Fluoride & Dental Health

Updated Information on Fluoride

- Guideline: Fluoride Prescription
- Frequently Asked Questions (FAQ)
- Patients Information Leaflet (PIL)

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Fluoride and its source

Fluoride is an important element for teeth and bone. Main source of Fluoride is drinking water. Therefore, you may need to know whether your drinking water has required amount of fluoride or not. For example, the people living in Karnataka state can get the information about fluoride in their drinking water from Karnataka Fluoride map.

Your drinking water: It is safe, if your drinking water has the fluoride level ranges between 0.8 ppm and 1.5 ppm (part per million. 1 ppm means 1 mg in one litre of water).

Your food and fluoride: Some of your food items from Karnataka State of India have high level of Fluoride, for example fish, tea, Rava-Dosa have high fluoride, and some are not, such as Shrimp. You can see the amount of fluoride in your food if you are living in Karnataka South costal area.

Toothpaste and fluoride: Fluoridated toothpaste helps prevent dental caries, which is why it’s added to many brands of toothpaste. In India we have different brands of toothpaste having fluoride but, there are few brands of toothpaste do not show the content of fluoride on the package / tube. of the paste.

Fluoride toothpaste and tooth brushing

You need to brush your teeth and gum thoroughly with fluoride toothpaste twice a day after breakfast and last thing will be before going to sleep in the night. You need to get information from your dental surgeon who can provide you better information about the tooth cleaning techniques. Tooth brushing should be supervised or guided by the parents / carers. for the children up to age of 12 years-old.

Toothpastes containing 1,350 or 1,500 ppm fluoride are the most effective in general. However, your dental surgeon may advise you a paste has higher or lower level of fluoride in it; also if you or your child is at a higher risk of dental caries; your dental surgeon will suggest a paste and another form of fluoride as well.
Recommended dose of fluoride in toothpaste, rinse and varnish for the children

- **Children under 3 years old** should brush daily after breakfast and before going to sleep in the night, with a smear of toothpaste containing not less than 1,000 ppm fluoride.

- **Children between 3 and 6 years old** should brush daily after breakfast and before going to sleep in the night, with a pea-size amount (or a rice-grain size) of toothpaste containing not less than 1,000 ppm fluoride.

- **Children 7 years old and young adults** should brush daily after breakfast and before going to sleep in the night. The toothpaste containing 1,000 ppm fluoride is required for them. You can squeeze 1 cm long toothpaste from the tube. 1 cm long paste contains 1mg or 1.5 mg of Fluoride.

Source: (14)

- **Fluoride Varnish**: The fluoride varnish will be applied to the teeth two–three times a year (2.2% NaF- contains 27,600 ppm F-). Fluoride varnish can be applied to the children group younger than 6 years of high-risk caries development. Fluoride varnish must be applied by the trained oral health care personnel or by your dental surgeon. Your dentist will clean the teeth by using a rubber–cup (prophylaxis), and after drying the cleaned teeth s/he will apply the varnish. You will be instructed not to brush teeth up to 12 hours, and eat soft diet after 12 hours of fluoride varnish application.

- **Fluoride mouth-rinse**: They need to use a fluoride mouth rinse daily (0.05% NaF) at a different time to brushing. Fluoride mouth wash is better indicated from the age 9 years and above.

- **Fissure sealing** of permanent molars with resin sealant will be a need, provided the child has caries in his/her primary teeth. Or any of the first permanent molar develops caries. It's better to seal with sealant as soon as the first molar is completely erupted, because, you need to isolate the tooth using rubber dam. Caries activities start within 1 year of tooth eruption.

