Xerostomia Risk Pathway

Adults Caries Risk Assessment

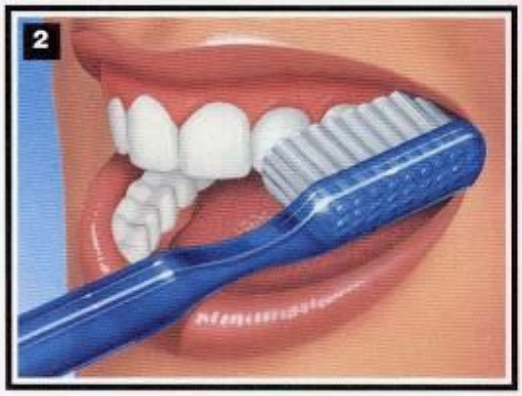
	Low Risk	Moderate Risk	High Risk
Contributing Conditions			
Fluoride exposure	Yes	No	
Sugary Foods or Drinks	Primarily at mealtimes		Frequent or prolonged between meal exposures/day
Caries experience of mother, caregiver and/or other siblings.	No carious lesions in last 24 months	Carious lesions in last 7-23 months	Carious lesions in last 6 months
General Health Conditions			
Special Health Care Needs	No	Yes	
Chemo/Radiotherapy	No		Yes
Eating Disorders	No	Yes	
Medications reducing salivary flow	No	Yes	
Drug/Alcohol Abuse	No	Yes	
Clinical Conditions			
Carious Lesions or Restorations	No new within previous 36 months	1 or 2 new lesions in last 36 months	3 or more new lesions in last 36 months
Visible plaque	No	Yes	
Exposed root surface	No	Yes	
Dental/Orthodontic Appliances	No	Yes	
Severe Dry Mouth (Xerostomia)	No		Yes

How To Brush

Modified Bass brushing technique:

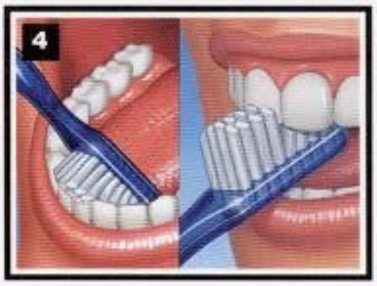
- Hold the head of the toothbrush horizontally against your teeth with the bristles part-way on the gums
- Tilt the brush head to about a 45-degree angle, so the bristles are pointing under the gum line.
- Move the toothbrush in very short horizontal strokes so the tips of the bristles stay in one place, but the head of the brush waggles back and forth. Or use tiny circular motions. This allows the bristles to slide gently under the gum. Do this for about 20 strokes. This assures that adequate time will be spent cleaning away as much plaque as possible. Note: this is a very gentle motion. In healthy gums, this should cause no pain. Brushing too vigorously or with large strokes can damage gum tissue.
- Roll or flick the brush so that the bristles move out from under the gum toward the biting edge of the tooth. This helps move the plaque out from under the gum line.
- Repeat for every tooth, so that all tooth surfaces and gum lines are cleaned.
- For the insides of your front teeth, where the horizontal brush position is cumbersome, hold the brush vertically instead. Again, use gentle back and forth brushing action and finish with a roll or flick of the brush toward the biting edge.
- To clean the biting or chewing surfaces of the teeth, hold the brush so the bristles are straight down on the flat surface of the molars.
- Gently move the brush back and forth or in tiny circles to clean the entire surface. Move to a new tooth or area until all teeth are cleaned.
- You can clear even more bacteria out of your mouth by brushing your tongue. With your toothbrush, brush firmly but gently from back to front. Do not go so far back in your mouth that you gag. Rinse again.

Place bristles along the gumline at a 45° angle. Bristles should contact both the tooth surface and the gumline.



Gently brush the outer tooth surfaces of 2-3 teeth using a vibrating back, forth & rolling motion. Move brush to the next group of 2-3 teeth and repeat.

Maintain a 45° angle with bristles contacting the tooth surface and gumline. Gently brush using back, forth & rolling motion along all of the inner tooth surfaces.

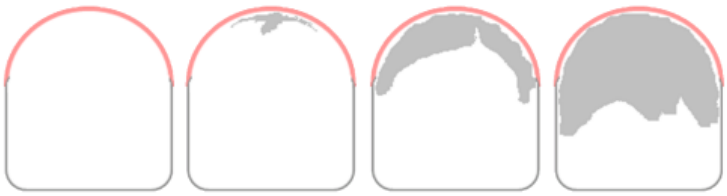


Tilt brush vertically behind the front teeth. Make several up & down strokes using the front half of the brush.

Place the brush against the biting surface of the teeth & use a gentle back & forth scrubbing motion. Brush the tongue from back to front to remove odor-producing bacteria.

3.4.8 Assessing toothbrushing

Gingival health is a useful indicator of tooth cleaning over time. Assessing and recording levels of visible plaque at each examination, and sharing this information with the child and their parent/carer, will help reinforce the importance of effective toothbrushing. An example of a quick method of recording plaque levels, and presenting the information in terms the child will understand, is to give marks out of 10 as follows.



perfectly clean tooth	plaque line around the cervical margin	cervical third of the crown covered	middle third covered
10/10	8/10	6/10	4/10

The worst score in each sextant is recorded, for example:

8/10	6/10	8/10
8/10	6/10	8/10

It is also important to assess the surface of open carious lesions for plaque that is visible or evident when an instrument is gently drawn across the surface of the lesion, particularly if considering managing the lesion with a prevention-alone approach (Section 10.1).

- Assess whether the gingiva appear healthy or whether there is inflammation indicative of poor plaque removal.
- Consider recording plaque scores at each examination, particularly if the child is assessed as at increased caries risk.
- Record the presence of plaque on the surface of open carious lesions at recall visits for lesions where the prevention-alone management strategy has previously been selected (see Section 10.1).

Diet Diary: Record of Food and Drinks Consumed by ……

Please write down everything you (or your child if completing on their behalf) eats or drinks and the time during the day when consumed – this will help us to advise you on how best to improve your diet. Please also include the time you brush your teeth and go to bed.

