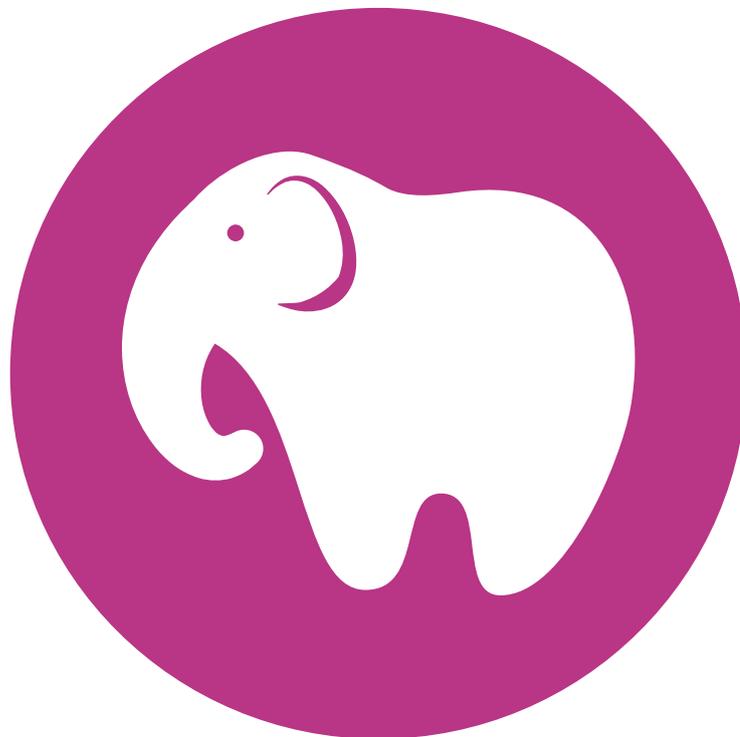


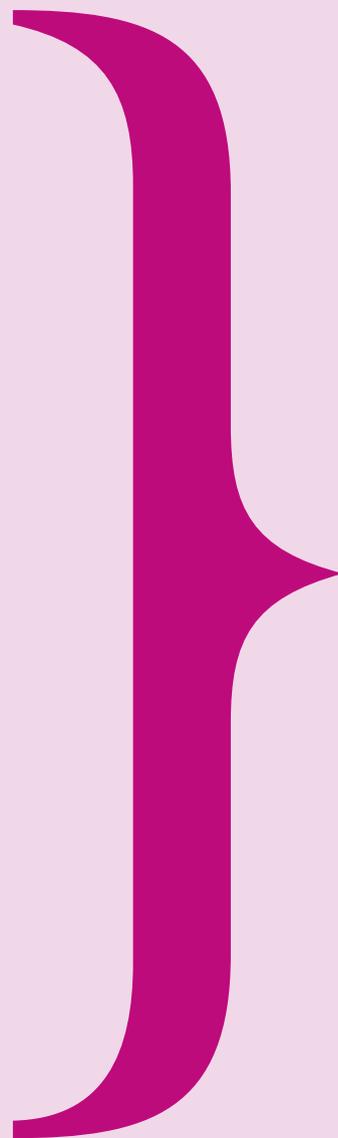
# Mini Mouth Care Matters

A guide for hospital healthcare  
professionals



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# 1

## Introduction

### Key messages

- Mini MCM is a training initiative to improve the oral health of hospitalised paediatric patients
- Mini MCM training comes in various formats
- Mini MCM training is not just for nurses but a range of health care professionals



## 1.1 What is Mini Mouth Care Matters?

Mini Mouth Care Matters (Mini MCM) is a training initiative aimed at improving the oral health (health of the mouth) of hospitalised child patients in England.

This guide complements the Mini Mouth Care Matters training that has been delivered for hospitals. The information to the best of our knowledge, is up-to-date and evidence-based.

The programme was developed from and based on the Mouth Care Matters initiative for adult inpatients which was developed in East Surrey Hospital, an acute hospital with approximately 650 beds. From a comprehensive review of the current literature, we believe that the findings at East Surrey Hospital, with regards to mouth care, are representative of hospitals across the country for both adults and children. For this reason this guide includes findings from focus groups, clinical audits, patient cases and direct observations of mouth care being carried out on patients on the wards.

Mini Mouth Care Matters is based on four key themes where hospital staff require:

- **Knowledge** of the importance of mouth care and good oral health, understanding the links to general health and well-being
- **Skills** gained through training on how to carry out an assessment of the mouth and basic mouth care on a patient
- **'Tools'** needed to provide good mouth care
- **Support** when necessary from doctors, dentists (where available) and/or the mouth care team.

**Mouth Care Matters** **Health Education England**

**Staying overnight?**  
If you've forgotten your toothbrush, please ask your nurse for one

**Brush teeth twice a day**

Use a **fluoride toothpaste**

**After brushing, spit, don't rinse**

**Avoid sugary snacks and drinks**

For **hospital patients, oral hygiene is important**. Bacteria can **build up** in the **mouth** and **throat** and can **move into** the **lungs**, causing **infection**.

**Some children** may need **mouth care** more **often** if they:

- have a **feeding tube**
- have a **tracheostomy**
- are on **long-term ventilation**
- are admitted to **critical care**

Please **ask your nurse** for more **advice** and **support**

**Mouth Care Matters** **Health Education England**

**S** Say 'Ahh'- and put the mouth back into the body

**M** Mouth care pack on admission

**I** Include mouth care as an essential part of patient care

**L** Lift the Lip

**E** Every contact counts

**SMILE**

### 1.2 Who is Mouth Care Matters training for?

Mini MCM is not only about training the nursing staff/allied health care professionals in a hospital. Oral health promotion is also important for other health care professionals involved in the care of hospitalised patients including doctors, speech and language therapists, dieticians, occupational therapists and pharmacists. Working together we can form a more holistic approach to patient care, including mouth care. The ultimate aim is to 'put the mouth back into the body' and think of it as a whole, rather than two separate entities.

### 1.3 Mini Mouth Care Matters team

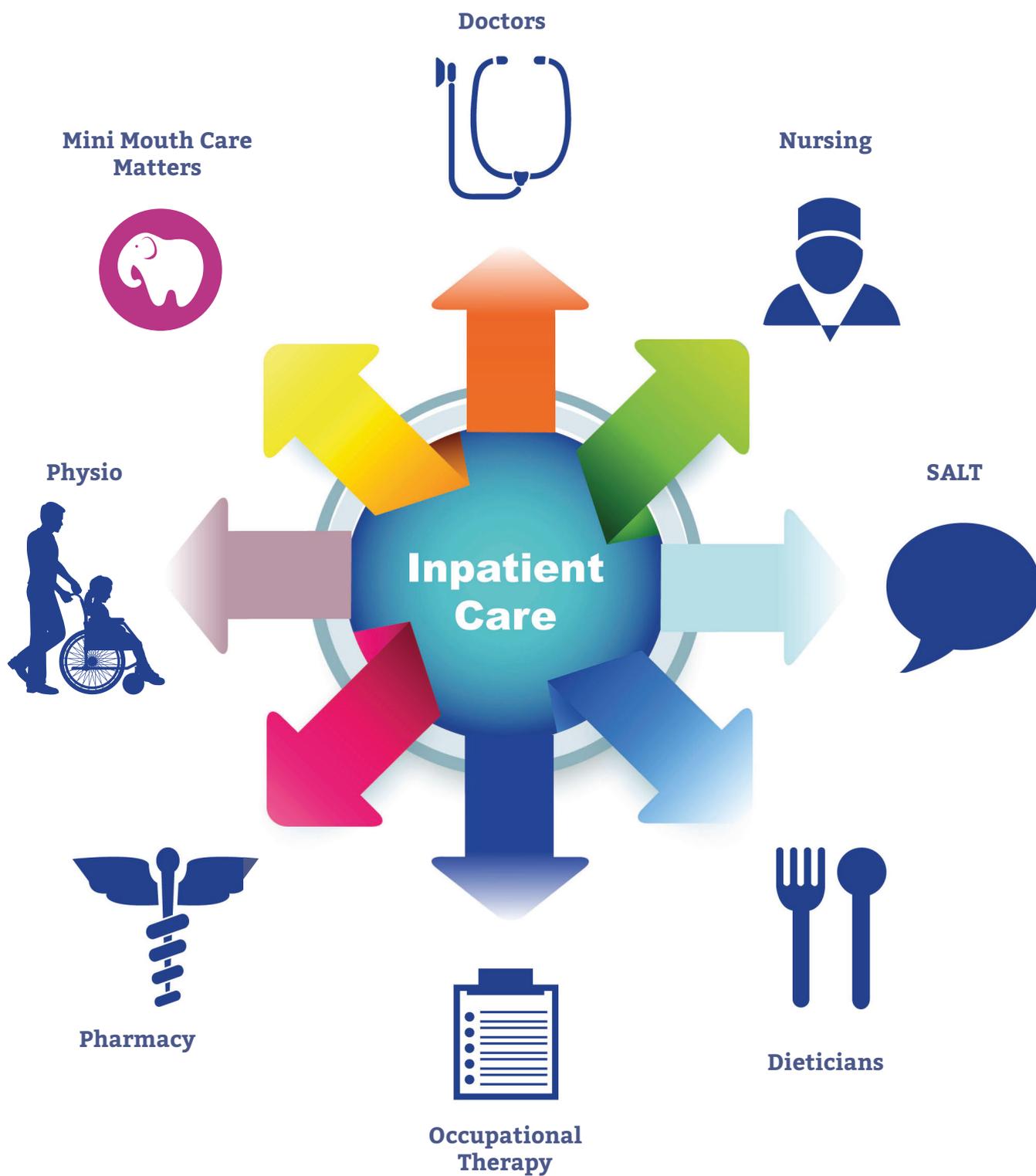
Mini MCM health care professionals will have the potential to form a mouth care team. This team is responsible for:

