

## Do you want to treat dysphagia? A throwback on sensory modification strategies



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If **babies and children with pharyngeal dysphagia** have a friend in you, you may well have felt that [positioning](#), [thickeners](#), [teats](#), and [teams](#) are all very well, but there must be something more. (If I were a Disney heroine, now would be the moment I'd gaze into the distance, as my animal pal came up and gently nudged me. But I'm not. So, I'll just keep writing, I guess?)

Instead of singing about how boring it is to be a highly attractive French peasant, a more productive strategy might be to look to the adult literature (I know, but it's still part of our world), where they have accumulating evidence on sensory modifications to the bolus. By sensory modifications, we mean any change designed to **vary the way in which the bolus registers with sensory receptors in the pharynx**—usually by making the bolus cold, spicy, sour, or fizz—aka the bare necessities of a great cocktail night. For this throwback, we found (only!) two articles where researchers examined the impact of sensory modifications to the bolus in children. [Lundine et al.](#) looked at the impact of carbonated barium in

children with neurogenic dysphagia, and [Ferrara et al.](#) checked in with preterm infants to see how they felt about barium on the rocks.

### Despite the dearth of papers, the outcomes looked promising:

- Chilled barium boluses in preterm infants resulted in **fewer aspirations and deep penetrations** over five swallows.
- Carbonated barium boluses in children 5–18 years with acute neurological conditions (mostly traumatic brain injury) resulted in **less penetration and aspiration, and more favorable scores on the Penetration-Aspiration scale** over five 5mL swallows, followed by 60mL of fluid by straw.

### Seems like there's something there, right?

Caveats (aren't there always?): one child in the [Lundine et al.](#) study did *worse* on carbonated boluses, so check your instrumentals; and [Ferrara et al.](#) caution that **habituation effects** have been seen in adults, so make sure you have a functional picture of a whole feed before you go full Queen Elsa on your NICU. Both studies used liquid barium rather than water, juice, or other common beverages, so monitor closely if you're trialing sensory modifications outside the radiology suite. And of course, these are just two very small studies, and confirmation is needed in larger and more diverse samples.

But—given how few evidence-based strategies we have for managing pediatric dysphagia, and given that there is [evidence](#) of efficacy with adults, some **cautious experimental therapy using these principles with instrumental guidance** might just be the Disney power ballad you've been looking for—particularly if the alternative is waiting on a miracle. We may discover a whole new world of dysphagia treatment!

(P.S. How many Disney song references can I incorporate into this review? The answer, apparently, is seven. And yes, if you're wondering, I do have young kids, but that's no excuse.)

[Ferrara, L., Kamity, R., Islam, S., Sher, I., Barlev, D., Wennerholm, L., Redstone, F., & Hanna, N. \(2018\). Short-term effects of cold liquids on the pharyngeal swallow in preterm infants with dysphagia: A pilot study. \*Dysphagia\*. <https://doi.org/10.1007/s00455-018-9877-8> \[open access\]](#)

[Lundine, J. P., Bates, D. G., & Yin, H. \(2015\). Analysis of carbonated thin liquids in pediatric neurogenic dysphagia. \*Pediatric Radiology\*. <https://doi.org/10.1007/s00247-015-3314-z> \[open access\]](#)

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