Dementia Pathway

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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

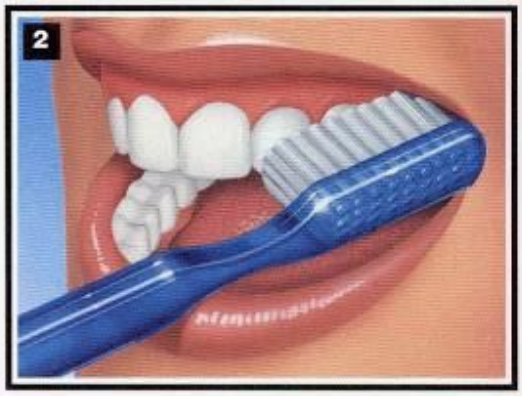
How To Brush

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.



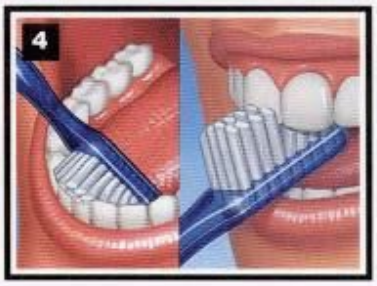
Place bristles along the gumline at a 45° angle. Bristles should contact both the tooth surface and the gumline.



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.



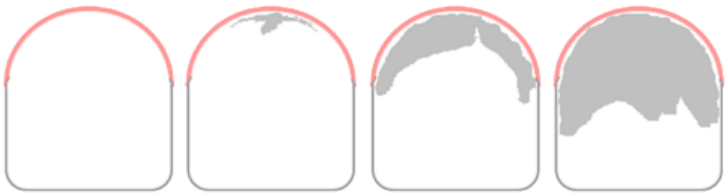
Tilt brush vertically behind the front teeth. Make several up & down strokes using the front half of the brush.



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

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Very Brief Advice on Smoking for Dental Patients



NCSCT

Authors: Sophia Papadakis and Andy McEwen

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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

