



Dementia and your teeth

Good dental care is generally considered to be a shared responsibility between the individual and their dental provider together with the maintenance of a healthy diet. However, as dementia progresses, the ability of the individual to look after their teeth decreases. Lack of oral care can lead to accelerated tooth decay and dental abscess formation as well as gum infections which can then impact on general health and quality of life. Oral pain and discomfort can be devastating, compounding psychosocial problems, disrupting family dynamics and frustrating nursing home staff and carers. As appearance, function and comfort suffers so may an older person's self esteem, dignity and confidence.¹

Why are teeth important?

Maintaining healthy teeth throughout life benefits diet, nutrition, general health and well-being of the individual. In many societies the appearance of an individual's teeth reflects a person's social standing. When we smile we show our teeth. Damaged, discoloured or missing teeth may cause embarrassment and affect communication with others. Almost two thirds of the respondents in a Dutch study reported that the appearance of their teeth contributed positively to their happiness.²

Teeth for life

In many parts of the world people are living longer. Western countries in particular have seen average life expectancy for both males and females born today increase by nearly 30 years when compared to those born in the early 1950s. Instead of having few natural teeth in older age as in the 1950s, older people today retain many natural teeth.

Whether this is a result of fluoridated water, better nutrition, a greater understanding of the benefits of looking after one's teeth and gum health, better dentistry or any combination of these factors doesn't seem to matter much when you are older. By this stage there are numerous health issues, countless medications being taken, cognitive and fine motor functional deficits, all of which limit the ability of many older people to practice good oral and dental care.

Healthcare in old age becomes difficult when frailty and dependency disturbs life's routines, such as oral hygiene and attending a dentist.³ Residents with dementia in nursing homes may find that oral health deteriorates quite rapidly,⁴ primarily due to a lack of access to dental care.

Better oral and dental health in the elderly leads to:

- Better nutrition
- Increased confidence
- Better socialisation
- Better communication
- Better overall health⁵

Saliva is important in reducing tooth decay

Tooth decay is basically a bacterial infection that causes demineralisation of tooth structure by producing an acidic environment in the mouth. Every time we eat or drink our teeth undergo reversible demineralisation. Good habits, such as brushing twice daily, drinking fluoridated water (if available), regular rinsing, flossing and cleaning between teeth, limiting sugary foods and drinks all lead to a reduction in tooth decay and gum disease. With adequate saliva and good oral care and diet, tooth decay will not progress; however, as we age our ability to produce saliva gradually diminishes. Production of saliva is also affected by a wide range of medical conditions and taking multiple medicines in certain combinations can make the mouth very dry rapidly. A dry mouth may affect taste, speech, nutrition and

the ability to wear dentures by causing discomfort and irritation, poor retention and increased oral thrush. Saliva contains components which reduce harmful bacteria, decrease the risk of infection in the mouth and neutralise acids produced from food by the bacteria. Its main contribution is the ability to cleanse the teeth and soft tissues and to lubricate the mouth allowing for swallowing and the easy passage of food. These protective benefits of saliva are lost when the quantity and quality of saliva is diminished. As the mouth becomes dry the oral environment becomes more acidic and leads to an increased incidence of thrush and gum disease. Without adequate saliva to bathe the teeth rapid dental decay can occur, especially around the neck region of teeth. The tooth root surfaces, which are relatively soft, become exposed and are highly susceptible to decay. Decay associated with dry mouth may begin as spotty white areas which eventually encircle the entire tooth or undermine existing fillings if left untreated.

What causes gum disease?

The major cause of gum disease is dental plaque. Plaque is the sticky, colourless film containing bacteria that build up on teeth. The bacteria in plaque cause irritation of the gums that support the teeth. This irritation can lead to inflammation and infection that can destroy gum and underlying bone. When plaque is not removed it becomes hard over time eventually becoming a rough deposit

called calculus which can adhere to the teeth.

