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Greetings,

“The ads have been popping up on Facebook” ... what’s the deal with Suboxone and teeth? Back in 2022, during the haze of the pandemic, the FDA issued a warning about dental decay risk from sublingual buprenorphine medications. What is this based on? How likely is this to be a significant risk? Are films worse than tabs? And what do we tell patients about minimizing potential risk? A Google search led me to a bevy of law firm websites with definitive declarations about the dental harms of Suboxone and details about the related class action lawsuits. Might these be the source of our patients’ Facebook ads?

These claims are based on case reports in the setting of reasonable biologic plausibility (low pH of medication, xerostomia). Reviewed here is the only research beyond case studies attempting to characterize the risk. Here, investigators used claims data to compare dental outcomes in patients on buprenorphine/naloxone (bup/nal) to those on naltrexone or transdermal buprenorphine. This brings a significant limitation of confounding by indication, but reviewing it allows us to think more deeply and critically about the claims being made. It also provides an opportunity to consolidate background information so that we can educate patients about this question and what they can do to best protect their oral health while continuing therapy.

Happy New Year,
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Background and Patient Education about Buprenorphine and Oral Health

What’s the problem?

Case reports suggest a possible link between a variety of dental problems and all forms of orally dissolving buprenorphine. An often cited reason is the low pH of the medication combined with the side effect of xerostomia in the setting of other risk factors for dental problems (use of tobacco and/or marijuana, suboptimal oral hygiene practices -sometimes from a young age, limited access to dental care, history of full agonist opioid use, other substance use especially alcohol and stimulants, dietary factors including high soda intake, mood disorders and associated medications that lead to tooth grinding or dry mouth). These co-occurring problems are generally present in high prevalence in people with OUD and are hard to measure and account for, complicating the interpretation of the evidence. FDA reports that severe dental problems occur in people with no prior dental problems, though history is not always certain, and it’s not known how it compares to rates of such problems in similar populations that weren’t taking buprenorphine.

It seems that all of the SL formulations carry this potential risk with the pH of bup/nal in water =3.4 and buprenorphine in water = 4.1. Dental enamel erodes at a pH=5.5. Note that the pH of coffee is ~5, while Coke and Pepsi= 2.4. Red Bull = 3.3 and Monster Energy =2.7. Even apple juice has a low pH, ranging from 3.0-4.5 depending on the variety. However, given the contact time of sublingual buprenorphine products, the impact is potentially greater than it is for beverages. In addition, there may be other influences such as a recently demonstrated depot of buprenorphine found in salivary glands of rats given bup, and an association with cariogenic biofilm from *Streptococcus mutans*. (Zheng et al., 2024). Whether films are worse than tabs is unclear, but decay has been reported with all forms of SL bup (monoproduct, combo films and combo tabs).

What to do?

Don't stop medication. The lifesaving benefit of medication outweighs the risk of this potential problem, whose risk has not been firmly established or characterized. Injectable medication is available but is expensive and given that we don't know enough about the risk/benefit, it can't be used as an indication to recommend a switch.

One key takeaway for minimizing risk: Patients should **rinse** their mouth with water or a baking soda rinse (spoonful of it in a cup of water) after SL bup has dissolved. **But don't brush for another hour** (What? Yes .. you can restore neutral pH by rinsing, but you don't want to subject the teeth to abrasion when they have just demineralized and are temporarily 'softer'. Saliva and neutral pH will allow some remineralization, at which point brushing is safer).

Other patient education tips that bear mention:

- **Consolidate dosing.** Though there may be bioaccumulation in the salivary glands, limiting the exposure to once a day is preferable to multiple exposures that occur with dose splitting.
- **Drink water, and reduce or stop drinking soda, carbonated beverages and other acidic beverages.** Acidity, carbonation (which creates acidity), and sugar all contribute to enamel destruction and decay.
- **Reduce or ideally discontinue tobacco and marijuana** – both are vasoconstrictors, expose the oral cavity to numerous toxins, and tobacco itself has been shown to lower oral pH.
- **See a dentist** for routine care.
- **Combat dry mouth**
 - Drink plenty of water, preferably fluoridated
 - Try sugar-free gum- it increases saliva production. Xylitol itself is a salivary stimulant, and if a person cannot tolerate gum, xylitol-containing candies may help.

- If you have dry mouth in the morning or wake up a lot to drink, talk to your provider about sleep apnea, sinus disease, or medications that are making your mouth dry
- Consider using high-fluoride toothpaste (fluoride converts hydroxyapatite, a core component of enamel, that degrades at pH=5.5, to fluorhydroxyapatite, which degrades at pH= 4.5).

Here is a nice patient education site that gives detail and rationale for these recommendations: <https://www.quick.md/quick-tips/suboxone-tooth-decay-heres-how-to-protect-your-smile-on-buprenorphine/>

And providers can brush up on dental health (got that😊) by watching this informative webinar “Buprenorphine and the Oral Cavity” from Dr K Bradley <https://mesudlearningcommunity.org/resources/webinar-video-resources/?playlist=f0448f5&video=30ca330>

Additional References

Buprenorphine: Drug Safety Communication: FDA warns about dental problems with buprenorphine medicines dissolved in the mouth to treat opioid use disorder and pain. News release. US Food and Drug Administration. January 12, 2022. Accessed Jan 16, 2025.

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