

respective analysis of 120 patients assessed by videofluoroscopy. *Clin Otolaryngol* 1993;18:303-7.

Competing interests: None declared.

DOI:10.1053/cmaj.1031911

**H**illel Finestone and Linda Greene-Finestone<sup>1</sup> offer many useful points in their article on dysphagia. However, it is disappointing that the technique and value of swallowing retraining<sup>2,3</sup> are not mentioned.

Credit for recognizing that stroke victims may “forget” how to swallow, and can be retrained to do so, goes to Henry Heimlich.<sup>4,5</sup> Both of his papers are well worth reading, as they document the pioneering of a new therapy. In brief, the technique of swallowing retraining is based on the idea that the reflex sequence of deglutition can be retaught if it is lost as a result of stroke. Heimlich’s original reports<sup>4,5</sup> described patients being instructed in sucking, elevation of the larynx and coordination of those functions. People who have lost the ability to swallow for other reasons, such as disuse atrophy of the pharyngeal muscles, can also be retrained.

Over a period of years this mode of rehabilitation gradually became the domain of speech pathologists, and many physicians who care for stroke patients have unfortunately remained completely unaware of it. If there is swallowing dysfunction but no speech impediment, it is quite possible that a speech pathologist will not be consulted, and the patient may be unnecessarily consigned to permanent gastrostomy. As described in the article,<sup>1</sup> swallowing function returns spontaneously in some cases. In others, it does not — but in some of those patients, it can be restored by retraining.

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DOI:10.1053/cmaj.1031942

**H**illel Finestone and Linda Greene-Finestone<sup>1</sup> note that “if the risk of aspiration is high, enteral nutrition (tube feeding) should be provided.” Unfortunately, there is little evidence to support the implication that enteral nutrition through a tube reduces the risk of aspiration pneumonia. Tube feeding does not afford protection against aspiration of oropharyngeal secretions, which may be colonized. The incidence of aspiration pneumonia is similar in subjects fed by nasogastric tube, gastrostomy or postpyloric tube.<sup>2-6</sup> None of the cited studies compared the incidence of aspiration pneumonia among subjects receiving enteral nutrition with that among patients fed intravenously.

Finestone and Greene-Finestone<sup>1</sup> identify complications of enteral nutrition in their online Appendix 2,<sup>7</sup> noting that several of these may be life-threatening. There appears to be a need for good quality-of-life studies of stroke subjects with dysphagia randomly assigned to various feeding and hydration techniques. As the authors have already shown,<sup>8</sup> such studies are made more difficult by the spontaneous recovery of swallowing in almost two-thirds of subjects within 2 to 4 months.

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DOI:10.1053/cmaj.1031943

#### [One of the authors responds:]

**I**rene Campbell-Taylor is correct that dysphagia can be a symptom of a wide variety of conditions; however, our article<sup>1</sup> specifically discusses dysphagia as a result of central neurologic conditions, in this case stroke, and we do not think that the context would be misconstrued by our audience.

Campbell-Taylor hopes that by the term “overnight intravenous fluid administration” we actually meant hypodermoclysis, which she characterizes as “the long-term hydration method of choice.” Hypodermoclysis<sup>2</sup> is a fine method of hydration that unfortunately has not yet caught on to a significant degree in Canadian hospitals, and it would have been a good choice for fluid administration. However, given the typical evolution of dysphagia, fluids may not be required for a prolonged period, so it was not necessary to choose a long-term method.

Campbell-Taylor also emphasizes that aspiration pneumonia must be differentiated from aspiration pneumonitis. Marik<sup>3</sup> distinguished these 2 entities but noted that “some overlap exists.” When a patient presents to the emergency department with a history of stroke, dysphagia and bona fide infiltrates on radiography, as in the case described, we feel that antibiotics would be indicated, especially given the “sick” state (hyperglycemia, hypertension) ex-

hibited by the case patient. We agree that it is bacteria in the saliva that usually cause pneumonia and that “scrupulous mouth care” is appropriate.