Link between gum disease and Alzheimer's

Antibody levels to the bacteria involved with gum disease have been demonstrated to be higher in those with Alzheimer's and as inflammation associated with gum disease have been found in the brain it may be a potential trigger for the disease.^{6,7,8,9} As the costs associated with maintaining a clean and healthy mouth are miniscule compared to the costs associated in managing Alzheimer's, oral and dental care must be part of every older person's care plan. A clean and healthy mouth is a priority for the elderly.

Caring for teeth when we get older

Today's elderly have generally placed a much higher value on good health than in previous generations, including oral and dental health. Frail older people are positively influenced by natural teeth and this effect seems to increase with increasing frailty. Preservation of teeth contributes to a positive body image and self-worth. Oral care for the elderly should aim to preserve as many functional teeth as possible.¹⁰

Many elderly have had good regular dental care and in many instances complex dental procedures. However, when we combine the effects of a dry mouth, cognitive impairment, poor fine motor skills, a poor swallowing reflex and a lack of motivation, the mouth can become a reservoir for the bacteria associated with aspiration pneumonia which is one of the leading causes of death in the elderly.

This is a higher risk in those who are chronically or terminally ill and as the same bacteria found in the mouth around teeth and poorly maintained dentures are linked to this particular pneumonia both false and natural teeth and gums need constant care. Improving oral care by brushing after each meal, cleaning dentures once a day and professional oral care weekly seems the best intervention to reduce the incidence of aspiration pneumonia.^{11,12}

Poor oral health – a global problem

The World Health Organisation (WHO) has expressed concern that the oral health of older people is widely neglected. Based on a global survey of older people WHO has called for public health action by strengthening health promotion, integrating disease prevention and improving age-friendly primary oral health care.¹³ Exclusion of cognitively impaired older adults in the past has led to wide spread under reporting of poor oral health status.¹⁴

Oral cancer – a concern for the elderly

The global burden of cancer continues to increase largely because of the ageing and growth of the world population alongside an increasing adoption of cancer-causing behaviours¹⁵, in particular smoking. In some countries early detection of cancers such as breast, cervical, bowel, prostate and others benefit from publicly funded screening programmes; however, there is no simple screening process for oral cancers. As oral cancers are primarily age related and occur in later life periodic dental review is the best way to identify a possible problem. Oral

cancers are one of the easiest to detect and commonly occur on the lip, tongue, floor and roof of the mouth, cheek and gums, but can appear on any area within the oral cavity. Pain is rarely an early symptom of oral cancer. The cancer may appear as a white or red patch, a change in texture of oral tissues, ulceration or swelling. Any sudden unexplained speech patterns, difficulty in swallowing, excessive bleeding from gum margins or any oral site must be explored as these may be early signs and symptoms of an oral cancer. In the cognitively impaired person be aware that a reluctance to eat or touching a part of the head or neck may be an early sign of an oral problem which may be more than a toothache. Oral cancers often have a distinctive odour.

Most ulcerations, swellings and colour changes in the mouth are **not** cancer but may be caused by local factors or are manifestations of other illnesses. A biopsy or other investigation should be considered if they have been present for 14 days or more. Early identification followed by appropriate medical management can elevate the rate of complete cure, significantly improving quality of life. Late diagnosis is associated with extensive, invasive and often debilitating combinations of surgery, radiotherapy and chemotherapy and increased morbidity and reduced longevity.

Ways to maintain a healthy mouth

- Brush morning and night using high fluoride toothpaste, when available, on a dry tooth brush.
- After brushing with toothpaste do not rinse out. This allows longer exposure of teeth to the fluoride.



Advanced gum disease from lack of oral care



Advanced tongue cancer which would have been diagnosed sooner had the patient seen their dentist regularly



Squamous cell carcinoma of the gum – a form of cancer

- Use a soft tooth brush on the gum line and tooth surfaces.
- Keep the mouth moist at all times by hydrating with continuous sips of water or applying an artificial saliva product.
- Daily use of an antibacterial mouth rinse, spray or gel – but avoid using mouth rinses containing alcohol as they have a drying effect on the gums.
- Reduce the amount of sugar, cakes, confectionary and sugary drinks consumed.
- Encourage 'swish and swallow' by providing water after all food and drinks.