- Undertaking baseline and re evaluation audits to measure improvement with mouth care. before during and after implementing a change
- Supporting staff and parents/carers with mouth care in challenging situations
- Liaising when urgent dental referrals are needed during an inpatient stay (if a pathway is available to facilitate this)
- Signposting patients to appropriate dental services upon discharge
- Supporting the hospital with mouth care policies and audit
- Mini Mouth Care Matters promotional and social media work.

### Roles of health care professionals in mouth care

Health Care Professional	Roles in mouth care and oral health may include:
Doctors	Diagnosing and prescribing for oral conditions such as ulcers and oral thrush
Nursing staff/ Health Care Assistants	Carrying out mouth care assessments and assisting or providing mouth care
Speech and language therapist (SALT)	Providing mouth care advice for high risk dysphagia patients
Dietetics team	Nutritional advice taking into account oral/dental health
Occupational therapists (OT)	Helping to advise and/or create aids for toothbrushes for patients with physical disabilities
Pharmacists	Advising patients/carers on drug related oral problems including dry mouth
Physiotherapists	Role can involve looking in the mouth and make other teams aware of poor oral conditions

Diagram to illustrate the Mini Mouth Care Matters team as part of inpatient care



# 2

## Why do we need Mini Mouth Care Matters training?

### Key messages

- Oral health has been found to deteriorate in hospitalised patients
- Some patient groups will have an increased risk of developing problems with their mouths
- There are a number of barriers that may prevent nursing staff from providing/ assisting with mouth care



## 2.1 What is the impact of hospitalisation on oral health?

There is evidence that hospitalisation is associated with a deterioration in the oral health of patients (Terezakis et al, 2011). This in turn has been linked to:

- **An increase in hospital-acquired infections (see section 4.2)**
- **Poor nutritional intake**
- **Longer hospital stays**
- **Increased care costs.**

Poor oral health is strongly associated with malnutrition and this in turn can affect a patient's recovery (Gil-Montoya et al, 2008) thus increasing time in hospital.

There are certain groups of patients that will be more at risk of developing mouth related problems due to either one or a combination of medical, cognitive or physical disabilities (see Section 8).

Table to show patient groups with increased oral health risk factors (list not exhaustive):

Autistic Spectrum Disorder	Ventilated patients
Learning disabilities	Immunocompromised
Palliative care	Poor mobility
Head & neck radiation	Oxygen therapy
Chemotherapy	Mental health
Delirium	Physical disability

## 2.2 Current status of child oral health in the UK

23.3% of 5 year old children in England have experience of dental decay (PHE 2017). Dental decay can affect child growth and development through pain and poor nutritional intake. Approximately half (58.6%, PHE 2017) our UK children do not regularly visit the dentist, hence they are at increased risk of developing decay. At the extreme end, children with multiple grossly decayed teeth require their removal under general anaesthetic in hospital. This is due to lack of dental understanding and a high sugar intake. Dental decay is entirely preventable, and parents and carers play the most important roles providing the best start to life for children.



Severe early childhood caries

## 2.3 Dental Check By One

Dental Check By One (DCby1) is a national campaign launched by The British Society of Paediatric Dentistry (BSPD) in partnership with The Office of the Chief Dental Officer England (OCDO). Its main aim is to improve rates of dental visits by children between the ages of 0-2.

DCby1 targets young children and their parents to initiate the regular routine of attending the dentist ideally from the age of one year (or before). By seeing the dentist for check-ups, children can become familiar with the dental environment. They will receive essential preventative advice regarding oral health care and diet, thereby reducing dental anxiety and helping to manage any disease that may be found early. At present this initiative has contributed to an increase of 23% of children being seen by a dentist by the age of one.



## 2.4 We are taking more medication

Patients who are hospitalised are generally more likely to be taking medication. Dry mouth or xerostomia is a common side effect of over 400 medications (see Section 12 for list of drugs). Having a dry mouth can have a significant negative effect on oral health, causing pain, difficulty in eating & speaking, and an increase in dental disease such as dental decay, gum disease and thrush. Steroids and antibiotics can also lead to changes in our immune system and make patients more susceptible to fungal infection (e.g. oral thrush).

## 2.5 What are the barriers to providing good mouth care in hospitals?

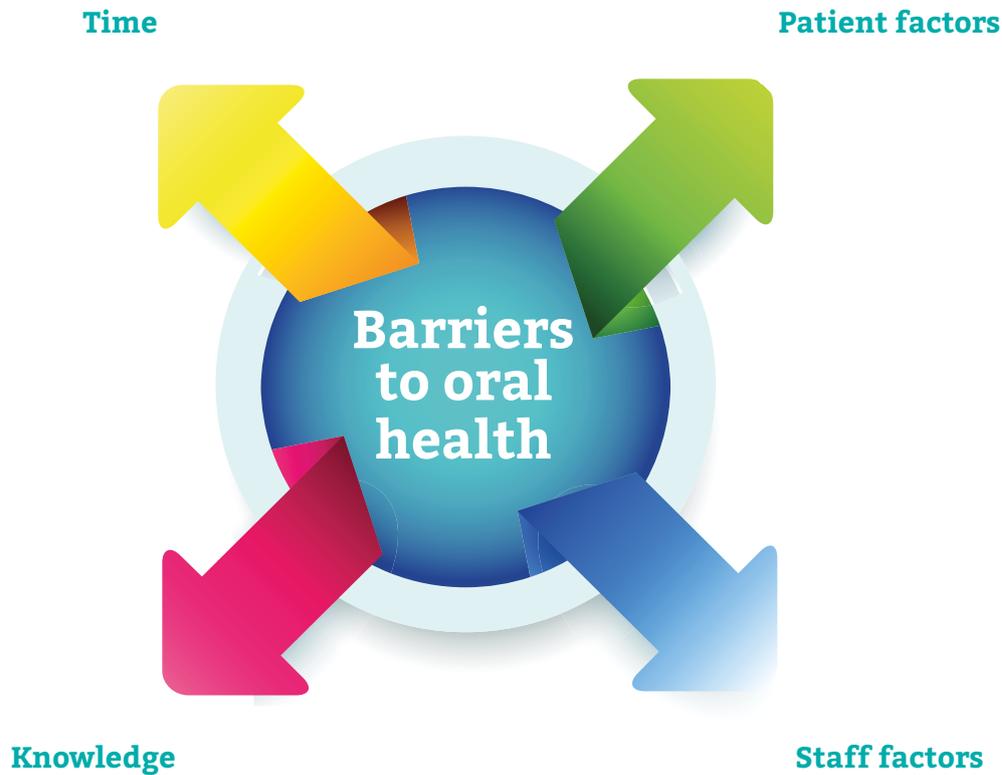
There is a wealth of evidence that shows that mouth care is frequently neglected or is not a priority for hospitalised patients. A study of hospitalised patients by Sousa et al, (2014) found that patients' oral health was not being assessed and that hospitals had no policy in place for routine oral health practices. It has also been shown that there is often no standardisation in the delivery of oral care and that a lack of equipment like toothbrushes and toothpaste, can mean that nurses are sometimes improvising with forceps and gauze (Stout, Goulding and Powell, 2009). Common nursing barriers to providing or assisting patients with mouth care in hospital have been researched (Adams, 1996; Preston et al, 2006). These include:

- **Lack of knowledge**
- **Lack of training**
- **Lack of time**
- **Lack of equipment**
- **Lack of oral assessment tools**
- **A disagreeable attitude towards mouth care**
- **Attitude towards own dental health**

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Diagram to illustrate the barriers to good mouth care



In a survey of nursing staff on oral care, 95% felt that assessing and providing mouth care is part of their role as a nurse.