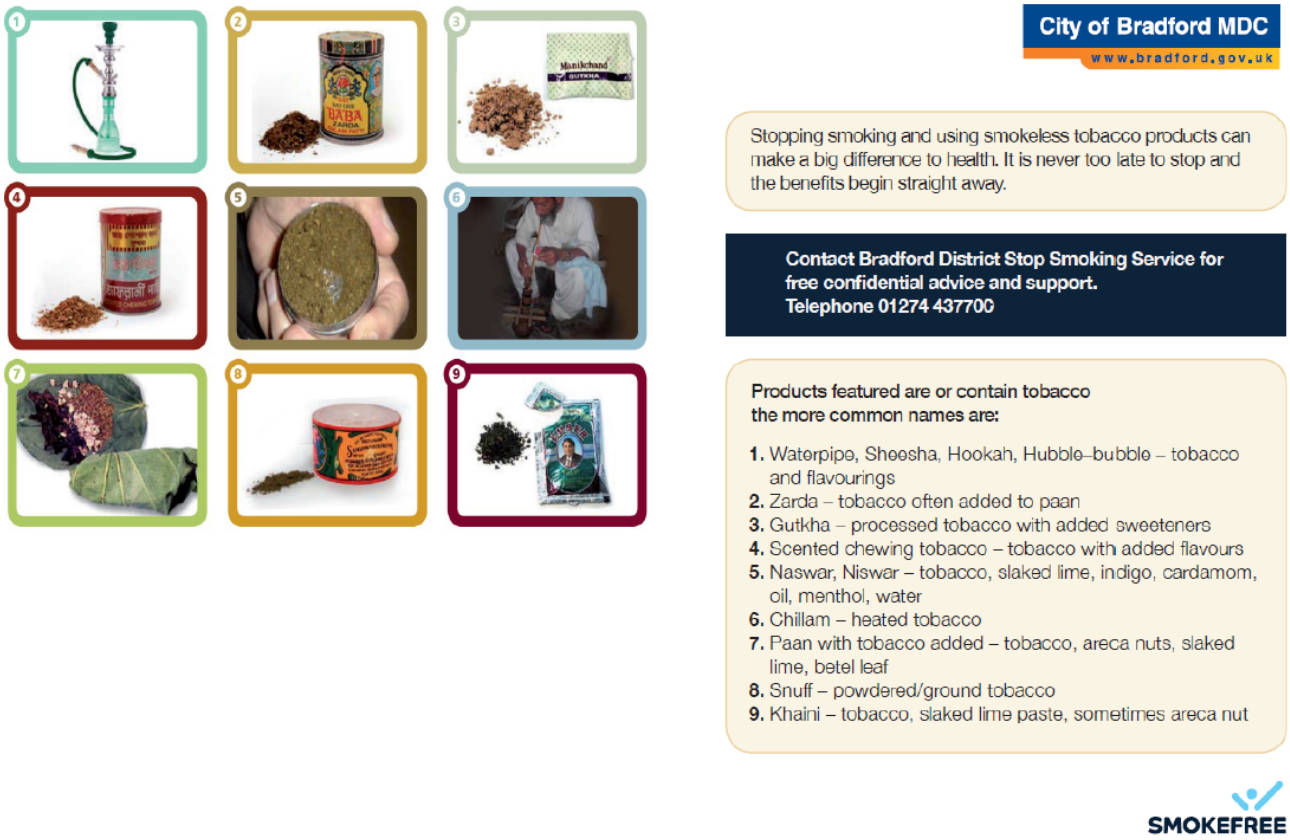


Figure 7.2 Niche tobacco tesource developed by Bradford & Airedale stop smoking service

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:

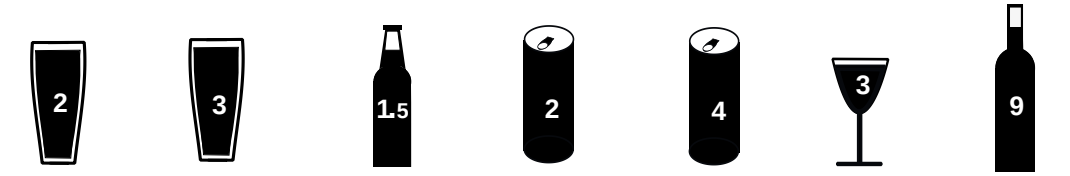
- 0 to 7 indicates low risk
- 8 to 15 indicates increasing risk
- 16 to 19 indicates higher risk,
- 20 or more indicates possible dependence

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%)

Six best ways to maintain a healthy mouth



Brush teeth twice a day, always last thing at night and one other time of day



Do not rinse your mouth after brushing, just spit out the toothpaste



Use fluoride toothpaste on your toothbrush



Do not eat too much sugar or drink sugary drinks



Clean all surfaces of your teeth and gums



Do not smoke or use other forms of tobacco. Do not drink alcohol

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BDA evidence summary

Dental problems and their management in patients with dementia

This evidence summary aims to locate and summarise evidence on the dental problems seen in patients with dementia and how they can be managed. It does not include detailed descriptions of the studies cited nor does it include information that was not presented in the literature.

The Curious about website encourages dental professionals to raise issues where a review of the available evidence would provide a useful resource for other dental professionals. Where there is a lack of evidence, the topic is considered for research and an award is made available.

These activities are sponsored by the Shirley Glasstone Hughes Fund, a restricted fund within the BDA Trust Fund. The focus of the fund is research into primary care dentistry and aims to generate a body of relevant research for practising dentists.

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Key findings

- Dental problems in patients with dementia are similar to those encountered by those without dementia.
- Data limitations prevent any conclusions being reached with regards to the extent of these problems or to the difference in severity between those with dementia and those without.
- There are no published studies examining the management of dental problems in dementia patients therefore no conclusions could be reached on this question.

Review question

This evidence summary was prepared in response to the following question: What dental problems are seen in patients with dementia and how can they be managed?