Time	Day 1

Time	Day 2

Time	Day 3

Notes/Additional Items

Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Check the label on packaged foods

Each serving (150g) contains

Energy	Fat	Saturates	Sugars	Salt
1046kJ 250kcal	3.0g	1.3g	34g	0.9g
	LOW	LOW	HIGH	MED
13%	4%	7%	38%	15%

of an adult's reference intake
Typical values (as sold) per 100g: 697kJ/ 167kcal

Choose foods lower in fat, salt and sugars

Eat at least 5 portions of a variety of fruit and vegetables every day

Fruit and vegetables

Raisins, Chopped tomatoes, Frozen peas

Choose wholegrain or higher fibre versions with less added fat, salt and sugar

Potatoes, bread, rice, pasta and other starchy carbohydrates

Potatoes, Whole grain cereal, Cous Cous, Porridge, Whole wheat pasta, Bagels, Rice, Spaghetti

Beans, pulses, fish, eggs, meat and other proteins

Lentils, Beans lower salt and sugar, Tuna, Lean mince, Plain nuts, Chick peas

Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less red and processed meat

Dairy and alternatives

Low fat soft cheese, Semi skimmed milk, Soya drink, Plain Low fat Yoghurt

Choose lower fat and lower sugar options

Oil & spreads

Veg Oil, Lower fat spread

Choose unsaturated oils and use in small amounts

Eat less often and in small amounts

Water, lower fat milk, sugar-free drinks including tea and coffee all count.

Limit fruit juice and/or smoothies to a total of 150ml a day.

Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

Source: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

Very Brief Advice on Smoking for Dental Patients

NCSCT

Authors: Sophia Papadakis and Andy McEwen

First edition October 2018

What is Very Brief Advice on Smoking?

Very Brief Advice on Smoking (VBA) is a simple piece of advice that is designed to be used opportunistically in less than 30 seconds in almost any situation with a smoker. What may be surprising is that you do not advise smokers to stop, and you do not ask how much they smoke or even if they want to stop.

The figure overleaf shows the three elements to VBA: establishing and recording smoking status (**ASK**); advising on how to stop (**ADVISE**) and offering help (**ACT**).

Offering VBA is the single most cost effective and clinically proven preventative action a healthcare professional can take[1] and it is important to keep giving advice at every opportunity, as smokers may take several attempts to stop smoking successfully.[2]

In addition, by referring a patient to a local stop smoking service, they are four times more likely to stop smoking.[3] Research shows that 95% of patients expect to be asked about smoking and a short intervention can make all the difference.[4,5]

Very Brief Advice on Smoking

30 seconds to save a life

ASK

AND RECORD SMOKING STATUS

"Do you smoke?"

ADVISE

ON THE MOST EFFECTIVE WAY OF QUITTING

"Did you know that the best way of stopping smoking is with a combination of medication and specialist support. If you are interested I can refer you to our local friendly stop smoking service that many of my patients have found useful?"

ACT

ON PATIENT'S RESPONSE

INTERESTED	NOT INTERESTED
Give information. Prescribe medication and refer to local stop smoking service. Patients are four times more likely to quit with support	*"It's your choice of course. Help will always be available. Do let me know if you change your mind."*
REFER to local stop smoking service	**REASSESS at future visits**

The important role of dental team in smoking cessation

Dental professionals have a unique opportunity to address smoking with patients in a manner that will make a difference and won't damage your relationship with patients.

Brief advice from a dentist or member of the dental team has been shown to increase your patient's motivation to quit and can double a patient's success with quitting.[6]

Addressing tobacco use with patients should be a priority for all members of the dental team and will result in improved oral health and outcomes for patients. It is important for dental professionals to be aware of simple techniques for motivating your patients who smoke to quit and informing them of the availability of evidence-based treatments such as quit smoking medications and counselling support.

How does smoking affect the mouth?[7]

- Tar deposited in the mouth causes discolouration to teeth enamel, a coated tongue and halitosis
- Alterations in taste and smell
- Impairment of salivary function, immune responses and blood flow
- Reduced periodontal blood flow results in a change in oral microflora composition, favouring the presence of anaerobic bacteria
- Changes in bone metabolism such as an increased secretion of the bone resorbing factors
- PGE2 and IL-iB74 or a decrease in intestinal uptake of calcium
- Carcinogens present in tobacco smoke can cause changes that give rise to oral cancers

What is the relationship between smoking and oral health?

Research has shown that, compared to those who have never smoked, smokers have an increased risk of developing:

- **Oral cancer** – smoking causes 80 – 90% of oral cancers (mouth, tongue, lips, and throat use).[7,8] Cancer risk is significantly associated with the amount of cigarettes smoked.[7] Tobacco smoke works synergistically with alcohol to increase the risk of oral cancer.[7]
- **Oral leukoplakia and epithelial dysplasia**[9,10]
- **Periodontal disease, dental caries and tooth loss** – cigarette smoking is a major risk factor for periodontal disease onset and progression.[7,11–16] The risk of tooth loss is about two to four times greater in current smokers compared to never smokers and there is a dose dependent association between the amount smoked and risk of tooth loss.[7,11–16] Rate of bone loss almost four times greater than in non-smokers.[13]
- **Oral candidosis**[7]
- **Impaired treatment response and healing**[7] – smoking causes a lack of oxygen in the bloodstream, leading to the infected gums not being able to heal.

Effects of smoking on oral health

- Increased risk of oral cancer
- Higher risk of periodontal disease
- Teeth discoloration
- Reduced blood supply to mouth
- Increased build up of dental plaque
- Delayed healing following tooth extraction, periodontal treatment or oral survey
- Bad breath (halitosis)
- Alterations to taste and smell

Benefits of stopping smoking to oral health

Successfully stopping smoking will not only benefit a patient's long term health by reducing the risk of developing other disease,[17] abstinence from smoking may help a patient heal faster by eliminating the acute effects of smoking on the body and stopping smoking has also been associated with improved dental outcomes.

The clinical case for providing stop smoking support to dental patients

Stopping smoking will:

- Improve composition of oral microflora and periodontal health.[7,18–21]
- Reduce risk of tooth loss.[22–24] Risk reduces after stopping smoking, but it takes at least 15 years to return to that of a non-smoker.[25]
- Reduce risk of implant failure.[26] Patients who stop smoking one week before treatment and eight weeks following have success rates identical to non-smoking patients.[27]
- Significantly reduce risk of heart disease, stroke, lung, mouth and throat cancers, other cancers, respiratory disease including and COPD, emphysema, and bronchitis.[8]

Delivering better oral health: an evidence-based toolkit for prevention[28]

Delivering better oral health is the evidence-based toolkit for prevention, developed by Public Health England, and contains a chapter on smoking and tobacco use.

It can be accessed online:
https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention

Carbon monoxide (CO) testing in dental practice

Carbon monoxide (CO) testing can be used in dental and other clinical settings to assess patients smoking status.

Importantly, CO monitoring can serve as a valuable motivational tool for smokers and takes just a few minutes to conduct. These simple devices are easy to use and allow patients to understand the harm smoking is causing to their health. CO testing can assist with introducing discussions about quitting smoking with patients and can also be used to track progress after patient's stop smoking.

CO has a short half-life and is usually undetectable around 24 hours after the last cigarette.

Image supplied by MD Diagnostics Ltd. www.mdd.org.uk

How to conduct CO testing in dental settings

Explain that carbon monoxide (CO) is a poisonous gas contained in cigarette smoke and that there is a simple test that can be carried out to determine CO levels.