*Fluoride varnish*: You shall need to apply fluoride varnish (2.2% NaF- = 27,600 ppm F-) to teeth at an interval of six month or three month, and will be performed under dental surgeons supervision. The process involves painting a varnish containing high levels of fluoride onto the surface of the tooth every 6 months or even three times a year is recommended for high risk patients. It works by strengthening tooth enamel, making it more resistant to decay. Any fluoride gel has very high level of fluoride (2.2% Sodium Fluoride = 27, 600 ppm F-). Accidental intake of gel (Fluoride Vanish, e.g. Duraphate) may develop toxic effect; therefore the highly concentrated fluoride gel must be out of reach of the children, and the dental surgeons will apply the fluoride gel on the tooth surface of the patient. Children should be offered fluoride varnish treatment at least twice a year from 3 years old.
Fluoride varnish should be offered 2 or more times a year for children of all ages have high risk of decay (caries).

**Fluoride prescription by age and the level of caries risk**

**Children of 8 –years-old and above with active caries** prescribe daily fluoride rinse ie., 0.05% NaF-

**Children of 10 years-old with active caries** prescribe 1500 ppm fluoride toothpaste

**Children of 16 years-old and above with active caries** prescribe either 1500 ppm fluoride toothpaste

**Diet:** Investigate diet (24 hr recall survey for 3 week days and one weekend) and assist to adopt good dietary practice, so that the child can restrict to free sugar 33g/day.

**Note:**

- Fluoride from toothpaste, fluoride-mouth wash and fluoride varnish will need to work on your tooth enamel for at least 30 minutes, therefore, do not rinse your mouth immediately.

- The frequency and amount of sugary food and drinks should be reduced.

**Non-fluoride Caries Preventive Agents [applicable in fluorosis endemic areas]**

“Non-fluoride caries preventive agents are used as an adjunctive therapy in children and adults for preventing and even reversing the caries. These include sucrose free Polyol chewing gums, chlorhexidine thymol varnish, chlorhexidine varnish and chlorhexidine rinse. A panel at evidence based dentistry; ADA has proposed a clinical guideline for the dentists’ as a resource to make informed decision while prescribing fluoride therapy for arresting and preventing caries.”


**People living in fluorosis endemic areas (with/without dental fluorosis and caries/no caries),** such as- Pavagada of Karnatake State of India, will be a better caries preventive measures in those areas.. the dental surgeons may prescribe them..
7. Answer to your Question (Frequently Asked Questions: FAQ)  
[Patient's information leaflet]

7.1. Q. What is dental fluorosis or mottled tooth?

A. If some of your teeth, usually the front teeth show black or brown spots, or white flecks, you may suspect a fluorosis or mottled tooth, it may happen due to excessive amount of fluoride mainly from drinking water and sometimes fluoride-rich food.

A. An excess amount of fluoride from the toothpaste may also cause mild to moderate fluorosis, therefore, you need to consult with your dental surgeon for a check-up and your dental surgeon will prescribe the right toothpaste for you.

7.2 Q. How the dental fluorosis or mottled tooth looks like?

A. Mild dental fluorosis can be seen as very fine pearly white lines or spot, or flecking on the surface of the teeth. Severe fluorosis can cause the enamel of the tooth to become pitted or discoloured. Dental fluorosis is common in some parts of India, for example, Pavagada of Tumkur district of Karnataka state of India. Fluorosis affects the appearance of teeth of most of the children living in Pavagada area of Karnataka state. Therefore, fluoride levels in drinking water will need to be carefully monitored by the appropriate authorities, and you would better be updated with the information.

7.3 Q. Shall I use fluoride toothpaste? I live in an area where my drinking water has more than 2 ppm fluoride and some of my teeth are affected with ugly spot on them.

A. Usually you will need non-fluoride toothpaste (ie, fluoride-free toothpaste). But you better consult with your dental surgeon, and s/he will advise you after proper assessment of your condition.

7.4. Q. I live in an area where my drinking water has more than 2 ppm fluoride. I do not have an ugly tooth (mottled tooth). Shall I still need fluoride-free toothpaste?

A. You better consult with your dental surgeon. S/he will thoroughly check your teeth and you may need a follow-up visits (re-call visit). Usually you may need a toothpaste contains 500 ppm fluoride, but your dental surgeon will prescribe the right toothpaste for you.

