Care of dry mouth

Summary of a talk on 'Care of dry mouth' given at the BSSA Medical Meeting by Dr Louise Foster. Summarised by Dr Elizabeth Price, BSSA Trustee and Medical President

Dr Foster routinely looks after patients with head and neck cancer who have undergone radiotherapy and developed a very dry mouth as a result, but over the years she has also cared for patients with Sjögren's and developed an expertise in the care of the dry mouth in these patients as a result.

Dr Foster explained that dry mouth causes all sorts of problems which can include soreness, pain on eating, increased dental decay, especially affecting the root surface of the teeth, gum disease, tooth erosion, tooth sensitivity and fungal infections of the mouth.

She had noted that the advice on the BSSA website is based on basic dental advice and wanted to build on this during her talk.

Dr Foster explained the different constituents of the teeth. Hard, shiny enamel is found only on the crown of the tooth. The rest of the tooth is made up of softer dentine surrounding a central nerve. Where there has been recession and the dentine is exposed then reduced saliva encourages increased food accumulation around the necks of the teeth where it can cause gingivitis (inflammation of the gums) and periodontitis (bone loss around the roots of the teeth) and decay of the roots.

The lack of saliva also encourages acid erosion causing tooth wear to the enamel and sensitivity to exposed root dentine. Cold sensitivity is a particular problem. Another problem caused by lack of saliva is increased frequency and prevalence of fungal infections in the mouth. Many patients also experience difficulty swallowing and chewing.

Dr Foster went on to explain that in a healthy mouth saliva reduces plaque build-up (food debris and bacteria). Loss of saliva leads to food build up especially between the teeth and around the necks of teeth encouraging decay. In the absence of adequate amounts of saliva, food sticks in the mouth, and its lubricating properties are lost. Saliva also buffers (i.e. neutralises) acid from the diet, plaque and gastric juices and increases the pH within the mouth.

There is a circadian (day/night) rhythm of saliva production – saliva flow reduces overnight naturally. Our background saliva is from the submandibular, sublingual and minor salivary glands.

Saliva production from the parotid glands is stimulated when you chew.

Dr Foster explained that acid reflux is a fairly common problem which can make the situation in the mouth worse. It may be worth considering drugs which reduce acid secretion e.g. omeprazole or ranitidine etc to reduce acid reflux.

Thus saliva helps 'heal' enamel and dentine and makes the mouth more alkaline. A pH of 7 is neutral, a dry mouth is generally more acidic than this. Food containing sugars is broken down by bacteria in the plaque to make acids which causes decay in the enamel below pH5.5 but the dentine decays just below neutral. So it is critical we ensure that the pH of the mouth is kept at neutral as much as possible and particularly overnight. She also advised that diet and frequency of intake of sugary containing food and acidic foods and drinks such as juices, squashes, fizzy drinks are important. Teeth need breaks between eating and drinking for the pH to recover. She recommended at least a 2 hour gap between eating although we are allowed plain water. Tea or coffee without sugar are also OK but nothing else!

Xylitol is an artificial sweetener found in sugar free chewing gum. Xylitol has been shown to change the bacteria in the mouth from 'bad' to 'good' and stimulate the parotids to produce more saliva. Increased amounts of natural saliva improves the pH within the mouth reducing the risk of decay.

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Dr Foster advised that we should avoid acidic drink or food near bedtime. She explained that high fluoride toothpaste e.g Duraphat 5000, can be helpful in aiding re-mineralisation of teeth, especially overnight.

Dr Foster advised the use of a good quality toothbrush. She discussed the use of electric toothbrushes and recommended that we choose a re-chargeable one with an oscillating head. She also advised that a manual toothbrush can be just as good providing it was used correctly. She recommended a 'sensitive' toothpaste eg Colgate pro-relief for areas of sensitivity and recommended that we massage this into sore areas. She advocated the use of small interdental brushes (e.g. Tepes or Curaprox brushes) to reach the hard to get at areas between teeth. She felt that floss and tape are not so effective on roots, brushes are better and suggested 'Wisdom interdentals' which are rubbery and easy to use for those who struggle with brushes or have tight gaps between teeth.

