



# NSW Speech Pathology Evidence Based Practice Interest Group

## Critically Appraised Paper (CAP)

**CLINICAL BOTTOM LINE:** Arterial oxygen saturation did decrease during and after eating for acute stroke patients, however, also decreased during eating for elderly control group. Possibly desaturation is age related and for majority the changes in desaturation may have happened whether eating or not.

**Clinical Question:** In patients with neurogenic dysphagia is pulse oximetry a reliable assessment tool for identifying episodes of aspiration?

**Search Terms:** See CAT

**Search Systems:** See CAT

**Citation:** Rowat, A.M., Wardlow, J.M., Dennis, M.S., and Warlow, C.P. (2000). Does feeding alter arterial saturation in patients with acute stroke. *Stroke*, 31. 2134 -2140

**Design:** Pseudo –controlled study. Placement of probe was attempted to be randomised but not always possible. Randomisations into control group versus other groups impossible as not a therapy study

**Participants:** 106 stroke patients studied within 12 days post stroke. Aged 37-94 (Median 74yrs). 50 elderly patients with non-neurological problems, nil history of stroke, TIAs or swallowing problems, aged 49-94 (Median 81 yrs).  
Young control group aged 26-44yrs (Median 35 yrs) with no medical problems.

**Experimental Group:**

106 stroke patients. 17% had anterior circulation stroke, 48% had partial anterior circulation stroke, 39% unclassified.

**Control Group:**

Elderly Control: Medical conditions include heart disease, pulmonary disease, GI disease, DVT, reduced mobility.  
Young control Group.

**Results:** Stroke patients had a significant lower median SaO<sub>2</sub> at baseline (before meal). In stroke patients and elderly controls SaO<sub>2</sub> was lower during eating than at baseline (before meal). For a small % of both these groups, SaO<sub>2</sub> falls were >3% (no association with existing breathing problems or types of meals eaten i.e.. normal/modified). Only stroke patients had significant decrease in median SaO<sub>2</sub> after the meal. 24% of stroke and 16% of elderly had episodes of hypoxemia during and after eating.

**Comments on Design:** Need more standardised assessment of dysphagia with/without aspiration in stroke and elderly control group (only 53% classified safe to feed by Speech Path). Problems with reliability of measurement of SaO<sub>2</sub>

**Level of Evidence : III (2)**

**Appraised By:**  
**Clinical Group:** Adult Sp/Lang and Dysphagia Grp

**Date:** 1/2/05

## Guidelines for completion of the CAP

### *Clinical Bottom Line*

The consensus of the reviewers on implications of the paper on clinical practice. Whilst this may be somewhat subjective, it is hoped that robust discussion, the Level of Evidence and your comments on the design will enable you to produce a practical/realistic 'bottom line'. Many of the papers in Speech Pathology may have limitations, but the Clinical Bottom line should be aimed to help clinicians apply what evidence there is.

### *Clinical Question*

This should ideally include four components:

- the patient or problem
- the intervention (or diagnostic test or prognostic factor)
- the comparison intervention or test (*optional*)
- the outcome

### *Design*

Refer to pages 12 to 15 of the EBPIG Resource Package for guidance in reviewing the design used.

### *Comments on Design*

Pages 12 to 15 of the Resource Manual should again assist here. You may also find it useful to refer to the forms 'Evaluating case studies/case series' and 'Critical appraisal sheet' adapted from Dr Lil Mikuletic's (see 'Critiquing/Appraising the Evidence').

### *Level of Evidence*

It is recommended that the paper you are reviewing be rated against the NH&MRC Levels of Evidence, as reproduced here. The levels may be updated from time to time by the NH&MRC, but use of the ratings listed here will ensure consistency across CATs and groups. These levels are listed with comments on pages 15 and 16 of the Resource Package.

#### **LEVEL**

- I.** Evidence obtained from a systematic review of all relevant controlled trials
- II.** Evidence obtained from at least one properly designed randomised controlled trial
- III.**
  - 1** Evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method)
  - 2** Evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case-control studies, or interrupted time series with a control group
  - 3** Evidence obtained from comparative studies with historical control, two or more single-arm studies or interrupted time series without a parallel control group
- IV.** Evidence obtained from case series, either post-test or pre-test and post-test