7.5. Q. I live in an area where my drinking water has more than 2 ppm fluoride. I have discoloured tooth (mottled tooth). Also I have more than 2 teeth have holes. Do I need to use fluoride-toothpaste?

A. You better consult with your dental surgeon. S/he will thoroughly check your teeth and diagnose your condition. You may need a follow-up visits (re-call visit). Usually you may need a toothpaste contains 500 ppm fluoride, but your dental surgeon will assess first and prescribe the right toothpaste for you and advise you on how to reduce the risk of dental decay. Also your dental surgeon may need to take your diet history, tooth cleaning habit etc, and based on the assessment results, s/he (dental surgeon) will suggest you the right toothpaste and so on.

7.6. Q. What is fluoride mouth wash? Can I use fluoride mouth wash?

A. Yes, for everyday use, you can use a fluoride mouth wash of 0.05% Sodium Fluoride. There is another type ie. 0.2% Sodium Fluoride (2 tablespoon full), and is used once a week. But you shall need to keep hold the solution for 10-12 minutes, and spit them out. If you need to take a mouth-bath with normal tap water, please do it after approximately 30 minutes, because, fluoride from your fluoride mouth-wash needs to work on your tooth enamel to strengthen them.

7.7. Q. Shall I need to buy a special brand of toothpaste ? Can I buy it from market and use
them?
A. You can try fluoride mouth wash in Indian market, but your dental surgeon may help to advise you the right one. You may contact our fluoride and health division of Oral Biology & Genomic Studies of AB Shetty Dental College of Nitte Deemed to be University, Deralakatte, Mangalore.

7.8. Q. I am an adult (25 yrs), which tooth paste is better for me? Do you recommend any special brand for me?
A. If you do not have a decayed tooth, you may use 1000 ppm [0.1% Sodium Fluoride (NaF)] containing toothpaste will be fine for you. But if you have several teeth has holes (Dental caries), you may need higher level of fluoride, for example- 1, 350 ppm or 1, 500 ppm (0.2% Sodium Fluoride). Even you may need 2500 ppm upto 8000 ppm (0.3-0.8% Sodium Fluoride) tooth paste. But your dental surgeon will prescribe for you, you better take his/her advice.

7.8. Q. Is there any toothpaste for the children? What toothpaste will be appropriate for my child?
A. It depends on how old you’re child is, and what is the fluoride level in your drinking water that your child drinks every day. If your drinking water contains less than 0.3 ppm fluoride and your child’s several teeth are affected with decay, your dental surgeon will prescribe a right dose of fluoride toothpaste for your child; consult with your dental surgeon.

7.9. Q. Can my child use adult toothpaste?
A. Yes, the same adult toothpaste (1000 ppm or 1,500ppm or more will work, but again your dental surgeon will decide the exact strength of fluoride in the paste. There is no need to buy a child’s toothpaste separately. Your dental surgeon is the right person to write a prescription (of particular toothpaste of specific ppm level of Sodium Fluoride) for your child. A smear (less than 0.3 ml) of tooth paste is sufficient for the children age less than three years, and a pea-size toothpaste is advisable for the children of 3 years old and above, and the same can be continued until the age 9 years. After 9 year old you can take 1 cm paste (contains 1-1.5 mg Sodium fluoride) from your toothpaste tube, this is also used by the adults.

Make sure your child is not washing his/her mouth immediate after brushing, at less 30 minutes is required to act on the enamel of the tooth, after that the child will spit out. Do not allow him/her to swallow.

Q.7.10. Up to what age a child may need parental/carer’s supervision for tooth cleaning practice?
A. Up to 6 years old, but sometimes you may need to supervise up to 7 years old, provided the child has a reasonable dexterity (can hold the brush and use them properly) of tooth cleaning skill, and the child can avoid the swallowing of the toothpaste rather spitting them out after 30 minutes. Mentally and physically challenging children may need life-long supervision during tooth brushing. The electric tooth-brush may help; but both the manual and electric tooth brushes are equally efficient.

