

# Silver Diamine Fluoride (SDF)

## Patient Information Leaflet



**Reference:** DEN\_SDF\_02

**Published:** March 2023 **Review date:** March 2025

**This leaflet explains about Silver Diamine Fluoride (SDF). If you have any further questions, please speak to the dentist looking after your child.**

## **What is SDF?**

Silver diamine fluoride (SDF) is clear, topical liquid that can be used to treat tooth decay as well as tooth sensitivity. It is a quick, simple and effective way of slowing and stopping the progression of tooth decay when used as part of a wider tooth decay prevention strategy e.g. controlling sugars in the diet and brushing with a fluoride toothpaste.

## **How does it work?**

The SDF liquid is applied to the problem area of the tooth by the dentist. It releases silver and fluoride ions over time which act to slow / stop the advancement of the tooth decay and / or reduce sensitivity.

## **How is it applied?**

The teeth will first be cleaned and dried. They will then be isolated using small cotton wool rolls held under the lip to keep the teeth dry for the duration of the procedure (one to three minutes). Petroleum jelly will be applied to the gums around the teeth and a small amount of SDF liquid will then be applied to the cavity with a small brush. It will be allowed to dry for one minute and then rinsed with water.

## **When should SDF be used?**

SDF should be used to prevent or stop tooth decay from getting worse. It should only be used on cavities which are not causing / have not caused your child any pain or infection in the past.

## **When should SDF not be used?**

SDF is not useful for teeth where the decay has reached the nerve. It will not help with pain relief if the nerve in the tooth is too inflamed to recover, is dying or already dead and / or infected. These teeth will require more invasive dental treatment (e.g. extraction) to alleviate the symptoms.

SDF should not be used on patients with a known allergy to silver, fluoride, potassium, iodine or ammonia, those with thyroid problems or in patients who suffer with mouth ulcers.

## **What are the benefits of SDF?**

SDF is quick and easy to use. It is well accepted by young children and can also be used in children who are very anxious and / or with special needs.

By stabilising and preventing tooth decay from progressing, SDF may reduce if not eliminate the need for more invasive treatment later (e.g. fillings, extractions) and prevent the development of toothache and infection from decayed teeth. It can also be used to treat tooth sensitivity.

## **What are the risks of SDF?**

Once SDF is applied the treated area will discolour and become permanently black or dark brown. It may be possible to later cover this discolouration with a filling or crown. This depends on the size and location of the cavity and cooperation level of the child.

If accidentally applied to the skin or gums, a brown stain may appear that causes no harm. The stain will disappear in two to three weeks without treatment. A metallic taste may also be noted after application. This will quickly resolve by itself.

SDF may temporarily stain tooth-coloured fillings. Such discolouration can usually be polished off.

SDF can permanently stain clothing and surfaces once dried. The dental team will take care to protect your child's clothing with the dental bib when carrying out this procedure.

SDF alone may not be enough to stop the tooth decay from progressing. Further treatment may be required

## **What alternative treatment is there?**

If no form of treatment is undertaken there will be sole reliance on home preventive measures (e.g. tooth brushing and control of dietary sugars). This may not be enough to control the tooth decay especially if not done consistently. Cavities may get larger and cause symptoms. This will increase the need for more invasive treatments such as fillings, silver crowns and extractions.

A high strength fluoride gel can be applied by the dentist as an alternative to SDF. This may need to be applied more frequently than SDF to have a similar effect.

The most appropriate treatment from fillings, silver crowns and extraction will depend on the site, size of the decay and your child's ability to cope with the procedure.

## **Will my child need to have further treatment?**

SDF works best if applied twice a year. Your dentist will advise you if SDF is being used as part of a wider treatment plan for your child and when they need to be seen again.

If the tooth decay is advanced, symptoms develop and / or if other aspects of home prevention are not being followed, treatment with SDF alone may not be sufficient to stop the cavity from deteriorating.

## What now?

Your dentist will explain the procedure, risks and alternatives prior to obtaining written consent from you.

Your child will still need to brush their teeth twice a day, have sugars in their diet controlled and have their regular dental check.

## Other information

SDF is widely and safely used in many countries for the treatment of tooth sensitivity and decay. Its use is increasing in the UK where it is currently only licensed for the treatment of sensitivity. It can, however, be used unlicensed for the treatment of tooth decay.

## References

Seifo N, Robertson M, MacLean J, et al. The use of silver diamine fluoride (SDF) in dental practice. *Br Dent J*. 2020;228(2):75-81. doi:10.1038/s41415-020-1203-9

Horst JA, Ellenikiotis H, Milgrom PL. UCSF Protocol for Caries Arrest Using Silver Diamine Fluoride: Rationale, Indications and Consent. *J Calif Dent Assoc*. 2016;44(1):16-28.

# Consent

I agree that I:

1. Have read and understood this leaflet.
2. Have discussed with the dentist the risks and benefits of this treatment and alternative options.
3. Have had all my questions answered / no further questions.
4. Consent to my child having SDF liquid treatment to their teeth.

## Parental Agreement:

Name:

Signature:

Relationship to Child:

Date:

## Child Agreement:

Name:

Signature:

Date:

## Dentist/ Therapist:

Name:

Signature:

Position:

Date:

## Contact us

If you have any questions or concerns about SDF, please contact the paediatric dental team on 020 8672 1255 (Monday to Friday, 9am to 5pm).

**For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit [www.stgeorges.nhs.uk](http://www.stgeorges.nhs.uk)**

## Additional services

### Patient Advice and Liaison Service (PALS)

PALS can offer you on-the-spot advice and information when you have comments or concerns about our services or the care you have received. You can visit the PALS office between 9.30am and 4.30pm, Monday to Friday in the main corridor between Grosvenor and Lanesborough Wing (near the lift foyer).

**Tel:** 020 8725 2453 **Email:** [pals@stgeorges.nhs.uk](mailto:pals@stgeorges.nhs.uk)

### NHS Choices

NHS Choices provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health.

**Web:** [www.nhs.uk](http://www.nhs.uk)

### NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones.

**Tel:** 111