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Dental, News & Features — 23 August 2015 at 9:44 pm

Expedition Dentistry: Toothpastes

Burjor Langdana / Adventure Medic Resident Dentist

Matt Edwards / STR Emergency Medicine

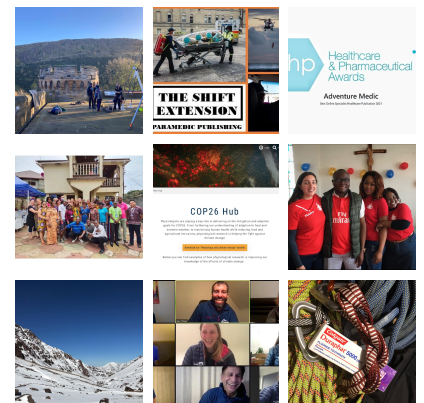
Maintaining a diet that is good for our teeth may be a struggle in wilderness or extreme athletic situations. It can be difficult to keep up our fluid intake, as well as brushing and flossing regularly. Choosing the right toothpaste can help mitigate these issues, but the choice can be confusing. Fear not however, as Adventure Medic's Resident Extreme Dentist Burjor Langdana swings in to the rescue.



Dental problems can wreck an expedition and be a source of considerable stress for medic and patient. Fortunately, it has never been so easy to prevent dental decay or control sensitivity as it is today. However, there is such a wide variety of toothpastes out there that the choice can be confusing. Indeed, not to choose the right one would be similar to an asthmatic climbing K2 without the right inhaler, and the best choice will depend on the activity, the location as well as the state of the mouth in question.

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Dental Needs	Toothpaste	Advantages	Limitations
Dentally fit and well	Colgate Total	Contains Triclosan (long term action)	Limited anti-sensitivity effect
Intermittent dental sensitivity	Sensodyne Rapid Relief, Colgate Pro-Relief or Oral-B Pro-Expert	Quickly block sensitive exposed portion of tooth	Relatively limited duration of action
Prolonged dental sensitivity	Sensodyne Repair & Protect	Contains Novamin (forms blanket over exposed dentine) and absence of water may help in extreme temperatures	Takes longer to act, so the earlier started the better. Longer and more durable anti-sensitivity action.
Teeth chipping and translucency	Sensodyne Pronamel	Minimally abrasive; high fluoride; numbs sensitive dentine	Relatively limited duration of action
Repeated dental decay	Duraphat 2800 or Duraphat 5000	Very high fluoride to reduce rate of decay	Available on prescription only
Aggressive gum disease	Corsodyl mouthwash and Corsodyl Daily toothpaste	Chlorhexidine proven effective against gum problems	Cannot use toothpaste for 30 minutes before/after mouthwash or action of chlorhexidine will be neutralised; Stains teeth by attracting tannins

Spit or rinse? / Always spit out excess toothpaste, rather than rinse, as they act better the longer they stay on the teeth.

Whitening / Whitening toothpastes are usually more aggressive and in expedition settings may predispose to increased sensitivity.

Anti-sensitivity / Don't chop and change different toothpastes, stick to the one that works for you and don't stop once sensitivity is reduced.

Tender gums after brushing? / May indicate allergy to the foaming agent sodium lauryl sulphate. Use non-foaming toothpastes such as Sensodyne Repair & Protect or Sensodyne Pronamel.

Herbal / Herbal toothpastes are generally more aggressive and have a lower concentration of active fluoride so in an expedition setting they may be of limited protective effect.

Freeze Resistance

We were curious as to how these toothpastes perform in the cold, so Burjor tried them out in -18-20°C.


Toothpaste	Freeze Resistance	Usable?
Oral B Proexpert	Remained unfrozen	Immediately
Sensodyne Pronamel	Remained unfrozen	Immediately
Sensodyne Repair & Protect	Partially frozen	After 2 mins
Colgate Sensitive Pro-Relief	Frozen solid	After 4 mins


Case Study 1 – The Extreme Athlete

An Iron Woman competitor notices that her front teeth are getting translucent. She is forming little caves on the top surface of her teeth, they are looking more yellow and flatter. Gradually her sensitivity is getting worse.


Why / High acid in her diet from energy drinks is dissolving her teeth enamel. This exposes the dentine which then cavitates.


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Case Study 2 – The High Altitude Climber

You are planning to climb a Himalayan peak. You have always had sensitive teeth but in cold weather your gums get tender and the sensitivity gets worse.

Why / Recession of gums exposing the inner dentine, close to gum line. This part of the tooth (dentine) is rich in tubes that end in nerves. When fluid touches the tubes, nerves are stimulated leading to sensitivity.

Toothpaste / Sensodyne Repair and Protect: needs to be started a few weeks before the expedition. The toothpaste contains Novamin which will form a resistant coating on the sensitive portion of the teeth. This coating is hard and resistant but needs repetitive exposure to Novamin to keep it intact. Hence, continued brushing with Sensodyne Repair and Protect is needed even after sensitivity disappears. It does not contain the toothpaste foaming agent (sodium lauryl sulfate) so it's kinder to sore gums, as well as avoiding a mouth full of foam while high on a mountain. It does not contain water (as water activates Novamin) so it performs nicely in very low temperatures.

Case Study 3 – Jungle trekking

You are planning a long walk through the jungles of Burma. You have excellent teeth but have been told that you have weak gums. You have had gum treatment and are doing your best to maintain them.

Why / Aggressive gum disease is multifactorial. Good oral hygiene needs to be reinforced with the antiseptic provided by Corsodyl mouthwash and toothpaste.

Toothpaste / Corsodyl toothpaste: it contains ingredients to maintain gum health and fluoride.

Case Study 4 – Field workers or shift workers

Energy rich diets, hit and miss oral hygiene, more tooth decay is noted every dental check.

Toothpaste / Duraphat 2800: available on prescription, this toothpaste has a much higher fluoride content. The added protection helps overcome high decay rate.

Case Study 5 – You are planning a long desert walk

Maintenance of fluid intake and maintenance of oral hygiene is hard. Diet is energy rich in sugars.

Toothpaste / Duraphat 5000: small sized toothpaste tube with a big punch of fluoride. You only need a great pea sized amount to provide high protective fluoride boost on teeth.

Case Study 6 – Dentally fit and planning a long climbing trip to the Alps

Toothpaste / Colgate Total: contains Triclosan, helping increase its duration of protective action.

Case Study 7 – Dentally fit and backpacking around India for six months

You want to carry one toothpaste that will do everything.

Toothpaste / Oral B Pro-Expert: a good multifunctional toothpaste (or use Oral B Complete if you prefer something less gritty).

Case Study 8 – Sudden sensitivity

You are in the Alps. Suddenly you develop sensitivity on a few localised teeth. It's getting progressively more painfully and sensitive.

Toothpaste / Sensodyne Rapid Relief or Colgate Pro Relief: these act rapidly when they are first rubbed gently onto the sensitive teeth. Follow by a normal two minutes brushing with the same toothpaste.

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Authors' note: this article should be taken as a guideline based on our clinical experience and knowledge while working in the field. The best toothpaste is the one that works well for you. Sometimes (for reasons unknown) the suggested toothpaste does not help reduce your sensitivity but another one will. The article is written on the premise that the teeth are essentially healthy without evidence of fractures or leaky fillings.

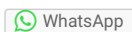
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