"Carbon monoxide is a poisonous gas inhaled by smokers when they smoke a cigarette. Carbon monoxide reduces oxygen levels in the body and causes heart disease, stroke, reduced lung function and can also affect your dental health. The good news for you is that shortly after stopping smoking the level of carbon monoxide in your body returns to that of a non-smoker. This machine measures the amount of carbon monoxide in your lungs in parts per million and if you have not been smoking then we would expect it to be below 10 parts per million. Would you like to measure your carbon monoxide levels?"

It is worth emphasising that patients should hold their breath for a minimum of 15 seconds before blowing into the CO monitor. This allows the pressure in the lungs to equalise and for the carbon monoxide in the blood to pass into the air in the lungs; it is this that is then measured by the monitor in parts per millions.

"What I am going to ask you to do in a minute is to take a big deep breath, hold your breath and then exhale into this machine. You will need to hold your breath for about 15 seconds. After you have taken your breath I will hand the machine to you, the machine will count down and I will then tell you when to exhale into it."

After the test:

If reading was 10 parts per million or above:

"The monitor is showing a reading of over 10 parts per million. The normal range for a non-smoker is between 1 and 5 ppm and so you can see that your reading is ... times higher than what we would expect from a non-smoker. These levels of carbon monoxide are considered poisonous – they are ... times the levels that are considered safe. High levels of carbon monoxide affects the amount of oxygen in your body and causes serious disease. The good news is quitting smoking you can get this down to the levels of a non-smoker."

If reading was below 10 parts per million (and the patient is known to be a smoker):

"This reading is classed as that of a non-smoker; although the normal range for a non-smoker is between 1 and 5 ppm. However, carbon monoxide accumulates in the body and I'm sure that if we were to repeat the test later today or sooner after you've smoked it would be much higher. The good news is if you stop smoking then you can get this permanently down to the levels of somebody who doesn't smoke."

How to use the CO monitor

1. Both the client and the stop smoking practitioner should use non-alcoholic sanitiser gel on their hands before the test
2. Attach a clean, disposable filtered mouthpiece (a fresh one for each client) to the monitor
3. Turn the machine on
4. Ask the client to take a deep breath
5. The monitor will count down 15 seconds
6. The client needs to blow slowly into the mouthpiece aiming to empty their lungs completely
7. The parts per million (ppm) of carbon monoxide in the lungs will be displayed on the screen
8. The mouthpiece should be removed by the client (for infection control reasons) and disposed of in a refuse sack, which is tied before being placed in another bag for collection (double bagging) to prevent domestic staff touching the mouth pieces
9. The CO monitor should be cleaned between tests using a non-alcoholic wipe

Our bodies produce small amounts of carbon monoxide and there is also carbon monoxide in the atmosphere around us, e.g. in car exhaust fumes, so the reading will almost never be zero; it will also fluctuate slightly depending upon what air you have been exposed to. A reading of below 10 parts per million is considered to be that of a non-smoker.

Readings above 10 parts per million are not normally caused by being in the company of smokers; this can increase exposure to carbon monoxide, but does not normally push the reading above 10.

What else can raise CO?

- Exposure to CO fumes from a faulty gas boiler, car exhaust or paint stripper.
- Lactose intolerance where the high reading is a consequence of consuming dairy products that can produce gases in the breath.
- Exposure to passive smoking. Although readings above 10 ppm are not normally caused by being in the company of smokers.
- Unusually high ambient CO concentrations due to weather conditions or air pollution.

Other resources

The NCSCT offers a variety of online training and face-to-face courses, and resources in smoking cessation.

For further training in Very Brief Advice on Smoking you may access the NCSCT Online Training Module

http://elearning.ncsct.co.uk/vba-launch

If you are interested in learning more about providing behavioural support to assist with quit attempts you should access the NCSCT Online Practitioner Training: Core competencies in helping people stop smoking

http://elearning.ncsct.co.uk/practitioner_training-registration

Electronic cigarettes (e-cigarettes)?[29]

What are e-cigarettes?

E-cigarettes are devices that deliver nicotine within an inhalable aerosol by heating a solution that typically contains nicotine, propylene glycol and/or glycerol, plus flavours. There is a wide range of e-cigarettes and people may need to try various types, flavours and nicotine dosages before they find a product that they like.

What is the evidence on the safety of e-cigarettes?

Short-term exposure to e-cigarettes appears to pose few if any risks. Mouth and throat irritation are most commonly reported symptoms and these subside over time. Low levels of toxicants and carcinogens have been detected in e-cigarette liquid and vapour, but these are much lower than those found in cigarette smoke. There are no high quality safety data from long-term e-cigarette use, but there is no good reason to expect that their use would be anywhere near as risky as smoking. Although some health risks from e-cigarette use may yet emerge, there is no good reason to expect that their use would be anywhere near as risky as smoking. This is because e-cigarette vapour does not contain the products of combustion (burning) that cause lung and heart disease, and cancer.

What do I recommend to my patients who ask about using e-cigarettes?

Some people find e-cigarettes helpful for quitting, cutting down their nicotine intake and/or managing temporary abstinence. While combining quit smoking medications and behavioural counselling has the strongest evidence for increasing quit rates, Public Health England supports the use of e-cigarettes as a quit smoking aid, ideally in combination with a first line quit smoking medication and counseling support.[30] For any patients who are using or are planning to use e-cigarettes to quit smoking or cutback on their smoking it is recommended that they also be referred to their local stop smoking service to give them the best chances of quitting.

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SMOKING CESSATION

BRIEF ADVICE A A A

Did you know giving up smoking significantly increase your chances of living a longer healthier lifestyle, even if you have smoked for 40 years!

It is never to late to think about stopping, it will make a drastic improvement to your lifestyle and health in ways you might not expect.

Benefits of quitting

- After 20 minutes your blood pressure and pulse return to normal
- After 24 hours your lungs start to clear
- After two days your body is nicotine-free and your sense of taste and smell improve
- After three days you can breathe more easily, and your energy increases.

Very Brief Intervention

Ask | Assist | Act

Act

NATIONAL SUPPORT

- Call the free Smokefree National Helpline to speak to a trained, expert adviser on 0300 123 1044. All lines are open Monday to Friday 9am to 8pm and Saturday and Sunday 11am to 4pm*.
- Smokefree has lots of free support this includes a **smartphone app**, email programme or text messages that will keep you focused wherever you are.
- You can also speak to your doctor, pharmacy team or local Stop Smoking Service for expert advice on stop smoking medicines.

SELF CARE

- Download the NHS **Smokefree app** from itunes or google play
- Get further information from the National Health Service **www.nhs.uk/quit**
- Consider using e-cigarettes to stop smoking
- Millions have used Smokefree support to help them stop smoking. Choose from an app, email, SMS and face-to-face guidance.