Q. 7.11. Do you have an advice regarding the age from when I can start brushing of my child’s tooth?
A. Six months of age, and in fact as soon as the first tooth is erupted inside the mouth cavity of your child, is the best time to start brushing.

Q.7.12 What is the main source of fluoride?
A. Water that we drink daily.

Q. 7.13. What should be ideal the level of fluoride in my drinking water?
A. Your drinking water must have 0.8 ppm to 1.5 ppm. But some places even more than 1 ppm may affect the teeth -- a very mild grade tooth mottling is also seen. If the level of fluoride is less than 0.3
ppm, your teeth enamel is not strong enough to prevent dental decay then. Therefore you need to consult with your dental surgeon.

Q.7.14. **Is there another source of fluoride?**
A. Yes, fish, tea, cereals have high amount of fluoride

Q.7.15. **What is the safe dose of fluoride to avoid a toxic effect, if at all?**
A. One mg/kg body (for exam 60 kg adult takes 1mgx60= 60 mg) is safe. And we call it Safely Tolerated dose (STD)

Q.7.16. **What is the toxic effect of fluoride?**
A. Uncontrolled use of fluoride from drinking water (more than 2 ppm, sometimes 1 ppm) including toothpaste, fluoride mouth wash, fluoride gel, and frequent eating of high level of fluoride in food and drinks may cause mild to moderate grade of dental fluorosis (mottled tooth). Excessive fluoride may affect your bone by lowering the bone density and stiffening of the joint muscles, we call them musculo-skeletal fluorosis. If you take 5mg/kg body weight (for example 60 kg adult will ingest 5mgx60=300 mg ) is toxic. We call it potentially lethal dose (PDL). You may need immediate hospitalization to treat with high volume milk ingestion and empting of the excess fluoride. Fluoride is absorbed from stomach; therefore, milk in stomach will bind the fluoride to prevent absorption of fluoride.

Q.7.17. **What is the dose of fluoride that can kill a person, I mean is there any killing dose of fluoride?**
A. Yes, very excessive dose can kill you. if you take 32-64 mg /Kg body weight (example 60 Kg adult if takes 32mgx60= (1920 mg, i.e., 1.92gm ), you may die. We call this dose Certainly Lethal Dose (CLD). You MUST need very urgent hospitalisation to save your life then. Emergency doctors may inject calcium gluconate through your vein

Q.7.18. **What shall I do if my child eat (ingest) a large amount toothpaste?**
A. In that situation, you need arrange to send your child to the hospital/ poison control unit. Toothpaste contains anti-sensitivity agent such as a nitrate compound, and nitrate can also cause more serious problems if that is taken at a high amount.

Q.7.19. **If I do not have easy access to hospital, which I shall do for my child?**
If you do not have quick access to a hospital, you try to stimulate your child (gently inset your index finger in the back of your child’s mouth) to induce vomiting, but this is not usually advised, because, the child may aspires vomit and may suffer from choking. You may give a full glass of milk or yogurt. The calcium from milk/yogurt will bind fluoride and stop/slow down the absorption of fluoride in the stomach. You should note that 1 cm long of a tooth paste squeezed out from a tube contains 1-1.5 mg of Fluoride, and 2 g is a killing dose). Therefore, if your child ingests a full tube contain 75ml of toothpaste, your child might ingest 75mg-112mg of fluoride, which is below the lethal dose, i.e. 2g.

Note: Most brands have a volume of 12ml to 25ml and only weigh between 19g and 45g. Compare that to a standard tube of toothpaste, which usually has a volume of 75ml and weighs between 90g and 100g. However, your dental surgeon can help calculate of the amount of fluoride your child had them from toothpaste, buy your dental surgeon may also transfer your child to poison control centre immediately.
Q.7.20. What a hospital doctor will do to save a life from fluoride poisoning?
A. If your child has eaten less than 5mg fluoride/kg body weight—large volume of milk would work but if more than 5mg/kg body weight, your dental surgeon will send him to the hospital for gastric wash. In case a delar, an IV calcium gluconate will be injected and an emetic (vomit inducing drug) is needed.