Only 53% of the nursing staff that completed the survey had received training in assessing patients' mouths and/or providing or assisting with oral care. Of those who had been trained, the majority had received it as part of their nursing assistant training.

Of 100 people who attended a MCM training session, only 20% had previous training in mouth care.

# 3

## Why is oral health important for patients?

### Key messages

- Good oral health is the absence of pain and disease with the ability to eat, drink and communicate
- Poor oral health can lead to dehydration and malnutrition for hospitalised patients resulting in delayed recovery and an increased hospital stay
- Good oral health is important for child growth and development



### 3.1 Definition of oral health

Oral health is defined as: 'A standard of health of the oral and related tissues which enables an individual to eat, speak and socialise without active disease or embarrassment and which contributes to general wellbeing' (Department of Health, 1994).

Good oral health is more than just an absence of disease and is important for:

#### Eating and drinking

If patients are having difficulty with eating and drinking as a result of a mouth related problem, this may lead to malnutrition and dehydration affecting growth and development, alongside their recovery, this could potentially impact on the length of their hospital stay.

#### Speaking and socialising

Poor oral health can affect the ability to speak, smile or socialise. Patients may find it more difficult to communicate with family, friends and hospital staff.

### 3.2 Oral hygiene and oral health

Good oral hygiene practices are essential to ensure the maintenance of good oral health. Oral diseases are largely preventable either through modifying diet (reducing frequency/intake of sugar), the regular removal of plaque

deposits, and the delivery of fluoride most commonly through using a fluoride toothpaste. (Public Health England, 2017).

Although good oral hygiene practices may not seem to be a key priority for hospitalised patients, good oral care will improve not only the patient's oral health and prevent oral pain and infection. It will also impact on a patient's overall health and wellbeing. Locker et al. (2002) showed that in medically compromised patients, oral health problems significantly affect their wellbeing and quality of life.

Poor oral health can impact patient recovery and increase length of hospital stay. This in turn holds the risk of developing healthcare associated infections.

### 3.3 References

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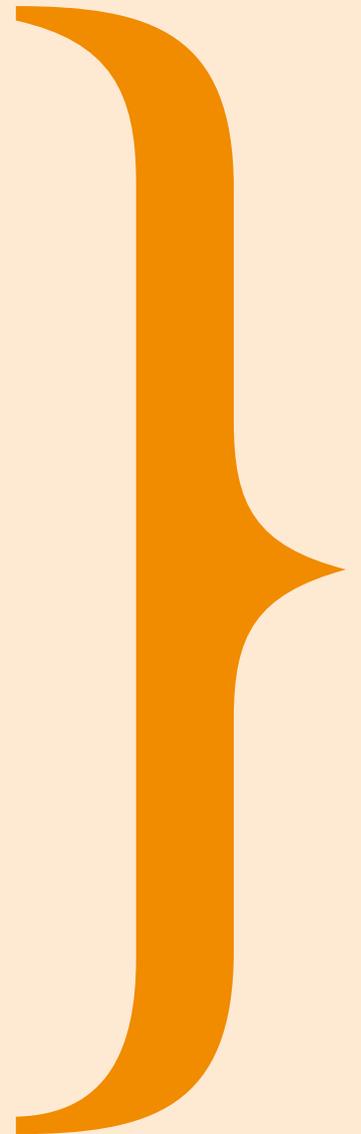
Claire is a 6-year-old patient who has been admitted to hospital to have her appendix removed. She came in as an emergency and therefore her family forgot to bring any oral health products. She had recently seen her dentist who placed a temporary filling in a tooth. Whilst in hospital, this filling came out, causing her pain and discomfort from the broken-down tooth. The nurse arranged for the dental team to come to the ward to place a temporary filling and provided Claire with a toothbrush and toothpaste. She was no longer in pain and the family were advised to attend their local dentist upon discharge.

# 4

## Oral health and general health

### **Key messages**

- Oral health is linked to general health
- Poor oral hygiene is associated with hospital acquired infections
- There is a two-way relationship between diabetes and gum disease



#### 4.1 Oral health links to systemic disease

There is increasing evidence to show that poor health and poor oral hygiene are linked to general health and chronic systemic disease. This can be broken down into:

- Oral health and hospital-acquired infections
- Oral health and chronic diseases

#### 4.2 Hospital-acquired infections linked to poor oral hygiene

##### Bloodstream infections / Ventilator-assisted pneumonia (VAP)

VAP is defined as pneumonia that develops 48 hours or longer after mechanical ventilation is given by means of an endotracheal tube or tracheostomy. Bacteria can colonise the endotracheal tube and VAP results from bacteria invading the lower airways. Intubation can lead to an increase in oral and gastric secretions entering the lower airways and evidence suggests that oral bacteria could be a cause of VAP (Shi et al, 2013).

##### Hospital-acquired pneumonia (HAP)

Dental plaque contains many different species of bacteria, some of which can cause pneumonia. Aspiration (inhalation) of oropharyngeal secretions (including dental plaque) has been found to be associated with pneumonia (Scannapieco, 2006). Patients lying supine in a hospital bed are more likely to aspirate oral secretions.

HAP increases hospital stays by an average of eight days and mortality rates are high; between 30 and 50% (NICE, 2014).

#### 4.3 Links to general health and systemic disease

##### Diabetes

There is now a large amount of research indicating a two-way relationship between periodontal (gum) disease and diabetes. Poor glycaemic (blood sugar) control in diabetics may be a risk factor for periodontal (gum) disease and uncontrolled periodontal disease could have an adverse effect on glycaemic control (Taylor et al, 2008).

#### Cardiovascular disease

There is evidence that in people with periodontal (gum) disease there is an increase in both the prevalence and incidence of cardiovascular disease. There are several theories suggested to explain this, including a similar inflammatory response (Beck et al, 1996), direct bacterial inflammation or an increase in C-reactive protein.

#### Infective endocarditis

Infective endocarditis results when bacteria enters the bloodstream of a susceptible individual and colonises the endocardium (lining of the heart); this leads to inflammation of the endocardium and heart valves. The disease carries a high mortality risk and can be caused by bacteria in the mouth. A study has found that poor oral hygiene and gingival bleeding after tooth brushing is associated significantly with infective endocarditis-related bacteria in the blood (Lockhart, 2009). Oral hygiene, particularly in those who are susceptible, is important in reducing the risk of infective endocarditis (Strom et al, 2000).

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# 5

## A healthy mouth

### Key messages

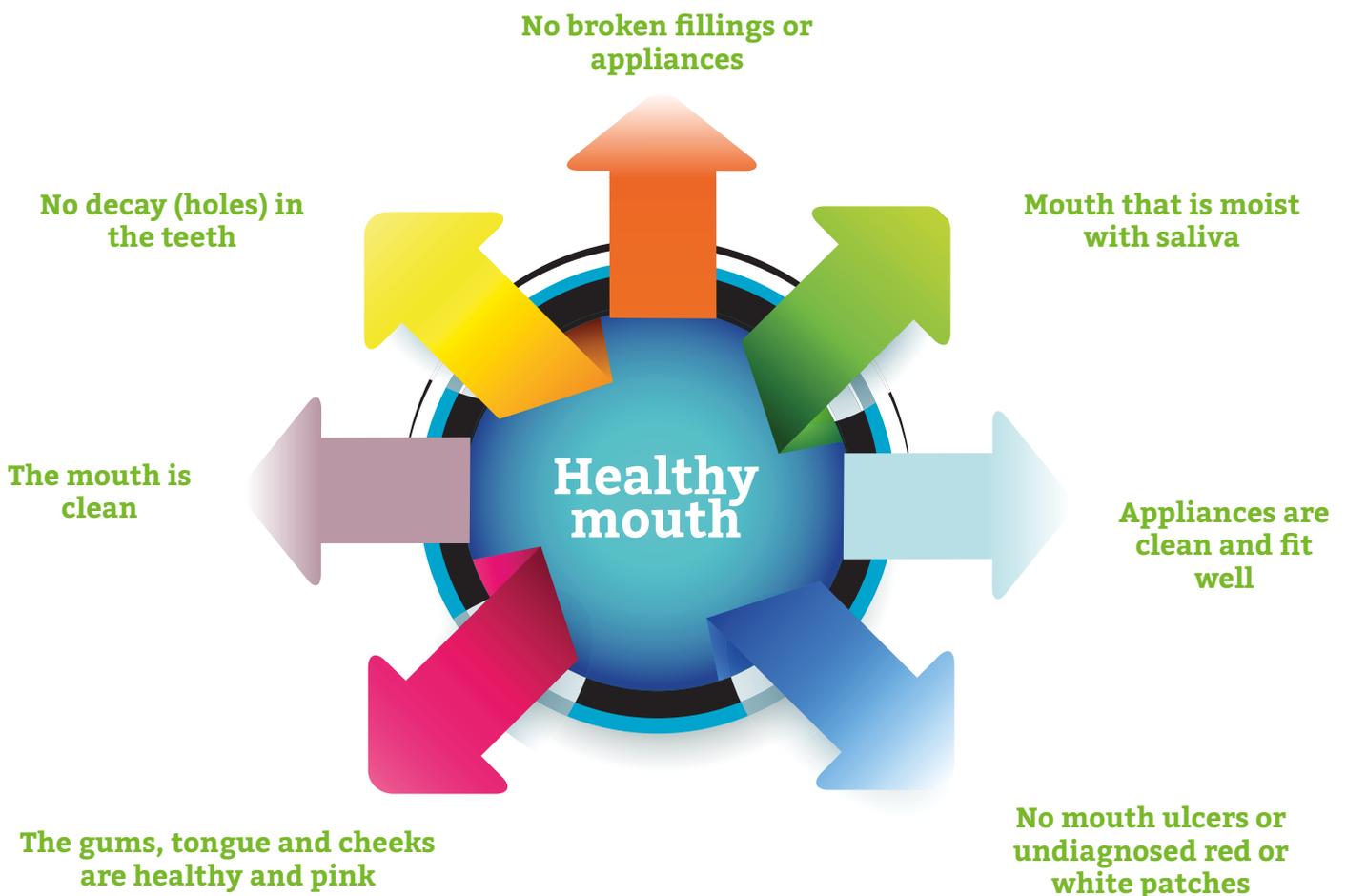
- A healthy mouth includes a healthy tongue, palate, cheeks and teeth
- Oral problems can make it harder to eat and drink leading to dehydration and malnutrition
- Hospitals should have a pathway for urgent dental care