Emphasise that quitting will the best thing they will ever do and the NHS Smokefree service can provide the friendly and helpful support they need to quit for good

Very Brief Intervention

Ask | Assist | Act

Assist

> **State that the best way of stopping smoking is with a combination of medication and specialist support**

- Studies show that you are four times more likely to quit smoking if you do it through a specialist support service.
- Services are free and they provide one to one support.
- Local stop smoking services staffed by expert advisers provide a range of proven methods to help you quit.
- Its totally free

> **Do you think you would benefit from the services your local stop smoking service can offer?**

Very Brief Intervention

Ask | Assist | Act

Ask

> **Have you ever thought of stopping or tried to stop before?**

> **The average smoker could save £140 each month (£1680 per year) by quitting, what would you do with that extra money?**

Remember to personalise the benefits. Is the person saving for a holiday, or a new home? Do they have children or grandchildren they would like to runaround with?

Source: Delivering Better Oral Health: an evidence-based toolkit for prevention

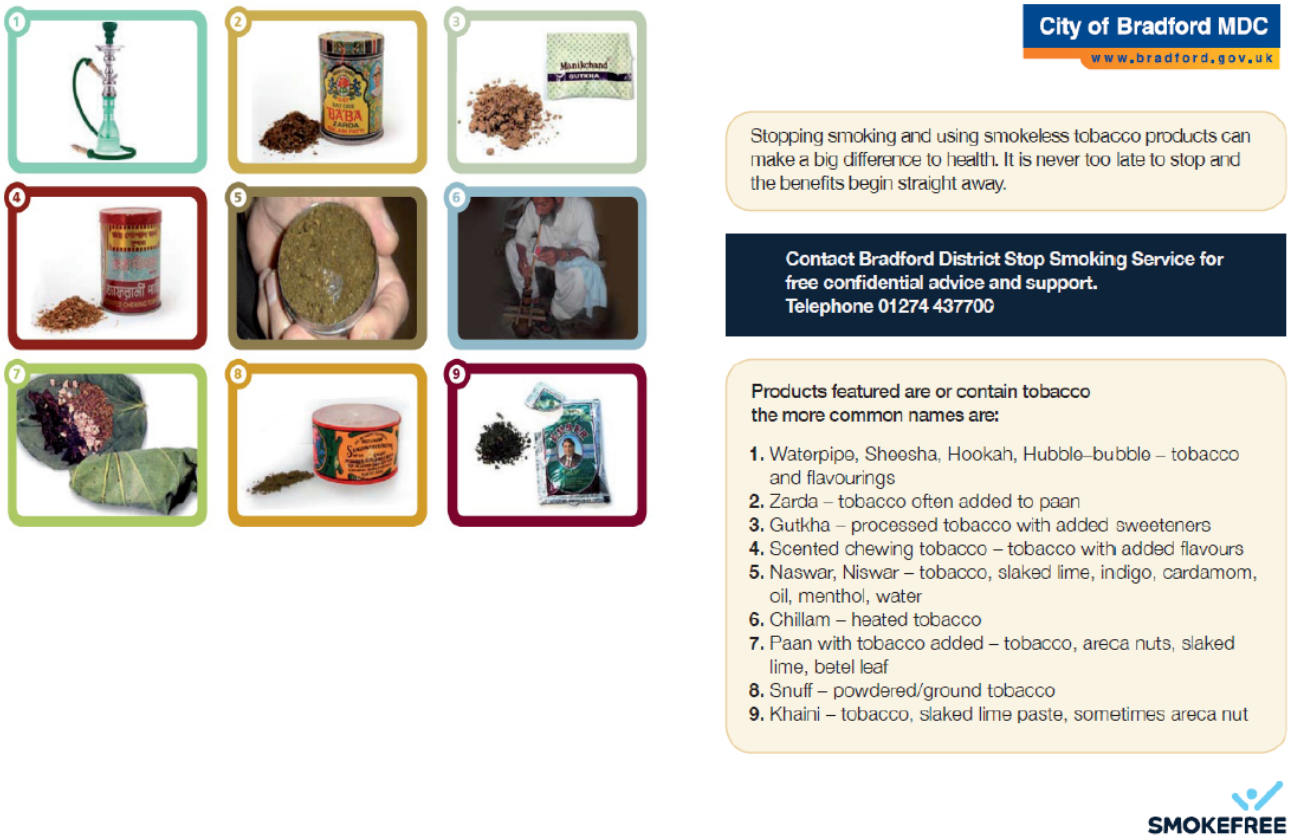


Figure 7.2 Niche tobacco tesource developed by Bradford & Airedale stop smoking service

Among certain ethnic minority groups, chewing tobacco and/or areca nut (paan) is a common cultural practice. Evidence indicates that chewing tobacco and other products is associated with the development of oral cancers and other oral pathologies (Carr and Ebbert, 2012, Tsai et al., 2009). A recent Cochrane systematic review showed that advice delivered in dental surgeries is effective in helping patients who chew tobacco to stop. Current NICE guidance
(National Institute for Health and Clinical Excellence, 2012), regarding smokeless tobacco users in South Asian communities, recommends dental teams:
Ask people if they use smokeless tobacco, using the names that the various products
are known by locally. If necessary, show them a picture of what the products look like, using visual aids. (This may be necessary if the person does not speak English well or does not understand the terms being used). Figure
7.2 gives an example of a resource that could be used, with details of each product on the reverse. This resource also provides information on shisha (water pipe top left image on resource below) use. Shisha is not a smokeless tobacco product and can be as damaging as smoking cigarettes or chewing any of the smokeless tobacco products listed. Users of shisha, who wish to stop smoking, should be referred to the stop smoking service in the same way as other users of tobacco. Advise the patient of the health risks (eg, the risk of lung cancer, respiratory illness and periodontal

disease) (Akl et al., 2010) associated with tobacco use and advise them to stop. Where services exist locally, refer people who want to quit to local specialist tobacco cessation service. Record the outcome in the patient's notes. VBA (ask, advise, act) is the same method you would apply to smokers or smokeless tobacco users.