Key terms

Dementia:
A syndrome associated with an ongoing decline of the brain and its abilities.[1]

Dental problems:
Include items such as caries, periodontal disease and oral lesions

The case for action

What is dementia

Dementia, one of the main causes of disability later in life,[2] is a progressive, neurodegenerative disease that affects the ability to perform daily living activities.[3] It results in a decline in multiple areas of function, including memory, reasoning and communication skills and may also include behavioural and psychological symptoms such as depression, psychosis and aggression.[4] The main sub-types of the condition are: Alzheimer's disease (AD), vascular dementia, mixtures of these two pathologies ('mixed dementia') and rarer types such as Lewy body dementia, frontotemporal dementia and dementia in Parkinson's disease.[4] The etiology of dementia is not understood but the result is structural, e.g. plaque and tangle formation, and chemical changes in the brain and death of brain tissue.[4] Though age is the main risk factor for dementia it can affect younger people[5] with at least 15,000 people under the age of 65 having the illness in the UK.[4] While dementia is terminal, those affected can live with the condition for 7–12 years post diagnosis.[4] There are no proven treatments that can prevent the development of dementia, and no cures, but drugs can, in some patients, improve or temporarily slow symptom progression.[3;5]

In 2009 there were 700,000 people in the UK with dementia and the annual cost to the economy was £17 billion. By 2039 the number affected will double to 1.4 million with annual costs rising to over £50 billion.[4] The devastating impact dementia has on sufferers and the challenges it poses to society have been recognised and the Department of Health have developed a national dementia strategy with the aim of ensuring that significant improvements are made to dementia services across a number of areas, including quality of care.[4]

Oral health in those with dementia

Maintaining oral health in people with dementia is important for a variety of reasons:[6-8]

- Quality of life: To allow people to continue to talk comfortably and confidently, enjoy eating, maintain confidence in their appearance and be pain free.
- Medical reasons: To manage the side effects of medications taken for dementia and its symptoms, maintain adequate nutrition and minimise sources of micro-organisms that may later involve other parts of the body such as aspiration into the lungs (aspiration pneumonia is a common cause of death in patients with AD).
- Dental reasons: To prevent the development of dental problems, complications and emergencies or the need for general anaesthesia and to minimise the risk of unnecessary tooth extractions.
- Behavioural problems: Behavioural problems that are caused by dental pain can be minimised with good oral health. Such problems include a disinterest in or avoidance of food, pulling at the mouth or face, chewing of the lip or tongue, excessive grinding of teeth or dentures, aggression or withdrawal.

People with dementia are likely to have a unique set of factors that compromise oral health and increase the risk of dental disease and as the condition progresses, the susceptibility to dental disease increases. To manage their condition, they may be taking multiple medications that can cause xerostomia, vomiting, gingival overgrowth or tardive dyskinesia.[6;9-11] Furthermore medications prescribed for dementia and its symptoms have the potential to cause adverse reactions when combined with drugs used in the dental clinic or prescribed by the dentist including some anaesthetic and anti-microbial agents.[11]

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As dementia progresses and patients' apathy, apraxia and cognitive impairment grows, oral care can be forgotten. There can be a disinterest by the individual affected by dementia in dental maintenance and a reduction in the physical ability of the individual to maintain their oral health and communicate dental problems.[8;12] Additionally as the behaviour of the patient becomes resistant or combative, providing care becomes more difficult and care-givers can eventually stop taking the individual to the dentist.[13-15] If the patient is taken to the dentist their neurological deterioration can cause agitation, disorientation and inappropriate behaviour and they may be less able to tolerate dental procedures.[8]

This summary aims to summarise the available evidence relating to the dental problems seen in dementia patients and how these can be managed.

The evidence

Dental problems in patients with dementia have been examined and studies demonstrate that the types of problems encountered by this population are similar to those encountered by those without dementia. With regards to the extent of these problems, or to the difference in severity between those with dementia and those without, no conclusion could be reached due to limitations encountered with the available data. Due to the difficulty in carrying out longitudinal studies on those with dementia there is very little published research supporting the views of dental professionals that oral health is often affected in those with AD and other dementias.[3] Some of the specific difficulties and limitations encountered by the studies included in this summary are mentioned at a later stage. There are no published studies examining the management of dental problems in dementia patients therefore no conclusions could be reached on this question. With the predicted increase in dementia suffers, there may be a need for well-designed and well-conducted studies to evaluate treatment for dental problems in those with dementia.

The findings of this summary are presented below as an overall narrative summary with data being grouped by the type of dental problem.

