

Why You Should Never Mix Miralax (PEG) with Starch Based Thickend Liquids

Hospice and Palliative Medicine (HPM) Why You Should...

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Many of us in the GeriPal community are dubious about the benefits of using thickened liquids for dysphagia. If you haven't read prior posts on this, head on over to see a [great analysis illustrating the limited evidence](#). (Side note – if you need a pick me up for these days of 2020, be sure you revisit this [video of the GeriPal team trying thickened liquids for the #ThickenedLiquidChallenge](#)).

Despite the lack of robust data, dysphagia-based diets with thickened liquids remain a standard of care. The hope is that it is easier for people to coordinate swallowing with a thick liquid versus a thin liquid and thus less aspiration events occur. To achieve the desired thickness, one adds a powdered thickener to any thin liquid (water, juice, coffee, etc.), stir, and voilà you have a thickened version of that liquid. There are two types of powder typically used to thicken liquids. The original is starch based (i.e., cornstarch) while the newer one is gum based. Starch based thickeners are relatively cheaper and are the most commonly used in this country.

From our brief and unscientific poll of colleagues, most of us are unaware of a critical interaction between these starch based thickeners and the commonly used constipation medication, polyethylene glycol (PEG). What happens when you mix PEG into these starch thickened beverages? Find out for yourself in the video below.

How did we find this out? We came across an [article published in 2016 by Carlisle et al in JAMDA](#). A very observant nurse noted that when the “PEG powder [was added] to thickened apple juice, the juice quickly thinned to near-water consistency, and the same result was obtained with thickened coffee and with thickened tap water.” To confirm their findings, the authors analyzed the viscosity of solutions before and after the

addition of PEG and found when PEG was added to starch thickened liquids, the viscosity precipitously decreased. Presumably this also increases the aspiration potential if a patient were to ingest by mouth the now thinned liquid. In their small experiment, the consistency change did not occur with gum based thickeners. If you are interested in rheology, fluid dynamics, or theories why this might happen, definitely check out the primary article.

A literature search revealed no other studies in this area. Although last year the [Institute for Safe Medication Practices Canada published a Safety Bulletin](#) that also referenced the potentially harmful interaction after a report of a patient who died after receiving the combination of a starch based thickener and PEG.

While this isn't a medication interaction, per say, it is a risk that we all as clinicians should be aware of. Next time you are on service and see someone with both a dysphagia diet and PEG, change their laxative or see if there's a gum-based thickener available. Ultimately, more systematic changes are likely needed to bring about socializing this risk, so tweet about it, share this with your colleagues, and talk to your IS teams to see if you can create an alert in your electronic health record.

Just a little honey thickened liquids for thought.