coarse Particle Mass Deposition from Trimbow MDI and Trelegy DPI: In Vitro Comparison and Implications for Oropharyngeal and Oral Side Effects

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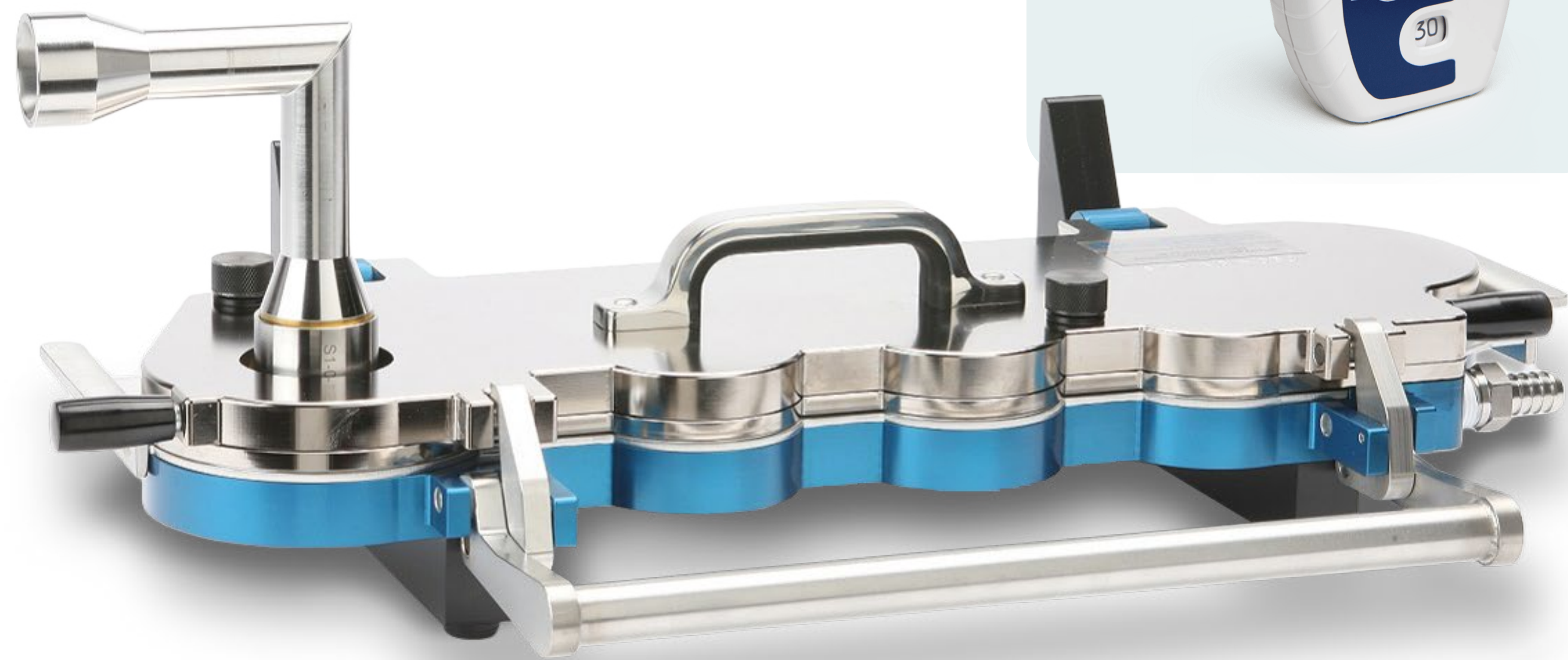
S U M M A R Y Using a spacer in combination with an MDI significantly reduces oropharyngeal deposition, potentially lowering oral and dental health risks.

RATIONALE

- Single inhaler triple therapy can be delivered via metered-dose inhalers (MDIs) (often with spacers/valved holding chambers) or dry powder inhalers (DPIs).
- The portion deposited in the oropharynx pertains to the drug's coarse particle mass (CPM, >4.46 µm). Such deposition can increase risks of local side effects, including oral thrush, dry mouth, or dental erosion.
- We determined the CPM for Trimbow[†] MDI and Trelegy[†] DPI, with implications for minimizing oropharyngeal/oral health risks.