Q.7.21. What is APF gel fluoride? Is it safe?
A. APF gel means Acidulated Phosphate Fluoride. Its dose is 1.23% (Fluoride =12.3mg/ml)

Q.7.22. Are there another type of toothpaste, are they better?
A. There are toothpaste known as silver diamine fluoride (SDF) and the stannous fluoride toothpaste. These toothpastes are equally effective.

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Consultation schedules

12 Oct, Friday 2018 at 10:30 AM at 6th Floor of Dept of Oral Biology of ABSMIDS: The draft document was discussed in a small group face-to-face meeting for rectification by a committee (ad-hoc steering body)*.

*Scientific committee: from relevant discipline and of interest-group: Public Health Dentistry, Paediatric Dentistry, Oral Pathology & Microbiology, Pharmaceutical science, Pharmacology, Oral Medicine, Oral Biochemistry and Physiology, Bio-regulation and re-generation of hard tissues including foreign experts.
15 Oct Monday, 2018, draft consultation paper was distributed: The consulted draft sent in email to the identified clinicians, researchers and learned organizations across the Karnataka state including the experts at home and abroad.

23 Oct. Wednesday 2018: After email approval a workgroup meeting was held on the consultation paper the final draft was approved by the IAOB Council for Scientific affairs for submission to the statutory bodies/ learned organisations, practicing dentists and dental colleges in India. A work-shop and seminar will be held to inform the practising dentists for prescribing the fluoride (of different ppm level) or non-fluoride tooth-paste. The regulatory body in Karnataka, India will be communicated by IAOB to ensure package warning, proper instructions and the dose highlights by the manufactures of toothpaste and other oral health care products in India, and a QC will be a need to ensue periodically. The IAOB executive committee will discuss the agenda on next EC meeting to delegate to the IAOB Council for Scientific Committee and any specialist group. Fluoridation of central supply water where fluoride level is 0.3 ppm or less will be discussed and an ad-hoc committee will be formed to proceed with an action-plan regarding fluoridation of supply water.
Appendix i: Fluoride Prescription: Scenario-based guidance

Scenario 1

Ms Anitha Rai visited your practice with her 6 months old healthy daughter Shreya. The child is on breast milk and sometimes her mother gives her cow’s milk and sweet orange juice in a feeding bottle. The child has two front teeth in her bottom jaw which erupted just 15 days ago, and it seems both the teeth are caries-free. The mother knows how to clean her daughter's teeth, but she doesn't know whether her daughter will need any special type of toothpaste. They reside in the Shimoga district of Karnataka, where the level of fluoride in drinking water is 0.07 ppm. Should you prescribe toothpaste for her daughter? If yes, then what should the concentration of fluoride in ppm (or its w/w % of fluoride) be? Do you prefer to prescribe another type of fluoride-containing product?

Management case 1

Risk status of caries: High

Reason: The child lives in a low fluoride water area. The fluoride concentration in their drinking water is 0.07 ppm. Moreover, the child takes frequent sweet drinks.

Type of toothpaste: A toothpaste containing 1,000 ppm (0.1% Na F-).

Amount of tooth paste on the toothbrush: A smear

Type of toothbrush: Small head with soft bristle, with the tip of the bristles rounded.

Brushing technique: Fones (Fones circular)

Frequency of brushing: At least 2 times a day, and particularly just before going to sleep at night. Properly trained parents/carers will assist with brushing of the child’s teeth.

Instructions for the parents/carers: The frequency and amount of sweet drinks consumed will be reduced, and after any drink or food intake the mouth cavity of the child will need to be rinsed gently with normal tap water.

The child must spit out the toothpaste: The child will be assisted with spitting out the toothpaste whilst brushing of his/her teeth by the parents/carers. It is essential that the child must not swallow the toothpaste.