### 5.1 Why 'Mini Mouth Care Matters' and not 'Dental Care Matters'?

Mouth care is an essential part of personal care and without it oral health will deteriorate. Mini Mouth Care Matters relates to the care and assessment of the whole mouth, with preferences and clinical needs that an individual requires while in the clinical care of the hospital (Essence of Care, 2010).

### 5.2 What does a healthy mouth look like?





An example of an unhealthy mouth



An example of a healthy mouth

### 5.2.1 Basic Dental Anatomy - Changing Dentitions

Children's mouths change as they grow.

In their first few years children will have a set of 20 baby teeth. Initial eruption of baby teeth can causing teething. This usually stops when the full set of baby teeth are through at approximately 3 years of age.

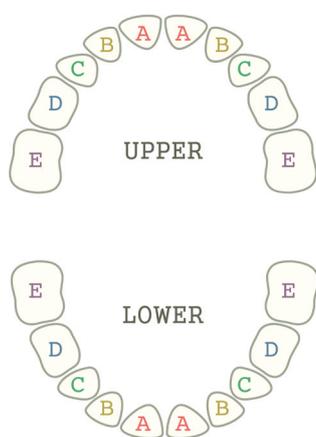
At around six years of age, the adult set will start erupting. The first usually erupts at the back of the mouth behind the baby teeth. The start of this stage will vary; there is no correct age for adult teeth to start erupting. Over time, baby teeth will usually become wobbly and be replaced by adult teeth, resulting in up to 32 adult teeth. This can continue into teenage years.

### 5.2.2 Natal and Neonatal teeth

Natal teeth are teeth that have already erupted through the gums at birth. Neonatal teeth are teeth that come through the gums in the first month of life.

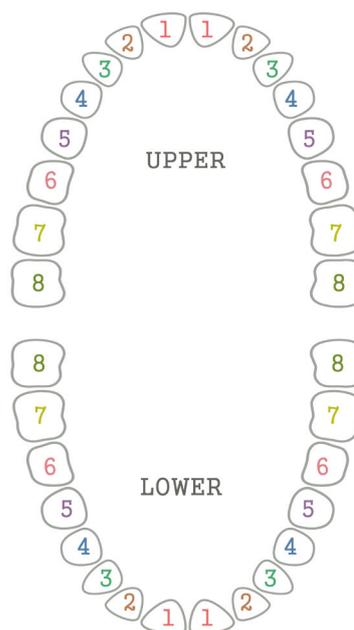
Their occurrence is rare (between 1:2,000/1:3,000 live births) and some cultures view them as either good fortune or a bad omen. Their cause is debatable and could be due to genetics, hormone disturbances and more.

They can provide additional complications including pain on breast feeding or refusal to feed. This in turn can provide additional stress to the family. It is important to reassure the child's parents and seek a dental opinion. Loose natal or neonatal teeth are often removed as they are an aspiration risk. (Rao & Mathad, 2009).



- UPPER
- A 8-12 MONTHS
  - B 9-13 MONTHS
  - C 16-22 MONTHS
  - D 13-19 MONTHS
  - E 25-33 MONTHS

- LOWER
- A 6-10 MONTHS
  - B 10-16 MONTHS
  - C 17-23 MONTHS
  - D 14-18 MONTHS
  - E 23-31 MONTHS



- UPPER
- 1 7-8 YEARS
  - 2 8-9 YEARS
  - 3 11-12 YEARS
  - 4 10-11 YEARS
  - 5 10-12 YEARS
  - 6 6-7 YEARS
  - 7 12-13 YEARS
  - 8 17-21 YEARS

- LOWER
- 1 6-7 YEARS
  - 2 7-8 YEARS
  - 3 9-10 YEARS
  - 4 10-12 YEARS
  - 5 11-12 YEARS
  - 6 6-7 YEARS
  - 7 11-13 YEARS
  - 8 17-21 YEARS

### 5.3 When to seek medical/dental advice

Some patients, when admitted to hospital, will have pre-existing oral health problems, such as tooth decay or gum disease. Other patients will have a healthy mouth when initially admitted but during their hospital stay will develop problems related to their mouth.

It would be unrealistic to expect that hospitalised patients should and could have all their dental problems treated whilst they are in hospital. Any urgent mouth related problems likely to be affecting a patient’s general well-being (refer to mouth care assessment tool) should be addressed as soon as possible. If health professionals are made aware of non-urgent problems, this is a good opportunity for oral health promotion

and patients should be advised/ encouraged to see their dentist or find a dentist for care upon discharge (see section 25).

Some hospitals will have on site maxillofacial/dental departments, or mouth care teams to directly refer to (upon agreement of that team) but some will not. For hospitals where there is no dental department it is important to know whom to contact for dental advice or urgent care when required. If no referral pathway exists for your hospital, this should be looked into and developed as a priority.

The following table is a guide for when medical/dental advice should be sought. In the absence of dental advice/pathway, discuss with the medical team involved in a patient’s overall care.

Urgent – Needs referral ASAP	Non urgent – Advise to see dentist on discharge (and/or register if no regular dentist)
Dental trauma (dental/maxillofacial)	Broken/decayed teeth, not causing pain
Thrush (medical)	Chronic gum disease
Dental abscess, swollen face, severe dental pain (ideally dental/ maxillofacial)	Cosmetic dental treatment
Bleeding from the mouth (dental/maxillofacial)	Appliances that are loose
Painful ulcers or ulcers present for more than two weeks (medical/maxillofacial)	
Severe dry mouth (medical)	
Patients with physical, cognitive or medical disabilities where hospital staff are struggling with oral hygiene (dental or nurses/allied health care professionals with enhanced oral health skills) - consider referral by medical team to local dental hospital/community dental service upon discharge	

### 5.4 References

Department of Health (2010) Essence of Care: Benchmarks for Personal Care.

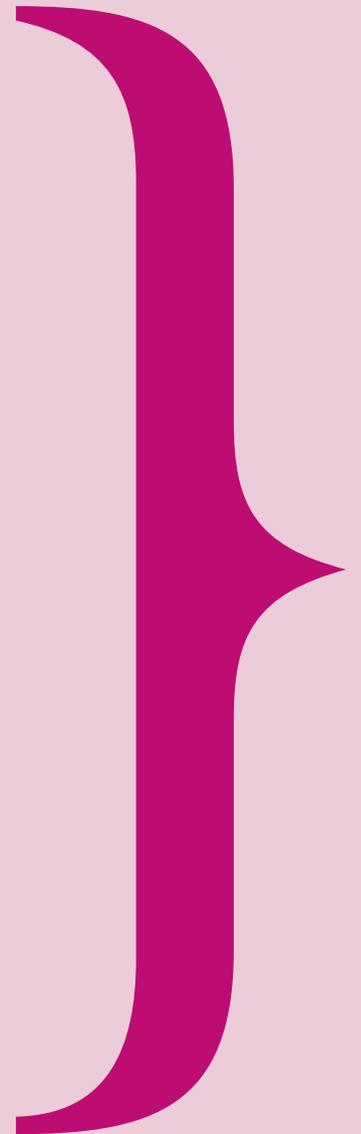
Rao, R.S. and Mathad, S.V. (2009). Natal teeth: Case report and review of literature. Journal of Oral and Maxillofacial Pathology. 13 (1) p 41-46.