Dental problems in dementia

General oral health and oral hygiene

It is suggested that patients with dementia are more likely to have poor oral hygiene than those without[19;37] and that dementia severity may influence oral health.[7;35] However this suggestion is not universal with some data implying the opposite.[29;34;36]

Tooth loss

Patients with dementia can lose teeth though it is not clear if the risk, rate of tooth loss or prevalence varies for those with dementia compared to those without. There is conflicting data in this area with some data indicating no significant difference between those with dementia and those without[7;28;29;36] and others indicating that those with dementia have a lower number of teeth.[20]

Caries/decay

Root and coronal caries as well as decayed retained tooth roots have been examined in dementia patients. The majority of studies demonstrate that those with dementia have a significantly greater caries and/or decay experience than those without.[7;17;23;24;26;27;30;35;37]

Other notable factors are:

- Caries prevalence is related to dementia type and severity[21]
- Those with a dementia diagnosis other than AD are at a particularly high risk of developing multiple carious lesions during their first post diagnosis year[23]
- Dementia suffers have an increased likelihood of having restored teeth[28]
- Dementia sufferers have more nonfunctional/ unrestorable teeth than those without dementia[33]
- Newly diagnosed dementia sufferers already have a high level of active dental caries[21]

Conversely some studies saw no significant difference in some caries/decay measures, e.g. caries experience, between those with dementia and those without.[20;21;25;27;32;36] AD patients were found to have the smallest difference in mean number of decayed surfaces in comparison to those with other types of dementia and those without dementia though this may be due to

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Early/mild disease

1. Most dental treatment can be carried out
2. Employ aggressive prevention and recall
3. Treat sites of infection and possible sources of acute/chronic pain or pathology
4. Fixed prosthetics preferred to removable due to danger to patient
5. Identify key teeth and restore to function
6. Restorative treatment should be high quality and low maintenance
7. Advanced restorative treatment should only be planned knowing a care-giver is prepared to maintain when necessary

Moderate disease

1. Focus changes from restorative and rehabilitative to maintenance and prevention
2. Aggressive recall and rigorous prevention continued
3. Short appointments indicated
4. Sedation or general anaesthesia may be necessary for treatment

Severe/advanced/late disease

1. Treatment focuses on prevention, maintaining oral comfort and emergency care
2. Complex or time comsuming treatment avoided
3. Sedation and short appointments
4. Interventions should be as non-invasive as possible

Figure 1: Treatment suggestions for dementia patients[3;10;40-43]

either to an increase in the number of extractions in this population or in the dental care they receive.[23]

Periodontal/gingival status

People with dementia can suffer from periodontal and gingival problems and there are suggestions that the extent of these problems are related to the level of dementia severity.[31] However like many aspects covered in this summary the data does not provide a unanimous consensus on the extent of the problems.

People with dementia (in some cases AD specifically) can have:

- Significantly poorer gingival health than those without the condition[28;35]
- Significantly heavier gingival bleeding[17;28]
- Significantly heavier inflammation (in disabled dementia patients)[31]
- Greater plaque and calculus accumulation[7;17;28;31]
- Increased likelihood of deep periodontal pockets[37]

For some of these factors there is converse data illustrating no significant differences for recession, pockets or attachment loss between those with dementia and those without the illness[17;28] and that dental plaque and calculus scores may not differ with dementia severity.[32]

Denture use/state

No difference in factors such as denture type and status between controls and AD are seen. However significantly more AD sufferers do not remove their dentures at night[36] and dementia patients are more likely to have poor denture hygiene.[18;37] Furthermore stability and occlusion of dentures are generally less satisfactory as the disorder progresses.[32]

Oral lesions and pathology

There is conflicting data relating to oral lesions and pathology in dementia sufferers. In some cases dementia suffers (and those without dementia) have no overt signs of soft tissue pathology; in others denture stomatitis, denture hyperplasia, mucositis denture associated ulceration, general ulceration and angular cheilitis can be seen.[18;32] Furthermore those with dementia can have an increased prevalence, in some cases significantly, of denture-related oral mucosal lesions, angular cheilitis, coated hairy tongue and gingival hyperplasia.[36;39]

