Supporting Oral Microbiome Balance in Patients with Polypharmacy or Dry Mouth

Effective Date: June 21, 2025

Introduction

Older adults frequently suffer from xerostomia (dry mouth), a condition that severely affects oral health and overall well-being. This problem is often a direct result of **polypharmacy**—the concurrent use of multiple medications that suppress salivary flow. Reduced saliva impairs the natural buffering of acids, hinders mechanical cleansing of the mouth, and allows harmful bacteria to thrive in an acidified oral environment.

Saliva is essential for maintaining a stable oral microbiome. Without it, patients become more prone to cavities, gum disease, oral ulcers, and infections. Traditional oral care solutions such as rinses and brushing are often insufficient for restoring balance when dry mouth is present. As a result, many elderly individuals—particularly those in assisted living facilities—suffer progressive oral decline that contributes to pain, malnutrition, and systemic inflammation.

Emerging oral care strategies for xerostomia relief and microbial stabilization have identified additional ingredients that offer significant benefit in polypharmacy-affected patients.
ExoCyan Cran™, a patented cranberry extract, possesses **anti-adhesion properties** that help prevent harmful bacteria from colonizing the teeth and mucosa—an especially relevant benefit when salivary defenses are compromised. Its antioxidant profile further supports oral tissue integrity and immune response (Bodet et al., 2008).
Calcium lactate plays a critical role in supporting **enamel remineralization** and **mucosal buffering**, helping to protect against acid erosion and soft tissue irritation commonly seen in dry mouth cases (Journal of Clinical Dentistry, 2008).

The Polypharmacy Problem

It is not uncommon for elderly patients to take 5, 10, or even 15 medications daily. Many of these—including antihistamines, diuretics, antidepressants, and blood pressure medications—are known to reduce saliva production. In fact, over **500 medications** are currently identified as having xerostomic effects.

This drug-induced dry mouth:

- Allows **acid-loving bacteria** to dominate the oral flora
- Increases **plaque accumulation**
- Leads to **root caries** and gum irritation
- Can contribute to **oral burning**, **mucosal sensitivity**, and difficulty swallowing

Unfortunately, elderly patients often lack the manual dexterity or cognitive function to compensate for these side effects through more rigorous oral hygiene routines.

The Role of pH and Salivary Flow

The acidity of the oral cavity plays a crucial role in bacterial selection. A lower (acidic) pH promotes cariogenic species such as *Streptococcus mutans*, which in turn accelerate enamel demineralization and decay. Saliva naturally buffers these acids, but dry mouth disables this key defense.

Two ingredients in DentiMints™ are clinically recognized for helping restore oral homeostasis:

- **Sodium bicarbonate** raises the oral pH, creating an environment that inhibits acidogenic bacteria and supports remineralization.
- **Xylitol** reduces plaque formation, discourages bacterial fermentation of sugars, and stimulates salivary flow through gustatory pathways.

Brushless, Waterless Hygiene for Medicated Seniors

In institutional care settings, where brushing may only occur once per day—or not at all—products that support daily microbiome balance without water are critically important. DentiMints™ offer a convenient, dignified solution.

Each tablet includes:

- **Xylitol** – promotes saliva and reduces plaque
- **Sodium Bicarbonate** – raises pH and buffers acids
- **Silica** – provides mild abrasion to remove surface debris
- **ExoCyan Cran™** – supports antimicrobial balance and mucosal health
- **Calcium Lactate** – remineralizes enamel and helps protect soft tissues

The **chew-swish-clean** mechanism helps cleanse the mouth, stimulate saliva, and restore a healthier oral environment without the need for water or brushing.

Clinical Implications

For elderly patients on complex medication regimens, improving oral health outcomes requires more than toothpaste and a brush. Effective support for microbiome balance should be convenient, enjoyable, and adaptable to the patient's limitations.

DentiMints™ can be used:

- **After meals or medications**, when oral acidity is highest
- **During long intervals without brushing**, such as between hygiene aide visits
- **In memory care or hospice settings**, where patients are unable to comply with standard oral hygiene routines

---

Conclusion

Polypharmacy-induced dry mouth is one of the most serious and underrecognized threats to oral health in elderly care. By combining clinically studied ingredients

that buffer acids, reduce harmful bacteria, stimulate saliva, and protect tissues, DentiMints™ provide a modern, science-based solution.

Used daily, they can help prevent oral complications in high-risk patients—without relying on traditional brushing or rinsing.

References

Navazesh, M., & Kumar, S.K. (2009). Xerostomia: prevalence, diagnosis, and management. *Compendium of Continuing Education in Dentistry*, 30(6), 326-333.

Sreebny, L.M., & Schwartz, S.S. (1997). A reference guide to drugs and dry mouth—2nd edition. *Gerodontology*, 14(1), 33–47.

Lynge Pedersen, A.M., & Belstrøm, D. (2019). The role of natural salivary defenses in maintaining a healthy oral microbiome. *Journal of Dentistry*, 80, S3-S12.

Bodet, C., et al. (2008). Effects of cranberry polyphenols on cytokine secretion by oral epithelial cells. *Molecular Nutrition & Food Research*, 52(11), 1341–1351.

Journal of Clinical Dentistry. (2008). Evaluation of enamel remineralization with calcium-containing dentifrices. *J Clin Dent*, 19(1), 20–24.