# 6

## Diet and oral health

### Key messages

- Sugary drinks should be restricted to mealtimes and only water or plain milk should be drunk in between meals
- Sugar-containing foods and drinks should be avoided at bedtime
- Ideally, sugar should not be added to foods (E.g. cereal)



## 6.1 Effects of sugar on teeth

Diet can have an impact on the risk of dental decay, and as a result it is important that the amount and frequency of sugar consumed throughout the day is restricted. Children who are fed sweet foods and drinks at home may have developed a habit of consuming only those foods and drinks. Whilst in hospital, patients are often given sweets and chocolates by visitors and hospital snack trolleys are laden with juice, sweetened yogurts and biscuits. Patients may not stay very well hydrated and could present with a dry mouth, in these cases patients may crave sweet drinks.

Saliva is our natural defence against decay and helps to neutralise the mouth after we eat food. Patients with 'dry mouth' (xerostomia) are therefore at an increased risk of dental decay. Saliva is produced when we eat to act as a lubricant, making it comfortable to chew, and also to aid digestion. Therefore, it is produced in abundance after eating a meal. For this reason, sugary foods should be consumed straight after a meal as the extra saliva present will help to minimise the 'acid attack' thereby minimising the risk of developing dental decay. Ideally, sugary snacks and drinks should not be consumed between meals.

## 6.2 Safe snacks

Food and drink that can be eaten in between meals, that do not increase the risk of decay include:

- ✓ Plain water (still)
- ✓ Plain milk (unsweetened)
- ✓ Cheese
- ✓ Whole fresh fruit
- ✓ Raw vegetables
- ✓ Breadsticks
- ✓ Nuts

## 6.3 Sugar and medication

Many medicines contain sugar, and it is important that sugar-free alternatives are sought if they are available. This includes suspensions. This is particularly important for those with dry mouths or oral dysphagia. If no sugar-free alternative is available, administering the medicine at mealtimes will help to reduce the risk of dental decay.

It is important to remember that some patients will require highly calorific drinks/supplements to gain weight. These are usually full of sugars to make them palatable, and are provided by the medical practitioner/dietetic team in charge of the patients' care. The consumption of these drinks should not be discouraged. Instead, prevention is of the utmost importance in this patient group, where they should be encouraged to drink water to clear the mouth after the sugary drink, and to consider the use of a fluoride mouthwash.



Hospital snack trolley



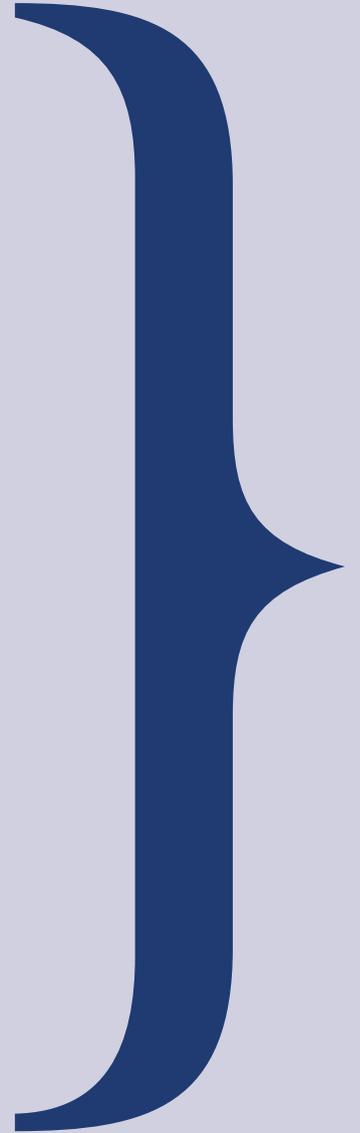
Unhealthy foods and drink

# 7

## Fluoride

### Key messages

- Use a fluoridated toothpaste twice daily
- Children should use a toothpaste containing between 1000 - 1500ppm fluoride depending on decay risk (unless prescribed otherwise by their dentist)
- Make sure to spit out after brushing and to not rinse with mouthwash or water



### 7.1 What is fluoride?

Fluoride is a natural mineral that is found in fruit, vegetables, fish and tea. It is added to toothpaste and has contributed to a significant decline in both the incidence and prevalence of dental decay over the past few decades.



### 7.2 How does fluoride work?

Fluoride strengthens the tooth enamel, making it more resistant to decay. Applied topically, it is in direct contact with the teeth, hence rinsing after brushing your teeth, with water or mouthwash washes away the fluoride present in the toothpaste, reducing its efficiency. You need to simply spit out the excess toothpaste - this will ensure that the fluoride is in contact with the teeth for as long as possible, allowing it to work. For patients with dysphagia/unsafe to swallow, a non-foaming toothpaste can be used.

### 7.3 How much fluoride is enough?

The evidence to support the twice-daily use of fluoridated toothpaste is extensive. The Department of Health Delivering Better Oral Health toolkit (PHE, 2017) recommends that children should use a toothpaste appropriate to their decay risk. Children at high risk are those that have existing decay, or are likely to develop decay due to special needs, dry mouth, wearing appliances, etc.

Concentration of toothpaste is in parts per million (ppm), and can be found on the back of the toothpaste tube. Most over-the-counter toothpastes and those available on the high street contain between 1000-1500ppm fluoride, although there are some that have less than 1000ppm or no fluoride at all. These toothpastes will provide little or no protection against tooth decay. Some children can find tooth brushing difficult due to its strong minty flavour. A milder flavoured 6y+ toothpaste can be used as they often have 1350-1500ppm fluoride.

Alternatively, there are now a range of toothpastes that are not only non-foaming, but also non-flavoured (please refer to product information guide).

A higher concentration of fluoride provides better protection against dental decay. For 8 year olds and upwards with active decay, a daily fluoride mouth rinse (0.05% NaF) can be prescribed to be used at a different time to brushing. Exceptions to this are dysphagia patients, or learning disability patients who may not be able to understand how to rinse, and are at risk of swallowing the mouthwash. Children should regularly attend the dentist for check-ups at least every 6-12 months (or as directed by a dentist), and can receive fluoride varnish application to prevent dental decay.

### 7.4 References

Public Health England (PHE), (2017) Delivering better oral health: an evidence-based toolkit for prevention. Third Edition. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/605266/Delivering\\_better\\_oral\\_health.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/605266/Delivering_better_oral_health.pdf) (Accessed 20th January 2019).

0-2 years	3-6 years	7 years and older
Use a smear of no less than 1000ppm fluoride toothpaste	Use a pea-sized amount of more than 1000ppm fluoride toothpaste	Use a pea-sized amount of 1350-1500ppm toothpaste
High decay risk: Use a smear or pea-sized amount of 1350-1500ppm toothpaste		High decay risk: <ul style="list-style-type: none"> <li>10y+ : 2800ppm fluoride toothpaste prescription</li> <li>16y+ : 2800ppm or 5000ppm fluoride toothpaste prescription</li> </ul>

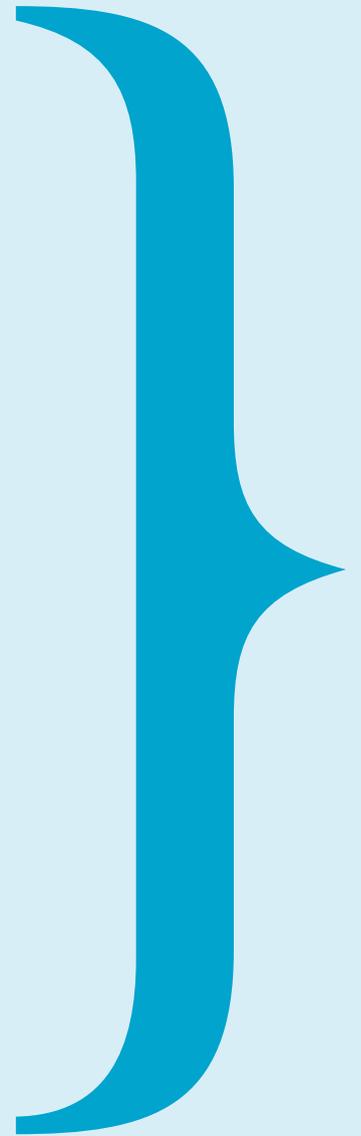
Table showing recommended concentrations of fluoride toothpaste for each age group and high decay risk groups

# 8

## Patients with increased oral health risk factors

### Key messages

- Patients with cognitive disorders may find it difficult to communicate or cooperate with mouth care in hospital
- Physical disabilities can add barriers and make it more difficult to carry out good oral hygiene
- Patients with systemic diseases are more susceptible to oral problems



### 8.1 Why are some patients more at risk from mouth care problems?

Some children will be more at risk of developing problems with their mouths whilst in hospital, including those with:

1. **Cognitive disorder/disabilities** – making it harder to understand the need for mouth care and co-operating with mouth care.
2. **Medical disabilities** – being more susceptible to dry mouth, ulceration, gingival swelling etc.
3. **Physical disabilities** – leading to difficulties in carrying out personal mouth care or mobility problems making it harder to hold a toothbrush, or get to a sink.

