



# NSW Speech Pathology Evidence Based Practice Interest Group

## Critically Appraised Paper (CAP)

### CLINICAL BOTTOM LINE:

- Cuff inflation may exacerbate/increase aspiration at the level of the vocal folds and an MBS should be pursued for further detail.
- Study poorly detailed.

**Clinical Question [patient/problem, intervention, (comparison), outcome]:** Does an inflated cuff exacerbate/increase aspiration at the level of the vocal folds?

**Citation:** Davis, D.G., Beras, S., Barone, J.E., Corvo, P.R. and Tucker, J.B. (2002). *Swallowing with a tracheotomy tube in place: Does cuff inflation matter?* Journal of Intensive Care Medicine, 17(3), 132-135.

**Design/Method:** Prospective blinded analysis, cross-over design.

**Participants:** 12 patients with tracheostomies, recently weaned from ventilation and ready for oral feeding, exclusion criteria included hemodynamic instability, unable to attend MBS, unable to follow commands. It was unclear as to the details surrounding the 1 patient who was unable to complete the entire series of tests.

**Experimental Group:** Patients assessed via MBS with SP, 8 MBS's each (except one patient), 4 consistencies trialled (thin, thick, puree, solid) under 2 conditions (cuff inflated, cuff deflated), degree of aspiration (no aspiration, aspiration <10% + cough/choking/distress, aspiration <10% - cough, aspiration >10% + cough, aspiration > 10% - cough) rated by Radiologist (blinded to cuff status).

**Control Group:** Subjects acted as own controls in 2 different conditions (cuff inflated and cuff deflated).

### Results:

- Cuff deflation resulted in fewer episodes of aspiration and reduced severity of aspiration.
- Cuff inflation resulted in 2.7 times higher rate of aspiration, which was nearly statistically significant.
- Lowest rate of aspiration with solids across both conditions.
- Cuff status and consistency were statistically significant results.

### Comments:

- **STRENGTHS** – Objective, SP involvement, Radiology blinded (single-blinded), range of consistencies examined, same group of patients under two conditions, statistical analyses, pilot study.
- **WEAKNESSES** – Small sample size, assessor not blinded, methodology unclear, nil information re:
  - reason/type/length of time insitu for tracheostomy;
  - order/timing of cuff-up/cuff-down status;
  - medical history;
  - previous SP intervention;
  - non-oral nutrition;
  - amounts of trialled materials;
  - views of MBS
  - inter-rater reliability (sensitivity, specificity)

**Level of Evidence (NH&MRC):** IV

**Appraised By:** TDG

**Date:** 30/11/06