Ways to help

The amount of assistance a carer or relative needs to provide depends on the stage of dementia.

Early or mild stage – the individual may require no assistance.

Mid stage – the individual may require some degree of reminding or supervision.

Late stage – the individual will require supervised oral care.

What about dentures?

A component of good daily oral hygiene is the removal of dentures overnight to allow the tissues in the mouth to re-oxygenate. Prolonged use of dentures and inadequate cleaning can result in a fungal infection (thrush) forming, resulting in sore red areas under the dentures.

- Remove and rinse dentures after every meal. Clean with a hard tooth brush, nail brush or denture brush with plain soap and water.

How to improve access to the mouth

People with mid to late stage dementia often exhibit neurological reflexes or involuntary responses that can be a problem when attempts are made to access the mouth, teeth or dentures such as closing their lips, clenching their mouth, biting or moving their head.

The most useful strategy to improve communication with cognitively impaired adults is to break the task down into small achievable steps.

Consider:

- Developing a routine with daily oral hygiene care at the same time every day.
- Using short simple sentences and directions. Use reminders and prompts. A small amount of toothpaste on the individual's lip may prompt them to open their mouth.
- A towel placed around the individual's neck like a bib can be held by one corner to protect the caregiver from the individual spitting at them.
- A toothbrush bent backward at 45 degrees may help with clenching. Slide the toothbrush into the corner of the mouth.
- Using a three sided, surround toothbrush or an electric tooth brush will make brushing easier for those with limited hand control.
- Distract the individual by singing, getting them to hold an item or gentle touch and talking.
- *Chaining technique*: the caregiver starts brushing the individual's teeth and the individual takes over.
- *Bridging technique*, to improve sensory connection: the individual holds a toothbrush while the caregiver brushes the teeth.
- *Hand over hand*: the caregiver's hand is placed over the individual's hand to guide them through the task of tooth brushing.
- *Rescuing technique*: a second caregiver or person enters a situation and offers to 'help' the individual by taking over for the initial caregiver.
- Getting the individual to say 'EEEEEE', enables the caregiver to clean between the teeth, using interdental brushes or tooth picks. Brushes can be dipped in mouth rinse. Never place fingers between teeth.¹⁶



Moderately advanced floor of mouth cancer



Multiple medications are often not taken correctly and are associated with causing a reduction of saliva and accelerated dental decay



Accelerated dental decay in a dry mouth

- Once dentures are removed clean the mouth with a soft tooth brush or mouth swab.
- If the individual has a dry mouth, a saliva substitute can be used on the denture before inserting into the mouth.
- Remove dentures at night and soak in water.
- In the later stages of dementia, wearing dentures can become problematic and may have to be left out.

What not to do

When cognitive impairment is present the individual will need guidance in maintaining good oral and dental habits.

- Don't forget to clean the back teeth if you are providing the dental care.
- Don't clean the tongue with a hard tooth brush as this may hurt.
- Don't give lollipops, chocolates or cake when visiting.
- Don't offer juice, cordial or soft drinks. Diet or sugar free drinks can be quite acidic and if there is a dry mouth present decay can be very rapid.
- Don't smoke.
- Don't mix medicines with jam.

As dementia, in the majority of cases, occurs later in life and life expectancy is increasing globally the number of older people living in the community or in residential care will inevitably increase significantly. When health declines or when an individual is no longer able to properly care for him- or herself the benefits of a lifetime of good dental care can often become undone rapidly when neglected.

Families and carers must be aware that there may be pain and discomfort associated with poor oral and dental health which the individual may not be able to verbalise. They should be proactive in arranging dental care which should be aimed at preserving function and comfort.

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