### 8.2 Signs of mouth related problems in hospitalised vulnerable patients

Patients with cognitive impairment such as learning disabilities/autism may find it difficult to communicate to parents and carers when they are in pain or have problems with their mouth. Patients who are acutely unwell may lack energy or not be able to speak up when they have oral problems. Hospital staff should be aware of signs that may suggest that the patient has problems with their mouth:

- Change in behaviour or co-operation with mouth care
- Facial swellings
- Reduced intake of food and/or drink, particularly hard foods and cold food/drink
- Frequent pulling/hitting of the face or mouth

- Increased restlessness, moaning or shouting
- Disturbed sleep
- Self-harm
- Aggressive behaviour

All patients that are hospitalised for more than 24 hours should have a mouth care risk assessment as part of their general assessment to exclude oral related problems.

The next sections discuss some groups of patients that are more at risk of being susceptible to oral related problems, or may require more assistance with mouth care.

### 8.3 Learning disabilities and oral health

The oral health of people with moderate to severe learning disabilities has been found to be poorer than that of the general population. People with learning disabilities have been found to have poorer oral hygiene and consistently higher rates of untreated dental decay (Anders and Davies, 2010). They are more likely to have severe gum disease when compared to the general population (Scott, March and Stokes, 1998).

#### 8.3.1 Mouth care for patients with learning disabilities

Children with mild learning disabilities may need a simple reminder to brush their teeth daily. Those with moderate to severe learning disabilities may require more assistance or be fully dependent on another individual for all of their oral care.

Table showing the types of disabilities/conditions that may affect oral care

Cognitive Disorder/Disabilities	Medical Conditions	Physical Disabilities
Learning disabilities	Diabetes	Cerebral palsy
Mental health conditions	Xerostomia	Juvenile Arthritis
Delirium	Oxygen therapy	Muscular degenerative disease
Depression	Chemotherapy	Mobility problems
Autistic spectrum disorders	Head and neck radiotherapy	
	Palliative care	
	Polypharmacy	

## 8.4 Mental health conditions and oral health

Mental health conditions can cause patients to lose motivation for personal hygiene including mouth care. This can cause a rapid development of decay and gum disease and can result in dental infection and pain (Brennan and Strauss, 2014).

It has been found that poor oral health status is significantly associated with depression and a decrease in tooth brushing (Park et al, 2014). In addition to their poor oral hygiene and oral health, Park et al. (2014) found that those with depression are less likely to receive treatment when they experience dental problems. It is important to be aware of children who may be suffering from mental health conditions, and ensure that they are receiving the help and care they need.

### 8.4.1 Mouth care for people with mental health conditions

People with mental health conditions may require motivation from hospital staff to encourage them to look after their mouths. This may include daily reminders, and encouraging patients at different times of the day when they are more receptive.

## 8.5 Intensive care – ventilated patients and oral health

Ventilated patients are at an increased risk of developing ventilator-assisted pneumonia. Studies have shown that oral plaque can harbour respiratory pathogens (Scannapieco, Stewart and Mylotte, 1992) increasing their risk of ventilator-associated pneumonia. Oral hygiene care for such patients reduces this risk (Shi et al, 2013). There is a wealth of knowledge and clear guidelines for hospitals, intensive care wards and nursing staff to ensure that these critical care patients receive the correct mouth care measures to prevent further impact to their health (Tablan et al, 2004; NICE, 2008). Pneumonia carries a risk of mortality of up to 25% (cited in Sjögren et al, 2008) and it is therefore important that oral hygiene care is promoted for all hospitalised patients.

Access to the mouth due to space for cleaning can also be challenging in patients that are intubated. Toothbrushes should have a small head and a long handle. (p.70)

The pressure of endotracheal tubes can lead to the development of traumatic ulceration to the lips. There are many devices such as masks, fasteners and bite blocks on the market that are now used to prevent this.

### 8.5.1 Mouth care for ventilated patients

A Cochrane systematic review has found that oral care for ventilated patients using chlorhexidine mouthwash or gel reduces the risk of ventilator-associated pneumonia by 40% (Shi et al, 2013). A more recent study concluded that the use of chlorhexidine for cardiac surgery patients can prevent the incidence of ventilator-associated pneumonia (VAP) but not for non-cardiac surgery patients (Klompas et al, 2014). Currently individual hospital trusts are reviewing their policies on the use of chlorhexidine.

Taking this evidence into consideration, mouth care for ventilated patients should include:

- Tooth brushing (at least) twice daily ideally with a non-foaming (Sodium Lauryl Sulphate (SLS free)) toothpaste to remove bacterial plaque
- The use of a small-headed toothbrush or a suction toothbrush
- Dry mouth care with 2 hourly application of dry mouth gel to the mouth and lips (if required)
- Minimising traumatic ulceration caused by endotracheal tubes using specifically designed fasteners and bite blocks.

Please note, each hospital trust should have a VAP bundle in place which indicates frequency of oral health care for ventilator assisted patients.

## 8.6 Head and neck cancer treatment and oral health

Head and neck cancer patients present a unique group of patients whose oral care requires particular attention. Such cancers are often treated with radiotherapy directed at the tumour site, sometimes alongside the use of chemotherapy. Both of these treatment modalities greatly impact on the oral health of patients. It is reported that 40% of chemotherapy patients will experience oral mucositis (inflammation of the oral tissues) and many patients rate this as the most distressing aspect of their cancer treatment (UKOMiC, 2012).

# Determining the impact of improving oral hygiene on ventilator-associated pneumonia rate in a Paediatric Intensive Care Unit



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## Aims and objectives

Ventilator-associated pneumonia (VAP) accounts for about 20% of nosocomial infections among patients in Paediatric Intensive Care Units (PICUs), with an associated increased duration of ventilation, increased length of stay, with an increased morbidity and mortality rate. A service improvement initiative was implemented to improve oral hygiene within our unit, and its impact on our VAP rate was determined.



### Objective:

1. Identify criteria to determine the diagnosis of a VAP
2. Review current VAP rate
3. Evaluate impact on VAP rate after oral health training and education programme

## Methodology

A retrospective audit at Royal Manchester Children's Hospital was undertaken to determine a baseline rate for ventilator-associated pneumonia (VAP) incidence. With the introduction of electronic records to the unit, all patients with a length of stay (LOS) greater than 7 days were able to be reviewed to observe the occurrence of any ventilator associated events (VAE). The records of patients who were observed to have had a significant ventilator event were further analysed using the CDC (Centre for Disease Control) 2017 criteria for the diagnosis of VAP.

Sage Q4Care Petite packs were introduced for all patients in PICU who met the criteria, supported by a training and education package for staff and parents.

Post-intervention, data were collected for 6 months to examine the prevalence of VAP and establish if improving compliance with oral care has had an impact on this.

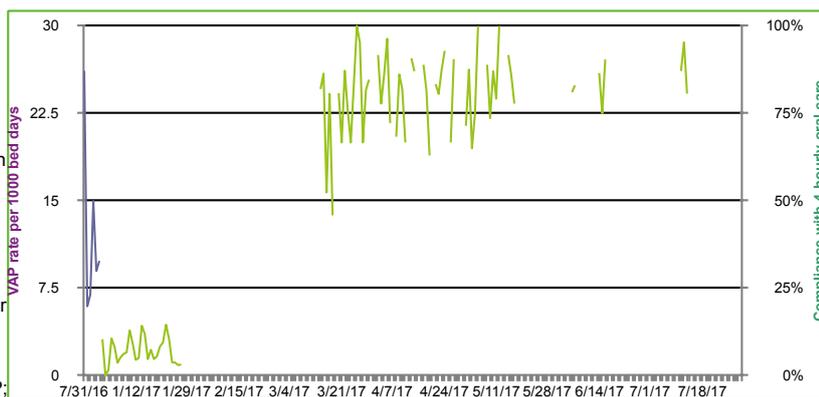
## Results

Prior to intervention, 164 patients had a LOS>7 days, with a total number of ventilator-bed days = 1526, and 22 cases were confirmed as a VAP – a VAP rate of 14.4 per 1000 ventilator-bed days.

Within 8 weeks of introduction of the product, following a training and education package, compliance in oral care increased from 10% to 80%.

