



## Silver Lining in Tiny Smiles: The Game-Changing Role of Silver Diamine Fluoride

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Dental caries remains a pervasive oral health challenge, disproportionately affecting vulnerable populations such as preschool children, whose untreated carious lesions can hinder overall well-being, social interactions, and learning. Despite the widespread availability of fluoride dentifrices, which have significantly reduced caries scores, the untreated decay component in the deft index persists as a critical issue. This gap calls for innovative, accessible, and minimally invasive solutions.

### Silver diamine fluoride (SDF): a transformative agent

The advent of Silver Diamine Fluoride (SDF) has marked a paradigm shift in caries management. With its FDA clearance in 2014 and subsequent availability in the United States by 2015, SDF has emerged as a safe, effective, and economically viable alternative to conventional restorative dentistry. A single application costs less than \$1 (INR ~70), making it particularly suitable for low-income groups—a crucial step toward equity in oral health care.

### Historical significance meets modern innovation

Silver-based therapies have deep historical roots, dating back to ancient times, with silver nitrate gaining recognition as a caries arrest agent as early as the 19th century. In 1969, Nishino's study on SDF laid the foundation for its widespread clinical use. Over decades, SDF has evolved, gaining approval in Japan as "Saforide" and becoming a global mainstay in caries prevention and management.

### SDF: Beyond arresting caries

The applications of SDF extend far beyond caries arrest. Its versatility makes it invaluable for:

- High-risk individuals and those with limited access to dental care.
- Non-invasive treatment of molar incisor hypo mineralization and dentinal hypersensitivity.

- Managing cavitated lesions in young children or those with behavioural or medical complexities.
- Disinfection in endodontic procedures and as an adjunct in atraumatic restorative techniques (SMART).

### Clinical protocols and cautions

Effective use of SDF hinges on adherence to established protocols. Proper case selection, lesion preparation, and patient or guardian consent are paramount. Contraindications, such as silver allergies or pulp-involved lesions, must be observed. Biannual applications and structured follow-ups further ensure optimal outcomes.

### A call for integration

As the dental community increasingly embraces minimally invasive approaches, SDF exemplifies the synergy of efficacy, affordability, and patient-centred care. It offers an opportunity to bridge the gap in oral health disparities, particularly for underserved populations.

This editorial underscores the necessity for broader implementation of SDF, combined with continued research and community-level advocacy, to advance paediatric oral health and foster a new era of minimally invasive dentistry.