PINT CIDER: ABV 5.3%
3 UNITS

RED WINE (125ML): ABV 12.5%
1.6 UNITS

SAMBUCA SHOT: ABV 42%
1 UNIT

BOTTLE LAGER: ABV 5.2%
1.7 UNITS

ALCOPOP: ABV 5%
1.4 UNITS

HALF PINT CIDER: ABV 5.3%
1.5 UNITS

SINGLE GIN & TONIC: ABV 40%
1 UNIT

DOUBLE COGNAC: ABV 40%
2 UNITS

CHAMPAGNE (175ml): ABV 11.5%
2 UNITS

DOUBLE WHISKY & COKE: ABV 40%
2 UNITS

HALF PINT LAGER: ABV 5.2%
1.5 UNITS

COSMOPOLITAN COCKTAIL
2 UNITS

PINT BITTER: ABV 5%
2.8 UNITS

ALCOPOP: ABV 5%
1.4 UNITS

PIMMS: ABV 25%
1.3 UNITS

DOUBLE WHISKY: ABV 40%
2 UNITS

WHITE WINE (175ml): ABV 13%
2.3 UNITS

PINT LAGER: ABV 5.2%
3 UNITS

BOTTLE OF WINE: ABV 13.5%
10 UNITS

Fast alcohol screening test (FAST)

FAST is an alcohol harm assessment tool. It consists of a subset of questions from the full alcohol use disorders identification test (AUDIT). FAST was developed for use in emergency departments, but can be used in a variety of health and social care settings.

Questions	Scoring system					Your score
	0	1	2	3	4	
How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
Only answer the following questions if the answer above is Never (0), Less than monthly (1) or Monthly (2). Stop here if the answer is Weekly (3) or Daily (4).						
How often during the last year have you failed to do what was normally expected from you because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested that you cut down?	No		Yes, but not in the last year		Yes, during the last year	

FAST score	

An overall total score of 3 or more on the first or all 4 questions is FAST positive.

What to do next?

If your score is FAST positive, complete remaining AUDIT alcohol screening questions; this may include the three remaining questions above as well as the six questions on the second page to obtain a full AUDIT score.

Remaining alcohol harm assessment questions from AUDIT

Questions	Scoring system					Your score
	0	1	2	3	4	
How often do you have a drink containing alcohol?	Never	Monthly or less	2 to 4 times per month	2 to 3 times per week	4 times or more per week	
How many units of alcohol do you drink on a typical day when you are drinking?	0 to 2	3 to 4	5 to 6	7 to 8	10 or more	
How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
Have you or somebody else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year	

Total AUDIT score	

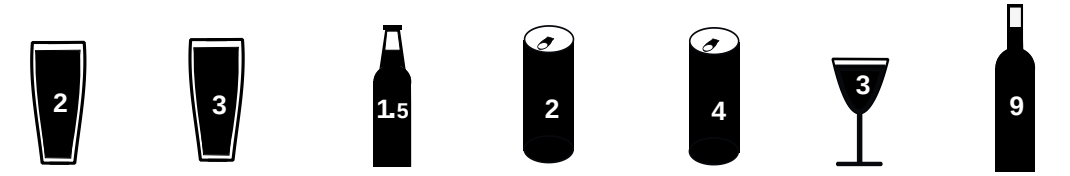
Scoring:

- 0 to 7 indicates low risk
- 8 to 15 indicates increasing risk
- 16 to 19 indicates higher risk,
- 20 or more indicates possible dependence

Alcohol unit reference

One unit of alcohol

Drinks more than a single unit



Pint of "regular" beer, lager or cider

Pint of "strong" or "premium" beer, lager or cider

Alcopop or a 275ml bottle of regular lager

440ml can of "regular" lager or cider

440ml can of "super strength" lager

250ml glass of wine (12%)

75cl Bottle of wine (12%)

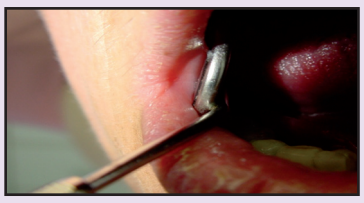
The Challacombe Scale

of Clinical Oral Dryness

KING'S College LONDON

The Challacombe Scale was developed from research conducted at King's College London Dental Institute under the supervision of Professor Stephen Challacombe*. The purpose of this scale is to be able to visually identify and quantify whether your patient has xerostomia (dry mouth) and if so, how it changes over time and the most appropriate therapy options. This scale is applicable whatever your profession.

The Challacombe Scale works as an additive score of 1 to 10 : 1 being the least and 10 being the most severe. Each feature scores 1 and symptoms will not necessarily progress in the order shown, but summated scores indicate likely patient needs. Score changes over time can be used to monitor symptom progression or regression.

1 

Mirror sticks to buccal mucosa

2 

Mirror sticks to tongue

3 

Saliva frothy

4 

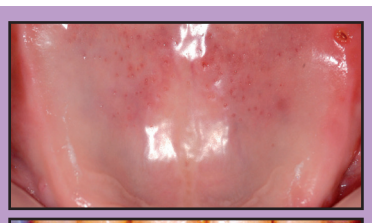
No saliva pooling in floor of mouth

5 

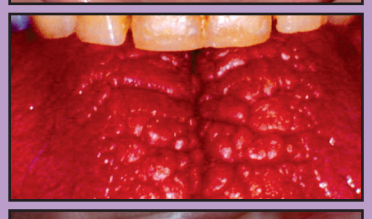
Tongue shows generalised shortened papillae (mild depapillation)

6 

Altered gingival architecture (ie. smooth)

7 

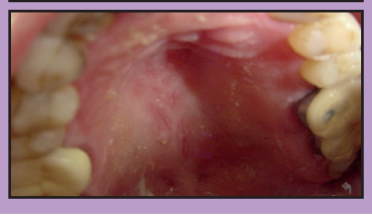
Glassy appearance of oral mucosa, especially palate

8 

Tongue lobulated / fissured

9 

Cervical caries (more than two teeth)

10 

Debris on palate or sticking to teeth

An additive score of 1 - 3 indicates mild dryness. May not need treatment or management. Sugar-free chewing gum for 15 mins, twice daily and attention to hydration is needed. Many drugs will cause mild dryness. Routine checkup monitoring required.

An additive score of 4 - 6 indicates moderate dryness. Sugar-free chewing gum or simple sialogogues may be required. Needs to be investigated further if reasons for dryness are not clear. Saliva substitutes and topical fluoride may be helpful. Monitor at regular intervals especially for early decay and symptom change.

An additive score of 7 - 10 indicates severe dryness. Saliva substitutes and topical fluoride usually needed. Cause of hyposalivation needs to be ascertained and Sjögrens Syndrome excluded. Refer for investigation and diagnosis. Patients then need to be monitored for changing symptoms and signs, with possible further specialist input if worsening.

* S Osailan et al "Investigating the relationship between hyposalivation and mucosal wetness" (2011) Oral Diseases volume 17, Issue 1, Pages: 109–114

UKMI Q&A 190.8

Saliva substitutes: Choosing and prescribing the right product.

Prepared by UK Medicines Information (UKMi) pharmacists for NHS healthcare professionals
Before using this Q&A, read the disclaimer at www.sps.nhs.uk/articles/about-ukmi-medicines-qas/
Date prepared: June 2015

Summary

- Dry mouth is a complaint often presented to dental practitioners.
- There are a number of products available to manage this condition, however not all are suitable for every individual.
- Dentate patients in particular should avoid preparations with an acidic pH, due to increased risk of dental decay. A fluoride-containing preparation is preferable for these patients.
- Dental practitioners should be aware that not all preparations may be prescribed on a dental NHS prescription. All available products can be purchased from a pharmacy without a prescription.