Finally, Campbell-Taylor states that our patient’s pneumonia could not have been due to aspiration of saliva and disagrees with the management decision to withhold food by mouth. However, if significant dysphagia is noted by nursing, medical, or speech and language pathology staff members, and cognition is suspect, then “NPO” management is, in our opinion, clinically indicated.

Fred Saibil notes that many physicians have “remained completely unaware” of Heimlich’s technique of swallowing retraining. We will be looking into this limited literature in the future.

Roy Preshaw notes that there is little evidence to support the use of tube feeding as a means to reduce the risk of aspiration pneumonia. As he points out, aspiration pneumonia occurs no matter what type of tube is inserted because oropharyngeal secretions, which may be colonized, are the culprits. However, tube feeding will improve nutrition and hydration status. It is unlikely that a research study will be undertaken to compare enteral nutrition with intravenous feeding, as Preshaw suggests, because stroke patients almost always have a functional gut and there is no justification for submitting them to the more complex method of parenteral nutrition. We certainly agree that there is a need for good randomized quality-of-life studies of stroke patients with dysphagia and are encouraged that our article has engendered such excellent discussion.

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DOI:10.1053/cmaj.1040217

**Corrections**

In an article by Holger J. Schünemann and colleagues on ways of presenting grades of evidence and recommendations,<sup>1</sup> incorrect symbols appeared in the right-most column of Fig. 1 under the heading Multiple. The symbols representing human figures should have been plain circles (as shown here).

**Reference**

1. Schünemann HJ, Best D, Vist G, Oxman AD, for the GRADE Working Group. Letters, numbers, symbols and words: how to communicate grades of evidence and recommendations [editorial]. *CMAJ* 2003;169(7):677-80.

DOI:10.1053/cmaj.1040382

Because of a production error, the recent article about adverse effects of antiretroviral therapy for HIV infec-

tion, by Valentina Montessori and associates,<sup>1</sup> incorrectly stated that the authors had no competing interests. The correct statement appears here.

*Competing interests:* Valentina Montessori has received speaker fees from Abbott Laboratories, Agouron Pharmaceuticals Inc. and Roche for discussions on antiretroviral hepatotoxicity. Marianne Harris has consultancy agreements with Agouron Pharmaceuticals Inc., Boehringer Ingelheim Pharmaceuticals Inc. and Bristol-Myers Squibb, and has received speaker fees or travel assistance (or both) from Agouron Pharmaceuticals Inc., Boehringer Ingelheim Pharmaceuticals Inc., Bristol-Myers Squibb, Gilead Sciences, GlaxoSmithKline, Roche and Merck Frosst Laboratories. Julio Montaner has received grants from, has served as an ad hoc advisor to or has spoken at events sponsored by Abbott Laboratories, Agouron Pharmaceuticals Inc., Shire Biochem Inc., Boehringer Ingelheim Pharmaceuticals Inc., Bristol-Myers Squibb, DuPont Pharma, Gilead Sciences, Glaxo Wellcome, Hoffmann-La Roche, Kucera Pharmaceutical Company, Merck Frosst Laboratories, Pharmacia & Upjohn, and Trimeris Inc.

**Reference**

1. Montessori V, Press N, Harris M, Akagi L, Montaner JSG. Adverse effects of antiretroviral therapy for HIV infection. *CMAJ* 2004;170(2): 229-38.

DOI:10.1053/cmaj.1040384

Quality of evidence	Numbers	Letters	Circles	Stars	Multiple
High	1	A	●	☆☆☆☆	⊕⊕⊕⊕
Moderate	2	B	◐	☆☆☆	⊕⊕⊕○
Low	3	C	◑	☆☆	⊕⊕○○
Very low	4	D	◒	☆	⊕○○○

  

Action based on balance between benefit and harm	Numbers	Letters	Traffic lights	Thumbs	Arrows
Do	1	A			↑↑
Probably do	2	B			↑?
Probably don't do	3	C			↓?
Don't do	4	D			↓↓

**Fig. 1: Examples of possible symbols for representing quality of evidence and the balance between benefits and harm in health care recommendations. See Tables 1 and 2 on the CMAJ Web site for selection criteria (see www.cmaj.ca).**