Post intervention, 102 patients had a LOS>7day, with a total number of ventilator-bed days=978, and 4 cases were identified as a VAP - a rate of 4.1 per 1000 ventilator-bed days.

The intervention resulted in a statistically significant improvement in the rate of VAP;  $p < 0.05$  (Fisher exact test).



## Conclusions

This initiative has provided evidence that improving oral health has significantly reduced the incidence of VAP in our critical care, for a cohort of patients. This process has now been extended to include all patients admitted who require ventilatory support to calculate the overall VAP rate. A bundle is being developed by the multidisciplinary team to further investigate other risk factors which may have had an effect.

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1. Elward AM. Pediatric ventilator-associated pneumonia. *Pediatr Infect Dis J* 2003;22:445-6.
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### 8.6.1 Mouth care for head and neck cancer patients

Patients who have received radiation to the head and neck are also likely to have a dry mouth due to reduced salivary gland function. Dry mouth care, good oral health and a reduced sugar diet are important for these patients to minimise their risk of decay. Children with mucositis may find that their mouth is too painful to brush their teeth. A soft toothbrush, the use of a non-foaming/non-flavoured toothpaste to clean the teeth and mouth, along with the application of a dry mouth gel may help. See section 17.9 for other ways to help manage the symptoms of mucositis.

## 8.7 Dysphagia and oral health

Dysphagia (difficulty swallowing) has numerous causes. These may include cleft lip or cleft palate, tumours, developmental delay and diseases that affect nerves and muscles. The reduced oral clearance (removing food from the mouth) in such patients negatively impacts their oral health and a study by Poisson et al. (2014) found that dysphagia was related to oral thrush, reduced saliva and the dependency on others for oral care. When cleaning the mouth of a patient at risk of dysphagia, extra care should be taken to reduce the risk of a patient aspirating toothpaste or any debris that may be present in the mouth.

## 8.8 Physical disability and oral health

Physical disability can be caused by a wide variety of diseases and illnesses and may impact on oral health in a number of ways. Physical disability that affects the hands and arms such as muscular dystrophy and cerebral palsy, will inevitably affect an individual's ability to complete oral hygiene tasks (Avcu et al, 2005), which will in turn negatively impact their oral health status. Mobility problems can also mean that patients may have difficulty accessing a sink area, which could prevent them from carrying out tooth brushing.

### 8.8.1 Mouth care for patients with physical disability

The level of assistance for mouth care will vary for patients and tips include:

- Ensuring that patients have access to a bowl and mouth care products (toothbrush etc.)
- Assisting patients who are unable to brush their own teeth or oral appliances (such as braces)
- Consider adaptations to the toothbrush handle (occupational therapists can help with this) or an electric toothbrush, which has a larger handle and is easier to use.

## 8.9 End of life care and oral health

The oral health of end of life and palliative care patients is crucial but is an area that has often been overlooked.

End of life patients are susceptible to a range of problems with their mouths including dysphagia, dry mouth, thick mucous secretions, nutritional and taste problems and mucositis. Poor oral health can have a big impact on the function and quality of life for these patients.

### 8.9.1 Mouth care for end of life patients

Mouth care for palliative care patients should seek to make the patient as comfortable as possible in the least invasive way:

- For patients with dry mouths, a dry mouth gel can be used by applying a small, pea sized amount at a time and massaging into the soft tissues. The mouth can also be hydrated with the use of a soft toothbrush dipped in water (or the patients favourite drink), or with a fine water spray
- Twice daily brushing of teeth and gums using a fluoridated toothpaste and toothbrush. Consider use of a non-flavoured/non-foaming toothpaste if the patient is suffering from a sore mouth
- Prescription of a topical pain relief for example Difflam (benzydamine hydrochloride) spray (into the cheeks and under the tongue) or mouth wash, or Gelclair as directed
- Regular removal of oral/dried secretions with gentle suctioning or a toothbrush/MouthEze cleanser especially before re-application of dry mouth gels.

### 8.10 References

[http://ukomic.co.uk/documents/UK\\_OM\\_Guidelines.pdf](http://ukomic.co.uk/documents/UK_OM_Guidelines.pdf)

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Scannapieco, F.A., Stewart, E.M. and Mylotte, J.M. (1992) Colonisation of dental plaque by respiratory pathogens in medical intensive care patients. *Critical Care Medicine*; 20: 740-745.

Shi, Z., Xie, H., Wang, P., Zhang, Q., Wu, Y., Chen, E., Ng, L., Worthington, H.V., Needleman, I. and Furness, S. (2013) Oral hygiene care for critically ill patients to prevent ventilator-associated pneumonia (Review). *Cochrane Database of Systematic Reviews*; 8: 1-125.

Tablan, O.C., Anderson, L.J., Besser, R., Bridges, C. and Hajjeh, R. (2004) Guidelines for preventing health-care associated pneumonia 2003: recommendations for CDC and the Healthcare Infection Control Practices Advisory Committee. *MMWR Recommendations Report* 53 (RR-3), 1-36.

A member of the Mouth Care Team saw Rosie, a patient who was referred by the cancer care team. She had an extremely dry mouth, cracked lips and was feeling sorry for herself. Rosie was being treated with chemotherapy and radiotherapy. One of her treatment side effects was an absence of saliva, she had dry secretions attached to her palate and her teeth were covered in plaque.

Rosie's mouth care consisted of the use of a pink foam swab and some pink coloured water to moisten the mouth (but this was not being recorded, so it was uncertain how frequently this was being done). No tooth brushing was being carried out as nursing staff had stated they were worried that Rosie would not be able to tolerate this very well.

With Rosie's mum helping to calm Rosie, her mouth was carefully cleared of debris using a MouthEze stick and a small soft headed toothbrush, non-foaming toothpaste was used to gently clean away the plaque on her teeth. Dry mouth gel was massaged on her lips and on her tongue, cheeks and palate with the MouthEze stick. Staff were advised to apply dry mouth gel to her lips and massage intra orally every 2 to 3 hours, and were reminded of the importance of assisting with daily tooth brushing.

A Mouth Care Recording Pack was completed, and nursing staff were reminded to record all mouth care daily. The Mini MCM (2 elephant) Mascot was placed next to Rosie's bed a visual aid to remind staff that assistance was needed with her oral health care.

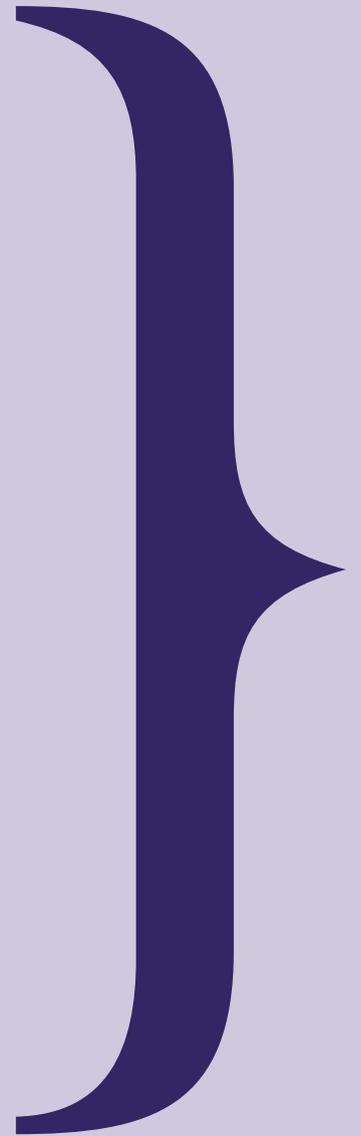
On review, Rosie's mouth was clean and moist, Mouth care was being recorded after it was given, Rosie's Mum was also helping with dry mouth care and mentioned Rosie was comfortable, and very welcoming mouth care when given.

# 9

## Dental decay (caries)

### Key messages

- Dental decay is caused by bacteria present in dental plaque that converts sugar into acid
- Decay can be prevented by removing bacterial plaque twice daily by brushing teeth effectively and reducing sugar consumption
- Toothpaste containing fluoride strengthens teeth against decay



### 9.1 What is dental decay (caries)?

The demineralisation (destruction) of tooth tissue (enamel and dentine) due to acid produced by bacteria.

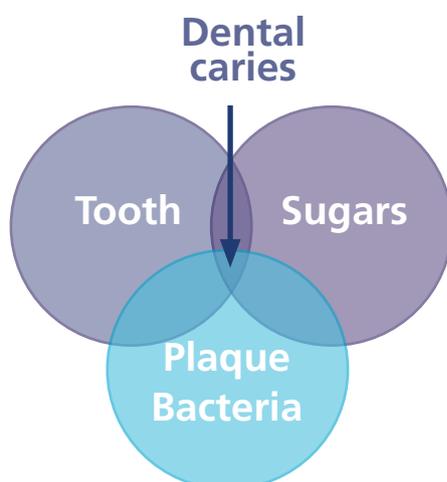
### 9.2 Signs of dental decay

Decay may first appear as a white or brown stain on the tooth and can then develop into 'holes' in the teeth. This may lead to teeth fracturing or breaking down. If left untreated the bacteria can spread into the blood and nerve supply (the pulp) of the tooth and cause an infection. This is painful and it may develop into a dental abscess.