Caution: Keep the toothpaste out of reach of children.

Another form of fluoride preparation: not required.

Recall visit: At least twice a year, or set out a recall schedule by the dental surgeon. After the eruption of permanent teeth, the fluoride toothpaste should be continued, and a fluoride supplementation will be required if the child experiences holes ascribable to caries.
Scenario 2

Ms. Nanditha Shetty attended an appointment with her 2 year 6 month old son Dayanand, who had a large occlusal cavity in his upper right deciduous tooth. You decided to proceed with a restoration at the site with ART filling. It appears that the mother of the child is not taking the care of her child’s tooth seriously. The child has another small hole in an upper central incisor (Primary) on the palatal side. The child lives in the Mangalore city area where fluoride level in drinking water is 0.3 ppm. After restorations of the cavities, you will need to prescribe toothpaste for the child: what type of toothpaste will you recommend?

Management of case 2

Caries risk status: Very High
Reason: The fluoride level in drinking water is only 0.3 ppm (below the normal range: 0.8-1.5ppm), and two teeth has already developed caries

Type of toothpaste: Toothpaste containing 1,000 ppm (0.1% w/v NaF-) fluoride.
Size of the paste on the brush: Just a smear
Frequency of brushing teeth: Assisted tooth brushing, at least 2 times a day, and especially the last thing at night before retiring to sleep.
Do not allow your child to swallow the toothpaste: The child must not swallow the toothpaste; please ensure that they spit it out satisfactorily.
Caution: Keep the toothpaste out of reach of children.
Advice: The intake frequency and amount of sweet drinks, milk (mother’s, cow’s milk, or formula milk) must be reduced, and these drinks should be replaced with sugar-free versions.

Another form of fluoride preparation: Fluoride Varnish
Method of brushing technique: Fones (Fones circular technique)
Type of toothbrush: Small headed brush with soft bristles and a rounded tip.
Recall frequency: Six-month
Scenario 3
Ms. Vinayaka arrived at your practice with a 5 year old child Yogesh, who had three decayed primary teeth. They live in the Udupi area where the fluoride level in the drinking water is 0.37 ppm. Please write a fluoride prescription for Yogesh.

Management of case 3
Risk status of caries: Moderately High
Reason: The child lives in a low fluoride content water area (0.37 ppm in drinking water, i.e. > 0.3 ppm), and the child consumes sweet drinks frequently, having three carious teeth.

Type of toothpaste: Toothpaste containing 1,000 ppm (0.15% w/w) fluoride.
Amount on the toothbrush: Pea-sized
Type of toothbrush: Small head with soft bristles; the tip of the bristles should be rounded.
Brushing technique: Fones (Fones circular)
Frequency of brushing: At least 2 times a day, after breakfast and before retiring to sleep. Properly trained parents/carers will supervise or perform brushing of the child's teeth carefully

Instructions to the parents/carers: Sweet drink consumption should be diminished significantly (both frequency and the amounts), and immediately after ingestion of such sweet drinks, and/or milk (mother’s or cow’s milk, formula milk etc.), the child's mouth cavity is required to be rinsed gently with normal tap water.

Child must spit out the toothpaste: The child will be assisted to spit out the toothpaste whilst brushing of his/her teeth by the parents/carers. The child must not swallow the toothpaste.

Caution: Keep the toothpaste out of reach of children.

Another type of fluoride preparation: Fluoride varnish
Recall visit: The parents/carers of the child should be advised for recall visits, at least twice a year, or alternative schedule set out by the dental surgeon. After the eruption of permanent teeth, fluoride toothpaste must be used without delay, and a fluoride supplementation should be prescribed too.

