



NSW Speech Pathology Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE: A decrease in arterial desaturation does not necessarily result from aspiration, however there is an association between desaturation and assessment of risk of aspiration at bedside. Further investigation is required. Study design flaws acknowledged by authors.

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: Zaidi, N.H., Smith, H.A.A, King, S.C., Park, C., O'Neil, P.A., Connolly, M.J. (1995). Oxygen desaturation on swallowing as a potential marker of aspiration in acute stroke. *Age and Aging*. 24;267 –270.

Design: Non-randomised control design with no noted inter-rater reliability.

Participants: 3 groups of participants. Group 1= 49 Male and Females admitted with acute stroke over 3 week period in 3 hospitals. Group 2 = age and sex matched non-stroke patients. Group 3 = healthy young participants.

Experimental Group: 49 acute stroke patients aged 49-63 years (all males). All seen within 72 hours of admission to hospital. Independently assessed by medical student/officer with pulse oximeter twice. First with swallow of 10ml of water and then 10min of observation and repeated test one minute later. Independently reviewed by Speech Pathology 3 classifications of aspiration based on assessment. Assessed on admission and day 15.

Control Group: Each group assessed once with pulse oximeter
N=55 age matched non stroke patients
N=65 healthy young volunteers.

Results: No significant relationship between fall in SaO₂ and respiratory infection. No significance in degree of desaturation between 2 aspirating classifications. Desaturation was greater in these two 2 categories than in non-aspiration categories.

Comments on Design: Unable to assess valid risk of aspiration and correlate with SaO₂ desaturation? What correlates with desaturation and therefore how does it predict aspiration? Subjective study. Research and design flaws acknowledge by the authors.

Level of Evidence (NH&MRC): 111 (2)

Appraised By: Adult Speech and Language EBP Gp
Clinical Group

Date: 14/09/04

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