



iCAHE JC Critical Appraisal Summary

Journal Club Details

Journal Club location	NALHN - Modbury Hospital
JC Facilitator	Felicity Sprod
JC Discipline	Speech Pathology

Question

Do carbonated beverages have a different impact on swallowing function in comparison to thickened fluids for adults with dysphagia?

Review Question/PICO/PACO

- P:** Adults with oral/pharyngeal/oesophageal dysphagia
- I:** Impact of carbonated thin fluids of dysphagia (oral, pharyngeal, oesophageal)
- C:** Thickened fluids?
- O:** Impacts on swallowing functions/benefits

Article/Paper

Sdravou K, Walshe M, Dagdilelis L, 2012. Effects of carbonated liquids on oropharyngeal swallowing measures in people with neurogenic dysphagia. *Dysphagia*; 27(2):240-50.

Please note: due to copyright regulations CAHE is unable to supply a copy of the critically appraised paper/article. If you are an employee of the South Australian government you can obtain a copy of articles from the [DOHSA librarian](#).

Article Methodology: Cohort Study

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>Did the study address a clearly focused issue?</p> <p>This study compares the effects of carbonated thin liquids (CTL) with that of noncarbonated thin liquids (NCTL) on oropharyngeal swallowing in adults with neurogenic dysphagia and examines the palatability of the CTL stimulus.</p> <p>The aim of this study was to investigate the immediate effects of carbonated thin liquids (CTL) compared with noncarbonated thin liquids (NCTL) on oropharyngeal swallowing in adults with central nervous system (CNS) neurogenic dysphagia and delayed swallow response.</p>
2	✓			<p>Did the authors use an appropriate method to answer their question?</p> <p>This study was an un-controlled cohort study. All participants utilized the same treatment. Given that the aim (above) and the hypothesis was that CTL influences swallow function by increasing swallow efficiency and reduce the incidence of aspiration in this population, this was an appropriate method to answer the question.</p> <p>Is it worth continuing? YES</p>
3	✓			<p>Was the cohort recruited in an acceptable way?</p> <p>The participants were recruited in this study via a convenience sampling strategy. Participants referred by physicians or speech-language pathologists (SLPs) for VFSS at the research site and who met the inclusion criteria were invited to participate in the study. Inclusion criteria were (1) men and women between 18 and 80 years of age, (2) CNS disorders confirmed by MRI or CT scan, (3) confirmed oropharyngeal dysphagia on clinical bedside examination consistent with the medical diagnosis, (4) ability to tolerate and cooperate with VFSS, (5) confirmed delayed pharyngeal response on NCTL determined by VFSS, and (6) ability to give informed consent, in accordance with ethical guidelines. Individuals with a history of head and neck tumors and/ or with surgery to the head and neck regions and/or with a history of peripheral nervous system diseases were excluded from the study, as these conditions might affect sensory receptors and peripheral nerves. Pregnant women, people who were in a dependent relationship, or who worked with the researcher were also excluded in accordance with ethical guidelines.</p>
4	✓			<p>Was the exposure accurately measured to minimize bias?</p> <p>All participants has</p> <ul style="list-style-type: none"> - CNS disorders confirmed by MRI or CT scan - Confirmed oropharyngeal dysphagia on clinical bedside examination consistent with the medical diagnosis - Confirmed delayed pharyngeal response on NCTL determined by VFSS

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5	✓		<p>Was the outcome accurately measured to minimize bias?</p> <ul style="list-style-type: none"> - VFSS was the instrumental assessment chosen to demonstrate change and measure the effects of the CTL on swallowing. VFSS studies were conducted using Opera T20c (GMM, Italy), computerized fluoroscopic unit. The fluoroscopic images were recorded on a super-VHS videotape recorder (Panasonic NV-HS960 SVHS) with facilities for controlled slow motion and frame-by-frame analysis (25 frames per second). - Both temporal [oral transit time (OTT), pharyngeal transit time (PTT) and stage transition duration (STD)] and descriptive [initiation of the pharyngeal swallow (IPS), penetration-aspiration scale (PENASP), and pharyngeal retention (PR)] measures of bolus flow were selected to examine the effects of carbonation on swallowing. - The Quartermaster Hedonic Scale was adapted and used to investigate the palatability of the CTL. The adaptation of the original scale was made in order to simplify the scale to facilitate participant rating. Additionally, a meta-analysis on the optimal length of rating scales has shown that five-point scales produced very reliable results and the addition of a midpoint, indicating a neutral position, increased reliability.
6		✓	<p>Have the authors identified all important confounding factors?</p> <p>There was no control group to control for confounding factors and they were not identified or considered by the authors.</p> <p>Have they taken account of the confounding factors in the design and/or analysis?</p> <p>No.</p>
7	✓		<p>Was the follow up of subjects complete enough?</p> <p>The follow-up is long enough for the condition in question</p>
8			<p>What are the results of this study?</p> <p>CTL vs. NCTL significantly decreased penetration and aspiration on 5-ml (P = 0.028) and 10-ml (P = 0.037) swallows. CTL had no significant effect on OTT, PTT, IPS, and PR for any volume of bolus.</p>
9			<p>How precise are the results?</p> <p>95 % confidence intervals and p values are provided.</p>
10	Journal Club to discuss		<p>Do you believe the results?</p>

11	<p>Can the results be applied to the local population? CONTEXT ASSESSMENT (please refer to attached document)</p> <ul style="list-style-type: none"> - Infrastructure - Available workforce (? Need for substitute workforce?) - Patient characteristics - Training and upskilling, accreditation, recognition - Ready access to information sources - Legislative, financial & systems support - Health service system, referral processes and decision-makers - Communication - Best ways of presenting information to different end-users - Availability of relevant equipment - Cultural acceptability of recommendations - Others
12	Were all important outcomes considered?
13	Are the benefits worth the harms and costs?
14	What do the study findings mean to practice (i.e. clinical practice, systems or processes)?
15	<p>What are your next steps? ADOPT, CONTEXTUALISE, ADAPT</p> <p>And then (e.g. evaluate clinical practice against evidence-based recommendations; organise the next four journal club meetings around this topic to build the evidence base; organize training for staff, etc.)</p>
16	What is required to implement these next steps?

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