Other

Swallowing was found to be significantly worse in dementia suffers[7;26] and evidence suggests that those with AD have reduced saliva flow[28] while people with forms of dementia other than AD have significantly more xerostomia than those without dementia or those with AD.[35]

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Managing dental problems in dementia

While no studies were found covering the management of dental problems in patients with dementia, there are a number of publications on treatment planning for dementia patients. Although these publications are considered to have little value in terms of the level of evidence they carry and are not strictly related to the question posed, they may provide some steer as to how to best manage the oral health needs of those with dementia. Summarised below is some of the advice on treatment planning provided by a selection of these publications.

Dental treatment for a patient with dementia is based on the dentist's clinical judgement together with the input of the patient (if possible) and their family or carers. Areas that should be considered are:[3;10]

- The patient's level of independence, co-operation, cognitive state and physical impairment
- The presence of dental problems and whether they are symptomatic or asymptomatic
- The individual's ability to give informed consent

Once this information has been collated, a treatment plan can be generated with the goals being to prevent further oral disease, restore and maintain health and make oral health care a normal part of the patient's life.[10] The plan should be flexible, anticipating a decline in patient health over time[3;40] and be realistic given the patient's disorder and physical status.[3;40] Given the nature of dementia, caregivers' perceptions and knowledge about oral health and hygiene must be considered as they represent the primary providers to the patients as the condition progresses.[41] As dementia progresses, and the patient's health declines, different approaches will be required (Figure 1).

Methods

Search strategy

Two searches of Ovid MEDLINE were carried out. One search was to retrieve publications covering dental problems in dementia patients and employed Ovid filters for systematic reviews, meta-analysis and clinical trials and the second search located publications covering the management of dental problems in dementia patients. Search terms used included: Comprehensive Dental Care, Mouth Rehabilitation, Dental Health Services, Stomatognathic Diseases, dementia and alzheimer disease. Both free text and key terms were employed. No limits were placed on publication language or date. Searches are current as of August 2013.

The following databases were also searched using similar strategies:

- Cochrane library (DARE, NHS EED, HTA Database, Cochrane reviews)
- Pubmed MEDLINE
- Science Direct

Grey literature was searched and a snowballing strategy was employed once publications covering the questions were located. Papers were included if they examined oral health/dental problems in dementia patients when:

- Dementia had been formally diagnosed previously or in the current study
- The study investigated ways in which dental problems in dementia patients could be managed.

Publications were excluded if patients were grouped together in a manner that prevented data covering dementia patients from being extracted, if it was not clear that the study population suffered from dementia e.g. if cognitive impairment using a test such as the MMSE was used to assess people who had not formally been diagnosed with dementia.

Results

Over 200 publications were returned though searches and following sifting by the author the full text of 77 were examined. 28 were judged as relevant. The majority examined Alzheimer's disease though some studies examined dementia in general. One possibly relevant publication[16] was not included as the author was not able to obtain the full text.

Twenty-eight publications, covering 24 studies, investigating dental problems in patients with dementia were located; none were systematic reviews or meta-analysis. Some studies collected baseline data[17-22] while others were longitudinal with follow-up periods varying from two to seven years.[7;23-29] The participants of the studies varied in their habitat with some residing in the community[7;17;30] and others in institutions.[19;24;25;27;31-33] Data collection methods varied and included surveys,[23;34] retrospective examination of medical/dental records[30] and oral examination.[7;18;19;21-28;30-32;35-37] Studies were carried out in Australia,[7;13;22;25-27;31] the USA,[17;19;24;28;29] the UK,[18;32] other parts of Europe,[21;23;30;35-38] and Brazil.[20;34] All the located studies had limitations such as population/sample bias[13;25;35;38] including focusing on patients that were likely to be more health conscious and therefore have better than average oral health or those at the lower end of the dementia spectrum. Further limitations, as recognised by the authors of the publications, included low response rate and the death of participants,[13] the lack of ability to collect medical data[35] and the reliance on medical records.[30] Dental examiners performing

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the studies were not always calibrated[30] and providing oral examination away from the clinic caused some problems.[38]

Searches were conducted in August 2013.

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