METHODS

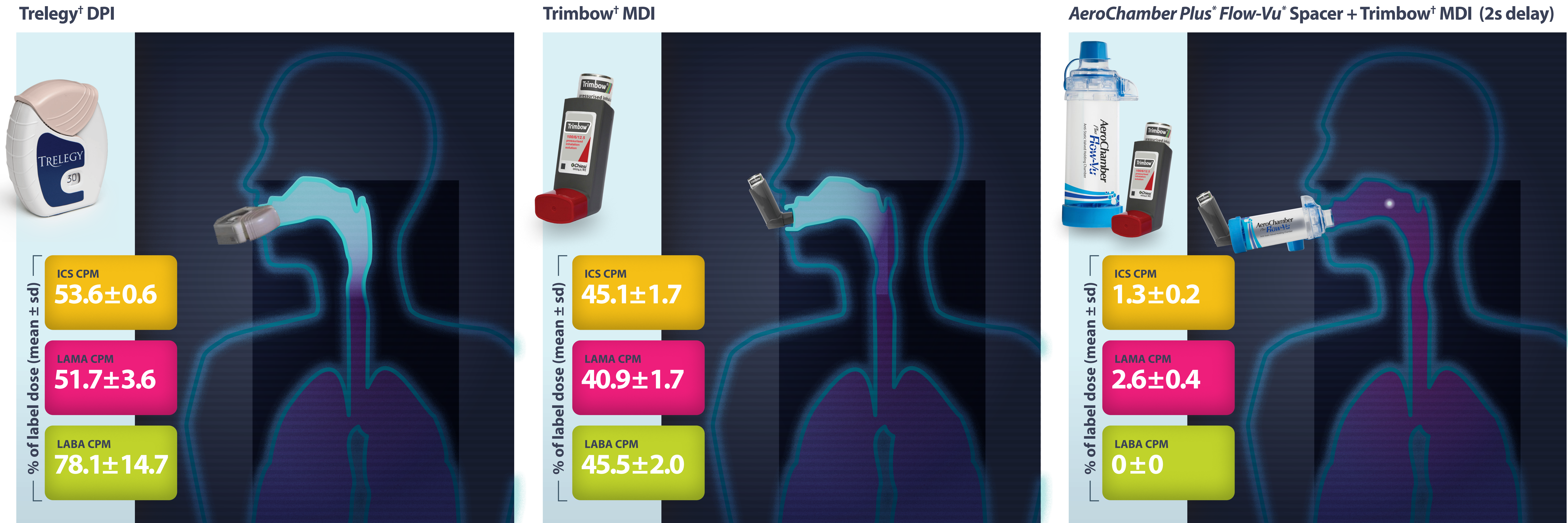
- A Next Generation Pharmaceutical Impactor was used to determine CPM for the MDI alone (30 LPM), MDI+spacer (**AeroChamber Plus[®] Flow-Vu[®]** spacer) (30 LPM) and DPI (60 LPM). Masses of each active ingredient was quantified by HPLC.
- The MDI+spacer was tested with a 2s delay between actuation and sampling to simulate typical poor coordination.



NG Impactor

RESULTS

- The MDI+spacer system delivered minimal CPM of all three constituents of the triple inhaler therapy compared to MDI alone and DPI.



Device (n=5)	ICS CPM % of label dose (mean±sd)	LAMA CPM % of label dose (mean±sd)	LABA CPM % of label dose (mean±sd)
Trelegy [†] DPI	53.6±0.6	51.7±3.6	78.1±14.7
Trimbow [†] MDI Alone	45.1±1.7	40.9±1.7	45.5±2.0
Trimbow [†] MDI + AeroChamber Plus [®] Flow-Vu [®] Spacer	1.3±0.2	2.6±0.4	0±0

CONCLUSIONS

- These *in vitro* data provide guidance to clinicians that pairing the **AeroChamber Plus[®] Flow-Vu[®]** spacer with a Trimbow[†] MDI minimizes the CPM, the fraction associated with oropharyngeal deposition.
- By retaining the CPM in the chamber, the spacer significantly reduces oropharyngeal deposition (by ca. 96%), thereby lowering local oral medical and dental health risks.