Background

Dry mouth or xerostomia is the feeling of oral dryness, which may be associated with poor functioning of salivary glands. There are a number of causes for a lack of saliva production including loss of secretory tissue in the salivary glands, neurological disease and as a side effect of some drugs (1). Patients with a persistently dry mouth may have poor oral hygiene and are at increased risk of dental caries, periodontal disease and oral infections (2). This Q&A addresses choice of saliva substitutes for dry mouth and prescribing issues around these, particularly for dental practitioners.

Answer

Which saliva substitute?

The use of saliva substitutes may be helpful to patients complaining of a dry mouth and offers symptomatic relief for patients with insufficient salivary function (1). There are a variety of preparations available including artificial saliva replacements (e.g. gels, sprays and mouth rinses) or salivary stimulants (e.g. chewing gums, citric acid tablets). Properly balanced artificial saliva should be of a neutral pH and contain electrolytes (including fluoride) to correspond approximately to the composition of saliva. The acidic pH of some artificial saliva products may be inappropriate for dentate patients as these can cause dental caries (2,3). Ideally, dentate patients should use a fluoride-containing preparation, as this may protect against caries (1). Fluoride-containing preparations include *AS Saliva Orthana* oral spray and *BioXtra* gel mouth spray and mouthrinse (see table). If a preparation without fluoride is used, a fluoride mouthwash should also be used daily in dentate patients (3). Some preparations are derived from animal products and may be unsuitable for vegetarians and people from certain religious groups (1).

Prescribing issues for dentists

As of March 2015, ten artificial saliva preparations are included in the list of preparations approved for prescribing by dental practitioners on NHS prescriptions, known as the Dental Practitioners' Formulary (DPF). 'Artificial saliva protective spray DPF', 'Artificial saliva oral spray DPF', 'Artificial saliva gel DPF', 'Artificial saliva pastilles DPF' and 'Artificial saliva substitute spray DPF' can be prescribed for any condition causing dry mouth. The only preparation that can be dispensed against a prescription for:

- 'Artificial saliva protective spray DPF' is *Aequasyal* oral spray (formerly *Aquoral* oral spray).
- 'Artificial saliva oral spray DPF' is *Xerotin* oral spray,
- 'Artificial saliva gel DPF' is *Biotène Oralbalance s*aliva replacement gel,
- 'Artificial saliva pastilles DPF' are *Salivix* pastilles
- 'Artificial saliva substitute spray' is *AS Saliva Orthana* spray.

Saliva Stimulating Tablets (*SST*) may be prescribed on a dental prescription, for dry mouth in patients with salivary gland impairment (2).

The four other artificial saliva substitute preparations are included in the BNF as borderline substances. None of the products are licensed medicines, although some are classed as medical devices (e.g. BioXtra products). Indications approved by the Advisory Committee on Borderline Substance (ACBS) include sicca syndrome and xerostomia (2). Although the BNF recommends that all prescriptions for borderline substances are endorsed 'ACBS', pharmacists will always be paid for supplying an item on the ACBS list whether or not it has been endorsed 'ACBS' by the prescriber (4). Primary care organisations may follow up prescriptions for borderline substances not endorsed 'ACBS'.

All of the available artificial saliva preparations may be purchased from a pharmacy and most of the products cost the same or less than a prescription charge. The majority of artificial saliva products can be prescribed on a dental NHS prescription (see table). The Prescription Pricing Authority (PPA) has confirmed that only formulations listed in the Drug Tariff may be prescribed. For example, *BioXtra* moisturising gel may be prescribed but *BioXtra* toothpaste may not (5,6). Dentists are not restricted in the items they may prescribe privately and therefore any of the products can be prescribed on a private dental prescription. Dentists may also sell artificial saliva preparations directly to patients. As none of the artificial saliva preparations are licensed medicines, their sale and supply is not regulated by the Medicines Act or the NHS dental contract.

Table: Available saliva substitutes and preparations to treat dry mouth

Products available (Manufacturer)	**Formulation**	**Prescrib-able by dentists on NHS?**	**Retail price** (7)	**pH**	**Fluoride contain-ing?**	**Animal derived ingred-ients?**	**Gluten free?**	**Sugar free?**
Aequasyal *(formerly Aquoral)* (Bluechip Healthcare)	Oral spray 40mL	Yes [a]	>£10 [b]	Neutral	No	No	Yes	Yes
AS Saliva Orthana (CC Med)	Oral spray 50mL	Yes	£7 - £10	Neutral	Yes [c]	Yes [d]	Yes	Yes
	Oral spray 100mL refill							
	Lozenges (30)	Yes [e]	< £7	Neutral	No	Yes [d]	Yes	Yes [f]
Biotene Oralbalance [g] (GSK)	Saliva replacement gel 50g	Yes [h]	£7 - £10	Neutral	No	No	Yes	Yes [i]
BioXtra products for dry mouth (RIS Products)	Moisturising gel 40mL	Yes [e]	£7 - £10	Neutral	No	Yes [j]	Yes	Yes
	Gel mouth spray 50mL	Yes [e]	£7 - £10	Neutral	Yes [k]	Yes [j]	Yes	Yes
	Toothpaste 50mL	No	< £7	Neutral	Yes [l]	Yes [j]	Yes	Yes
	Mouthrinse 250mL	No	< £7	Neutral	Yes [l]	Yes [j]	Yes	Yes
Glandosane (Fresenius Kabi)	Aerosol spray 50mL (lemon, neutral, peppermint)	Yes [e]	~ £7 [m]	Acidic	No	No	Yes	Yes [f]
Saliveze (Wyvern)	Oral spray 50mL	Yes [e]	< £7	Neutral	No	No	Yes	Yes

Products available (Manufacturer)	Formulation	Prescrib-able by dentists on NHS?	Retail price (7)	pH	Fluoride contain-ing?	Animal derived ingred-ients?	Gluten free?	Sugar free?
Saliva Stimulating Tablets (Primiuslab)	Tablets (100)	Yes	£7 - £10	Acidic [n]	No	No	Yes	Yes [f]
Salivix (Galen)	Pastilles (50)	Yes [o]	< £7	Acidic [p]	No	Yes [q]	Yes	Yes
Xerotin (SpePharm)	Oral spray 100mL	Yes [r]	> £7 [s]	Neutral	No	No	Yes	Yes [f]