Scenario 4
Seven (7)-year old Harrish attended the dental surgery with his father (Mr Akilesh) for a treatment of his son’s first lower right carious molar tooth. He lives in the Pavagada area. His upper front teeth have mild fluorosis. Their drinking water contains an excessive level of 2.5 ppm F. What toothpaste will you prescribe for Harrish? Please also suggest a suitable treatment.
Management case 4

Risk status of caries: Low for caries, but high risk of dental fluorosis

Reason: The child lives in the area where water has 2.5 ppm, a risk of development of mottled teeth.

Type of toothpaste: Fluoride-free toothpaste is recommended

Advise: Use of Non-fluoride Caries Preventive Agents
These include sucrose free Polyol chewing gums, chlorhexidine thymol varnish, chlorhexidine varnish and chlorhexidine rinse..

Amount of toothpaste on the toothbrush: 1 cm long (equivalent to 1 mg 1.5 mg fluoride in fluoridated toothpaste)

Type of toothbrush: Small head with soft bristle, and the tip of the bristles should be rounded.

Brushing technique: Fones (Fones circular)

Frequency of brushing: At least 2 times a day, after breakfast and prior to going to sleep at night. The child can perform the toothbrushing by himself, but parental supervision is also required

Child must spit out the toothpaste on completion of brushing: The child will spit out the toothpaste whilst brushing (assisted) of his/her teeth by the parents/carers. The child must not swallow the tooth-paste..

Caution: Keep the toothpaste out of reach of the children.

Another form of fluoride preparation: No

Recall visit: The child patient will be advised for recall visits at least twice a year, or as set out by the dental surgeon to assess his fluorosis regression following treatment and intervention.

Scenario 5

Six (6-year old Sherin presented at your clinic with her uncle for an annual check-up. All Sherin's teeth are free from caries. She lives in Ramanagara where Fluoride in drinking water is 0.21 ppm. Prescribe toothpaste for Sherin.
Management case 5

Risk status of caries: Moderate risk

Reason: The child lives in low fluoride water area (0.21 ppm in drinking water)

Type of toothpaste: Toothpaste containing 1,000 (0.1% w/w) fluorides.

Amount on the toothbrush: A pea-size (0.3ml)

Type of toothbrush: Small head with soft bristles; the tip of the bristles should be rounded.

Brushing technique: Fones (Fones circular)

Frequency of brushing: At least 2 times a day, after breakfast and prior to retiring to sleep at night. Properly trained parents/carers should perform brushing (assisted) of the child’s teeth carefully

Instructions to the parents/carers: Sweet drinks should be reduced in frequency and intake amounts; after receiving sweet drinks and/or milk (mother’s or cow’s milk, formula milk etc.), the child’s mouth cavity is required to be rinsed gently with normal tap water.

The Child MUST spit out the toothpaste: The child will be assisted with spitting out the toothpaste whilst brushing his/her teeth by the parents/carers. The child must not swallow the toothpaste.

Caution: Keep the toothpaste out of reach of children.

Another form of fluoride preparation: No

Recall visit: The parents/carers of the child will be advised for recall visits at least twice a year, or as set out by the dental surgeon. After the eruption of permanent teeth, fluoride toothpaste is a major and immediate requirement, and fluoride supplementation will also be required. The child may also require a fissure sealant if any of the permanent molars develop caries. Moreover, if the child has a history of decayed primary teeth, you will certainly require fissure sealants and a strict follow-up.

Scenario 6

46-year old Vhimal has 3 teeth with reversible pulpitis, and 2 root-filled teeth; 3 teeth are missing. On completion of the treatment, you will prescribe toothpaste. Vhimal lives in the Kolar area where the drinking water fluoride level is actually 3.06 ppm. He does not have any mottled teeth. He started living in Kolar when he was 18-years old.
Management case 6

Risk status of caries: high; Risk status of fluorosis: Low

Reason: An adult 46 yrs old lives in the area where the drinking water has high fluoride level (3.06 ppm); risk of development of mottled teeth is low, because he started living in fluorosis endemic area when he was 18-years old.