Dr Foster recommended that we brush 2 – 3 times per day. Aim to do the most intensive 'clean' before bedtime. Start by cleaning between the teeth with an interdental brush and rinse. Then use a pea sized amount of high fluoride toothpaste (eg 5000ppm) on the toothbrush and brush carefully making sure not to miss any tooth surface. Then rinse, to ensure that the mouth is clean. It is then necessary to put in more toothpaste, and swish and spit.

Some patients find Sodium Lauryl Sulphate (SLS), a foaming agent, difficult to tolerate. Duraphat has SLS in, as do many toothpastes but most Sensodyne toothpastes are SLS free.

Dr Foster recommended the use of a calcium and phosphate supplement containing Recaldent e.g. tooth mousse or GCMI paste (additionally contains 900ppm of fluoride) to further protect the dentine from decay. This is particularly helpful overnight as it neutralises acid and acts as a calcium reservoir.

With regard to saliva substitutes Dr Foster recommends that we generally avoid glandosane as it has a low pH in the acid range. Bioxtra products and GC dry mouth gel and many others are pH neutral and also contain fluoride (see accompanying table). She recommended that we look up advice on saliva substitutes by 'googling' 'Saliva Substitues UKMI' to see up to date guidance.

Other useful aids that may be of practical help when cleaning teeth include baby toothbrushes or interspace brushes, Waterpik or Airflossers to get between the teeth and clean difficult to access areas.

Dr Foster then discussed the important role of diet in decay. She categorised foods as safe and not safe for teeth. Safe foods include those with intrinsic sugars such as milk sugars and fruit sugars, basic starches including rice, pasta and bread. She advised that the following foods were not 'tooth' safe fruit juice, honey, dried fruit and that potentially harmful sugars were 'hidden' in ketchup, processed foods and highly refined starches such as those found in square crisps, cheese and onion crisps. Dr Foster advised that at the end of meal we should rinse our mouth and could consider ending the meal with 'tooth friendly' foods. To our surprise these included a square of dark chocolate (but only those with very high coca solids). Alternatives included mature cheese and peanuts which have been shown to increase plaque pH and counteract acidity. She strongly recommended chewing xylitol containing chewing gum after meals to encourage the production of saliva.

Dr Foster told the audience about the 'Change4life campaign'. The organisers of this have designed a free smartphone app which will allow you to use a barcode scanner when shopping to work out if sugar is hidden in foods. It is very user friendly and shows sugar amounts in an easy understand format of 'cubes'. It can be found by typing 'sugar smart' into the app store on your phone/tablet.

To minimise decay Dr Foster came up with the following plan –

- Only drink water at night time and for one hour before the night time brush.
- Keep hydrated by taking sips of water, or tea or coffee with no sugar or suck ice cubes.
- Have 2 hours gaps between eating and drinking other than water or tea or coffee without sugar.
- Eat 5-6 times maximum per day (breakfast, mid-morning, lunch, afternoon, dinner).
- Chew sugar free chewing gum containing xylitol for between 5-20 minutes after eating.
- Have a little mature cheese at meal times.

To minimise tooth wear Dr Foster made the following recommendations –

- Brush no more than 2-3 times per day.
- Do not brush after acid food and drink for at least 1 hour.
- Limit the time over which acid containing drinks are consumed to a maximum of 20 minutes.
- Drink acid containing drinks (juices, squash, fizzy drinks) ice cold with lots of ice.
- Use a drinking straw placed behind the front teeth.

Dr Foster then discussed what dentists can do to help. She suggested that they see you every 6 months, check your prevention and consider 12 rather than the more usual 24 monthly x-rays of your back teeth if you have a very dry mouth. They may also apply fluoride varnish as a preventive measure and should consider early intervention by sealing small fissures and cracks. Dentists can also monitor for gum disease. Early fillings where decay has progressed into the dentine may avoid more advanced treatment in the future.

Dr Foster summarised by advising that those with a dry mouth –

- Brush with a high fluoride containing toothpaste 2-3 times per day.
- Use interdental brushes before bedtime.
- Ensure that the mouth is free from debris at night time.
- The teeth are encased in fluoride and Recaldent (tooth mousse) overnight.
- Have gaps of 2 hours between eating and drinking other that water or tea or coffee no sugar.
- Drink only water one hour before bed and during the night.
- Use sugar free gum containing xylitol.
- Ensure any medication is taken before brushing teeth.