Notes to support table above:

a- May be prescribed as 'Artificial saliva protective spray'.
b- Estimated retail price calculated from trade price of £9.85.
c- Contains 4.2mg/L sodium fluoride.
d- Contains porcine-derived gastric mucin.
e- Can be prescribed for indications approved by the ACBS.
f- Contains sorbitol.
g- The manufacturer advises avoiding use with toothpastes containing detergents, including foaming agents such as sodium lauryl sulphate. See UKMi Medicines Q&A: What are the excipients in toothpastes? for a table of available toothpastes and the excipients they contain.
h- May be prescribed as 'Artificial saliva gel'.
i- Biotene contains glucose oxidase, an enzyme added to inhibit bacteria growth. This is not a sugar.
j- Contains animal products – traces of milk protein extract from cow's milk and egg white proteins.
k- Contains 150ppm fluoride.
l- Contains 1500ppm fluoride.
m- Estimated retail price calculated from trade price of £5.52.
n- Contains calcium phosphate dibasic as a buffer to prevent dental caries.
o- May be prescribed as 'Artificial saliva pastilles'.
p- Contains calcium lactate and sodium phosphate to act as a buffer to protect teeth.
q- Contains E120 colourant derived from Peruvian insects.
r- May be prescribed as 'Artificial saliva oral spray'.
s- Estimated retail price calculated from trade price of £6.86.

Limitations

Formulations may be subject to change, but the information contained in this document is to our knowledge accurate at the time of publication.

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Search strategy/Bibliography

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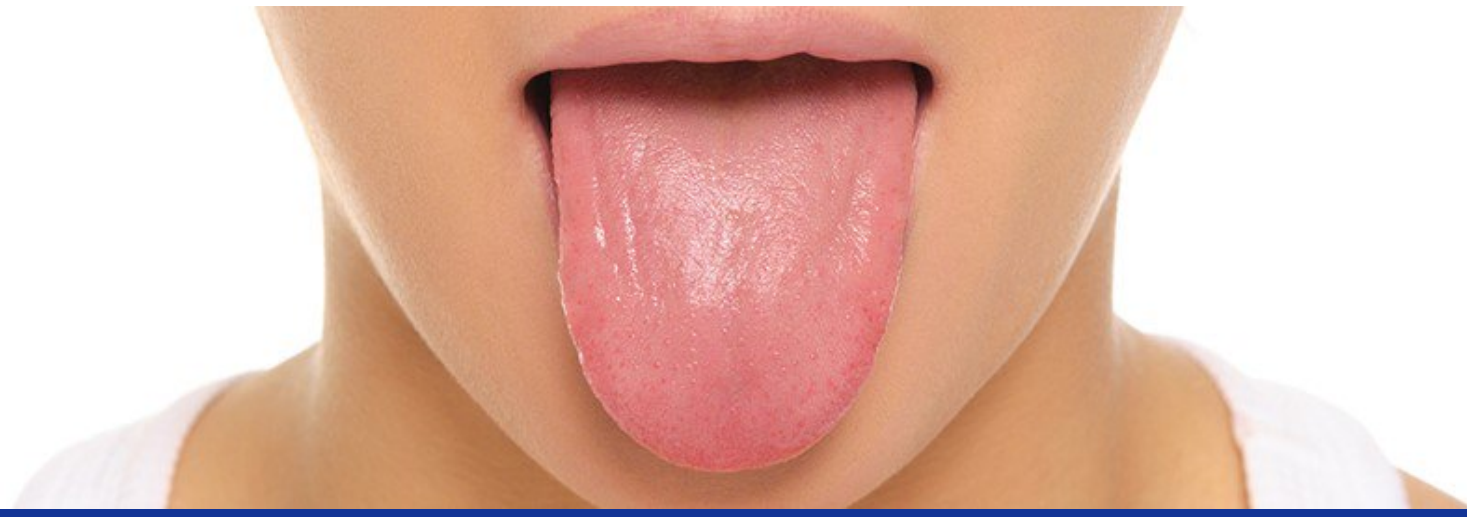
June 2015



Facts and Tips: Dry mouth

Stephen Loat

13 September 2019

For many, dry mouth is experienced once in a blue moon. Most likely caused by dehydration, drinking one too many beers, or by simply sleeping with an open mouth.

Unfortunately, for others dry mouth is a chronic problem that can have distressing impact on day-to-day life. In addition to the physical side effects, it can also leave people feeling far less confident in social situations, to the point where eating and speaking in public becomes upsetting.

Current research estimates that around one in four adults suffer from the condition and this number rises to 40% in the over-55s. This makes dry mouth one of the most

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common oral health problems.

To help you understand more about dry mouth, here are some facts about the condition and our best advice for managing it.

Top ten facts about dry mouth:

1. Dry mouth or ‘xerostomia' is a condition which affects the flow of saliva, causing your mouth to feel dry.
2. Your mouth needs saliva to be able to work properly. Saliva keeps your mouth moist, and it helps to break down your food and helps you to swallow. It also acts as a cleanser, neutralising plaque acids. It is constantly washing around your mouth and teeth, fighting tooth decay and helping to keep your teeth clean.
3. Having less saliva can also affect the taste of food and makes it harder to eat drier foods. Sometimes it can affect your speech and it makes people more likely to have bad breath.
4. Dry mouth is usually worse at night, when the mouth produces less saliva than in the daytime.
5. Dry mouth can cause the mouth to become sore and there is a higher risk of tooth decay and gum disease.
6. It can be caused as a result of old age, or, quite often it is a side effect of medication - especially heart, blood pressure and depression tablets. Your doctor, pharmacist or dental team should be able to tell you whether your medication can cause problems.
7. In some cases, dry mouth can be a direct result of a medical condition (for example diabetes, lupus, Sjogren's syndrome and blocked salivary glands).
8. Women are more likely to suffer from chronic dry mouth than men (27 percent compared to 21 percent)[1].
9. Studies have shown that those that suffer from chronic dry mouth also have a higher risk of mental health illnesses and social anxiety[2].
10. Currently, there is no way of actually preventing the problem, although there are products to ease the symptoms.

Top five tips:

1. Make sure you regularly visit your dentist - You have a

Dental Helpline

We're here to give you impartial advice about your oral health. Contact our team of fully-qualified professionals by telephone (01788 539780), or email (helpline@dentalhealth.org). Read more

The Oral Health Podcast

During National Smile Month 2019 we teamed up with GSK, Pronamel and Sensodyne to create a mini-series of podcasts to help you improve your oral health.

Read more

higher risk of tooth decay and gum disease with dry mouth, and these can get worse quicker than usual. So it is important to visit your dental team regularly. They will tell you how often you should visit.