Type of toothpaste: High fluoride toothpaste ( 2,500 ppm = 0. 25% F or more), He may need Fluoride Varnish 3 years a year and will be applied by a dental surgeon

Amount of toothpaste on the toothbrush: 1 cm long (contains 1 mg to 1.5 mg fluoride)

Type of toothbrush: Small head with soft bristle, with the tip of the bristles rounded.

Brushing technique: Bass (Sulcular method)

Frequency of brushing: At least 2 times a day, especially prior to retiring for sleep at night.

Must spit out the toothpaste: 30 minutes to allow the fluoride from tooth paste remain within the oral environment to strengthen the patient's tooth enamel

Another form of fluoride preparation: No

Caution: Keep the toothpaste out of reach of children.

Recall visit: Advised for recall visits at least twice a year, or as set out by the dental surgeon. Carefully assess the severity of fluorosis

Scenario 7

Ratna is 5 years old and attended the surgery with her mother for the treatment of several milk teeth, which were affected by dental decay in most of the primary teeth (premolars and molars) in both of her jaws, including upper front teeth (lower front teeth are also expected to be affected soon). The child is on-demand sweet drinks, and breast milk. Manage the case and advice with appropriate toothpaste and any supplemental treatment managements that the child may need. She lives in the Mangalore city area where the drinking water contains 0.63 ppm fluoride.

Management case 7

Risk status of caries: Very High

Reason: The child lives in relatively low drinking water fluoride content area (0.63 ppm), and ingests a high level of sweet drinks, and also on-demand breast milk.
**Type of toothpaste:** An adult/children’s tooth paste of 1,000 ppm (0.1% w/w) fluoride will be acceptable.

**Amount on the toothbrush:** pea-sized

**Type of toothbrush:** Small head with soft bristle, with the tip of the bristles rounded.

**Brushing technique:** Fones (Fones circular)

**Frequency of brushing:** At least 2 times a day, especially immediately prior to retiring to sleep at night. Properly trained parents/carers should perform brushing of the child’s teeth very carefully.

**Instructions to the parents/carers:** Sweet drink consumption should be markedly reduced, both in terms of frequency and amount; after consuming sweet drinks and/or milk (mothers or cow’s milk, formula milk), the mouth cavity of the child is required to be rinsed gently with normal tap water.

**Child must spit out the toothpaste:** The child will be assisted in spitting out of the toothpaste whilst brushing his/her teeth by the parents/carers. The child must not swallow the toothpaste!

**Caution:** Keep the toothpaste out of reach of the children.

**Fluoride supplementation:** Fluoride varnish containing 2.2% fluoride (27,600 ppm) 2-3 times a year.

**Recall visit:** The parents/carers of the child will be advised reading the frequency of recall visits, which should occur at least twice a year, or as determined by the dental surgeon. Following the eruption of permanent teeth, a fissure sealant will be urgently required.

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**DOSE-GUIDE/ CHECK- LIST**

**PS. Please circle your right option before writing a prescription**

A. **Toothpaste:** 500 ppm (0.05% F) / 1000 ppm (0.1% F) / 1500 ppm (0.15% F) / 3000 ppm (0.3% F)

B. **Fluoride Mouth-wash:** 0.05% F mouthwash daily/ 0.2% F Weekly

C. **Fluoride Varnish:** None/ 5% F Gel twice a year

D. **Fluoride Tablet:** None/ 0.25mg once a day/ 0.5mg once a day/ 1mg once a day

[Note: **Amount of toothpaste on the tooth-brush:** A pea-sized/ a smear/ 1 cm Long
[A pea-sized contains 0.03ml, 1 cm long paste contains 1-1.5 mg F]]

**Online converter** You may use this [online calculator](#) to convert ppm fluoride units into % w/w ones

**Appendix - ii.**

**Further Reading**

1. Policy Statement 2.2.1 – Community Oral Health Promotion: Fluoride Use (Including ADA Guidelines for the Use of Fluoride): August 2017
3. Fluoride Review Guidelines: The University of Adelaide
5. British Fluoridation
9. Prevention and Management of Dental Caries in Children

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