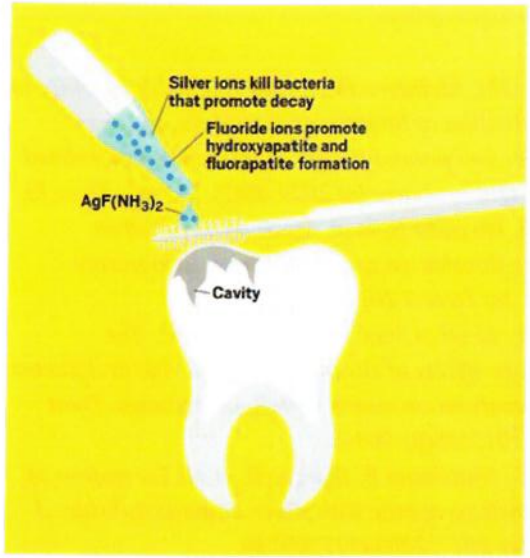

https://newalbanysmiles.com/silver-diamine/

Silver is the New Black:

SDF; The new and improved way to arrest caries

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What is SDF?

SDF is a colorless liquid containing silver particles and 38% (44,800 ppm) fluoride ion that at pH 10 is 25% silver, 8% ammonia, 5% fluoride, and 62% water. This is referred to as 38% SDF. Silver diamine fluoride is chemically 38% weight/volume Ag (NH3)2F. The silver acts as an antimicrobial with substantively, preventing reversion of cariogenic bacteria after application. (1) The fluoride provides remineralization, and the silver diamine is a metal complex that dramatically stabilizes the high concentrations of silver and fluoride in solution. (2) Upon application of SDF to a demineralized or infected surface, a silver-protein conjugate layer forms, increasing resistance to acid dissolution and enzymatic digestion. (3,4) Treated lesions remineralize, increasing mineral density and hardness while decreasing the demineralization layer.(5)

http://www.sheersmileskids.com/silver-diamine-fluoride.php

Where does it come from?

Humans have valued silver for thousands of years for its antimicrobial properties. Silver was first used in dentistry as early as the 1840s in the form of "nitrate of silver" (known today as silver nitrate, AgNO3).

- In 1891, 87 of 142 treated lesions were arrested.
- Silver was known in Japan, Australia, Brazil, Argentina, Cuba, and China for a long time as a caries prevention.
- In 2014 it was approved in the U.S. as a treatment for dental sensitivity by the FDA, off label for the arrest of tooth decay.
- In 2016 it was recognized by the FDA for breakthrough therapy for caries treatment.
- In 2017 SDF was granted the health Canada indication of an anti-caries agent.

How is it used in dental field?

1) Prevent dental caries
2) Remineralize early enamel caries:
"The fluoride ions in SDF help create fluorapatite, a more acidresistant enamel which can prevent further demineralization of tooth structure" (Chhokar, Salina et al. 2017).
3) Arrest dental caries:
"In October of 2016, the FDA granted the designation of breakthrough therapy to Advantage Arrest 38% SDF as a treatment for arresting dental caries in children and adults" (Chhokar, Salina et al. 2017).
4) Decrease sensitivity:
"As of April 2014, a 38% SDF was cleared for marketing as a Class II medical device by the U.S. Food and Drug Administration (FDA) for the treatment of dentinal hypersensitivity" (Chhokar, Salina et al. 2017).
"The first product was cleared for marketing by the Federal Drug Administration (FDA) in 2014 as a cavity varnish for treatment of hypersensitivity in adults over 21 years of age therefore, its use as a caries preventative or arresting agent is off label." (Bowen, 2016).