2. It is important to use a fluoride toothpaste containing at least 1350 to 1500ppm (parts per million) of fluoride. Be aware that some products contain Sodium Lauryl Sulphate (SLS), and some people with dry mouth find this can irritate the mouth and make the condition worse.
3. There are a number of products designed to help your mouth stay moist and comfortable. These are usually gels or sprays. Some have extra ingredients which may help prevent tooth and gum problems. There are also special products to help with your day-to-day oral hygiene (for example toothpastes and mouth rinses).
4. Chewing sugar-free gum can help ease dry mouth as it encourages your mouth to make saliva. Your dental team might recommend products such as rinses, gels, pastes and lozenges which you can get from the pharmacist.
5. Some people find that sipping water, or sucking sugar-free sweets, helps in the short term. It is very important to use sugar-free products, as dry mouth can make you more likely to have tooth decay.

Expert comment from Dr Nigel Carter OBE:

"Dry mouth is far from just an inconvenience, it can cause real difficulty with speaking and eating and quite traumatic at times. Sufferers have explained how it has caused them to wake up the middle of night choking, gasping for breath and even fearing for their life.

"The physical symptoms associated with dry mouth make relatively simple tasks like eating or talking extremely difficult. This can also have a negative impact on a person's quality of life, confidence and self-esteem.

"It's important that if you are concerned you are suffering from dry mouth that you go and visit your dentist. They are in the best position to have a thorough look in your mouth and pinpoint the cause and advise on treatment. Alternatively, you can call our Dental Helpline and speak to one of our friendly dental experts and receive impartial

advice."

For more information about dry mouth check out our dedicated information page on this condition. Alternatively, you can call our confidential and impartial Dental Helpline on 01788 539780.

References

1. T.Nederfors, *Xerostomia: prevalence and pharmacotherapy. With special reference to beta-adrenoceptor antagonists*, Swedish Dental Journal (1996; 116) p. 1 - 70

2. Oral Health Foundation, The Untold Truth of Dry Mouth, https://www.dentalhealth.org/news/theuntoldtruthofdrymouth (accessed September 2019)

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Oral Health Foundation, Smile House, 2 East Union Street, Rugby, Warwickshire, CV22 6AJ, UK

Dry Mouth

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

What do I need to know about dry mouth?

Dry mouth is the feeling that there is not enough saliva in the mouth.

Everyone has a dry mouth once in a while—if they are nervous, upset or under stress.

But if you have a dry mouth all or most of the time, it can be uncomfortable and can lead to serious health problems. It can also be a sign of certain diseases and conditions.

Dry mouth...

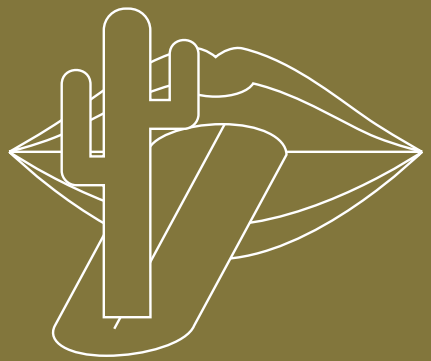
- can cause difficulties in tasting, chewing, swallowing, and speaking
- can increase your chance of developing dental decay and other infections in the mouth
- can be caused by certain medications or medical treatments

Dry mouth is not a normal part of aging. So if you think you have dry mouth, see your dentist or physician—there are things you can do to get relief.

Symptoms include:

- a sticky, dry feeling in the mouth
- trouble chewing, swallowing, tasting, or speaking
- a burning feeling in the mouth
- a dry feeling in the throat
- cracked lips
- a dry, rough tongue
- mouth sores
- an infection in the mouth

The technical term for dry mouth is xerostomia (ZEER-oh-STOH-mee-ah)



Some people feel they have a dry mouth even if their salivary glands are working correctly. People with certain disorders, like Alzheimer's disease or those who have suffered a stroke, may not be able to feel wetness in their mouth.

Why is saliva so important?

Saliva does more than keep the mouth wet.

- It helps digest food
- It protects teeth from decay
- It prevents infection by controlling bacteria and fungi in the mouth
- It makes it possible for you to chew and swallow

Without enough saliva you can develop tooth decay or other infections in the mouth. You also might not get the nutrients you need if you cannot chew and swallow certain foods.

What causes dry mouth?

People get dry mouth when the glands in the mouth that make saliva are not working properly. Because of this, there might not be enough saliva to keep your mouth wet. There are several reasons why these glands (called salivary glands) might not work right.

- **Side effects of some medicines.** More than 400 medicines can cause the salivary glands to make less saliva. For example, medicines for high blood pressure and depression often cause dry mouth.

- **Disease.** Some diseases affect the salivary glands. For example, Sjögren's syndrome, HIV/AIDS, and diabetes can all cause dry mouth.
- **Radiation therapy.** The salivary glands can be damaged if they are exposed to radiation during cancer treatment.
- **Chemotherapy.** Drugs used to treat cancer can make saliva thicker, causing the mouth to feel dry.
- **Nerve Damage.** Injury to the head or neck can damage the nerves that tell salivary glands to make saliva.

What can be done about dry mouth?

Dry mouth treatment will depend on what is causing the problem. If you think you have dry mouth, see your dentist or physician. He or she can try to determine what is causing your dry mouth.

- If your dry mouth is caused by medicine, your physician might change your medicine or adjust the dosage.
- If your salivary glands are not working right but can still produce some saliva, your physician or dentist might give you a medicine that helps the glands work better.
- Your physician or dentist might suggest that you use artificial saliva to keep your mouth wet.

What can I do?

- Sip water or sugarless drinks often.
- Avoid drinks with caffeine, such as coffee, tea, and some sodas. Caffeine can dry out the mouth.
- Sip water or a sugarless drink during meals. This will make chewing and swallowing easier. It may also improve the taste of food.
- Chew sugarless gum or suck on sugarless hard candy to stimulate saliva flow; citrus, cinnamon or mint-flavored candies are good choices. Some sugarless chewing gums and candies contain xylitol and **may** help prevent cavities.
- Don't use tobacco or alcohol. They dry out the mouth.
- Be aware that spicy or salty foods may cause pain in a dry mouth.
- Use a humidifier at night.

Tips for keeping your teeth healthy

Remember, if you have dry mouth, you need to be extra careful to keep your teeth healthy. Make sure you:

- Gently brush your teeth at least twice a day.
- Floss your teeth regularly.
- Use toothpaste with fluoride in it. Most toothpastes sold at grocery and drug stores have fluoride in them.
- Avoid sticky, sugary foods. If you do eat them, brush immediately afterwards.
- Visit your dentist for a check-up at least twice a year. Your dentist might also suggest you use a prescription-strength fluoride gel (which is like a toothpaste) to help prevent dental decay.

For information on Sjögren's Syndrome:

The main symptoms of Sjögren's syndrome are dry mouth and dry eyes. For information about Sjögren's syndrome, contact:

Sjögren's Syndrome Clinic
National Institute of Dental and Craniofacial Research
Building 10, Room 1N110
10 Center Drive MSC 1190
Bethesda, MD 20892–1190
301–594–1644
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