### 9.3 Symptoms of dental decay

Initially, dental decay is symptomless but as the 'hole' gets bigger and spreads deeper into the tooth, symptoms can arise. These include pain and sensitivity, particularly to sweet foods and cold substances.



### 9.4 Causes of dental decay

The mouth contains up to 650 different types of bacteria that form part of a sticky white substance called plaque that adheres to the teeth. When we eat or drink something sugary the bacteria absorbs the sugar and converts it into acid. The acid attacks the teeth and causes demineralisation; this is where the tooth tissue loses minerals and becomes softer.

Each time we eat, the pH in our mouth drops (i.e. it becomes more acidic) and our teeth are at risk of decay. Sugars make the pH drop even further as they are readily metabolised by the bacteria in comparison to other foods and nutrients. It takes approximately 30 minutes for the pH to return to neutral which is achieved by the neutralising effect of our saliva. Below a pH of 5.5, the teeth are susceptible to demineralisation and decay. Therefore, the more frequently sugar is consumed throughout the day, the greater the amount of time spent in the 'danger zone' and the greater the risk of decay.

### 9.5 Prevention of dental decay

Dental decay is preventable through the control of sugar in the diet and good oral hygiene. It is important that a fluoride toothpaste is used as the fluoride helps to prevent, control (promotes remineralisation) and arrest (stop) decay.

Teeth should be brushed twice daily, once last thing at night and at one other time during the day with a small-headed brush. Brushing should take two minutes to complete using a circular motion with the bristles of the brush directed 45° towards the gum line. In young children, brushing should be supervised by an adult (at least until the child is 7 years of age).



## 9.6 Management of dental decay in hospitalised patients

It is not the role of health care professionals (with the exception of dentists and dental therapists) to diagnose dental decay. However, health care professionals may come across patients with broken teeth, teeth with holes, or teeth with dark staining. If the patient has no symptoms or only complains of intermittent mild pain, the patient should be advised to seek dental treatment from their dentist following discharge. If the patient has symptoms affecting their everyday well-being (e.g. constant pain, difficulty eating/drinking, sharp teeth causing ulceration to cheek or tongue, or a swelling next to the tooth), the patient should be referred for dental advice (if a dental department is available in your hospital, and a pathway is set up for this referral), or to the doctor in charge of the patient.

Children can receive dental treatment from their local family dentist, community dental services (CDS) or from hospital paediatric dental (HDS) departments. A referral to CDS/HDS will be needed from the medical team or family dentist to access these services.

**REMEMBER:** You don't have to pay for NHS dental treatment if you are under 18, or under 19 and in full-time education.



# 10

## Periodontal (gum) disease

### Key messages

- Gum disease is an inflammatory disease of the gums and bone that supports teeth
- Good tooth brushing is important to help stop the progression of gum disease
- Gum disease can contribute to cardiovascular disease and diabetic control



## 10.1 Definition of periodontal (gum) disease

Periodontal disease, commonly known as gum disease, is an inflammatory disease of the gums and bone that surround teeth. It is caused by bacteria in dental plaque.

There are two main stages:

### Gingivitis

This is the first stage of gum disease where the gums become inflamed, red and can bleed when brushed. This is common in children. Gingivitis is a reversible condition with good oral hygiene and daily removal of plaque.



Gingivitis (reversible)

### Periodontitis

If longstanding gingivitis is left untreated, it can progress to periodontitis. This is where the bone supporting the teeth is affected, and in some cases, can result in tooth loss.

Periodontitis is irreversible, but progression can be halted with treatment and improved oral hygiene.



Periodontitis (irreversible bone loss of lower front incisor teeth)

## 10.2 Causes of gum disease

The bacteria causes an inflammatory reaction in the gums that initially manifests as red, inflamed gums that bleed when brushed and eventually leads to destruction and loss of the bone that supports the teeth.

## 10.3 Signs of gum disease

Signs of gingivitis include red, inflamed gums, which bleed upon brushing, and halitosis (bad breath).

Signs of periodontitis include wobbly teeth, teeth that look longer as the gums recede, and missing teeth.

## 10.4 Symptoms of gum disease

The gums may or may not be sore and loose teeth may or may not be painful. Gum disease can lead to dental abscesses that can be very painful. There are additional risk factors for gum disease including a weakened immune system, systemic disease (e.g. diabetes), stress, medication, and genetics.

## 10.5 Management of gum disease in hospital

Regular removal of dental plaque with good oral hygiene is important to reverse gingivitis and help stop the progression of periodontitis.

If teeth are very mobile (loose) and there is a risk that they could be aspirated or ingested, or if there are any swellings on the gum, an urgent referral should be made by the hospital team for dental advice.

### Aggressive periodontitis

This type of gum disease can affect children and young people even when plaque control may be good. It has a strong genetic association, and is more common in Afro-Caribbean populations. It may affect just a few teeth or it may affect the entire mouth.

If a child or young person has bone loss around their teeth, it is unlikely to be due solely to dental plaque; in these cases there may be underlying risk factors that need to be addressed. Referral to a paediatric dental specialist should be made by the hospital team if teeth are mobile/loose, and not part of the normal sequence of tooth loss in children.

# 11

## Tooth surface loss

### Key messages

- Tooth surface loss is the wearing away of tooth surface not caused by bacteria
- There are three main types of tooth surface loss
- Tooth surface loss is becoming increasingly more common due to changes in lifestyle



### 11.1 What is tooth surface loss?

Tooth surface loss is the non-carious loss of tooth tissues; that is, it is not caused by bacterial acid, which is the cause of dental decay. There are three main types; erosion, attrition and abrasion. Tooth surface loss is becoming more common with changes in diet, habits and lifestyle.

### 11.2 Signs of tooth surface loss

As teeth wear away they may appear thinner, shinier, or become shorter.

### 11.3 Symptoms of tooth surface loss

The symptoms of tooth surface loss can range from no symptoms, to sensitivity to hot and cold, to extreme pain.

### 11.4 Tooth erosion

Erosion is caused by frequent or prolonged exposure to acid. The acid can be extrinsic (from food and drink) or intrinsic (gastric acid as a result of acid reflux, or frequent vomiting).

### 11.5 Management of tooth erosion in hospitalised patients

Patients should be advised to see their dentist on discharge to monitor the erosion. If the patient has severe pain affecting their everyday wellbeing, they should be referred for dental advice. Avoid giving sugar or sugar free acidic drinks to patients with dry mouths as it can increase the level of acid attack to the teeth. If a patient is suffering from acid reflux or vomits frequently, avoid brushing their teeth until 30 minutes after the episode to allow for neutralisation of the oral cavity. This will prevent further tooth surface loss by brushing away the weaker, exposed enamel.

### 11.6 Tooth abrasion

Abrasion is the wearing away of the tooth surface by a mechanical force; this is most commonly caused by using too much pressure when tooth brushing. It is uncommon in children, and more often seen in older patients, where the

gums have receded (shrunk back) exposing the roots of the teeth. Unlike the crown of the tooth, roots do not have a coating of enamel and the dentine is softer and hence will wear away faster.

### 11.7 Management of tooth abrasion in hospitalised patients

Patients should be advised to see their dentist on discharge to monitor the abrasion. If the patient has severe pain affecting their everyday wellbeing, they should be referred immediately for dental advice.

Mini MCM advises that hospitalised patients should use a small-headed soft toothbrush, and not brush with excessive force.

### 11.8 Tooth attrition

Attrition is the wearing away of a tooth as the result of tooth-to-tooth contact, this is commonly called tooth grinding or bruxism.

The extent of attrition varies from the wearing away of the enamel, exposure of dentine or in extreme cases the teeth are worn away to gum level. Children with learning disabilities and mental health issues are more prone to tooth surface loss. The incidence of clenching and grinding teeth together is higher in people with learning disabilities.

### 11.9 Management of tooth attrition in hospitalised patients

Patients should be advised to see their dentist on discharge to monitor the attrition. If the patient has severe pain affecting their everyday well-being they should be referred for dental advice. However, attrition is generally not painful but if symptoms arise, seek dental advice.

#### A tip - how much force to use when brushing a patient's teeth:

- Write your name with your non-dominant hand
- This is the force you should use when brushing your own teeth or another person's teeth

# 12

## Dry mouth (xerostomia)

### Key messages

- Dry mouth is a common problem in hospitalised patients
- There are many different causes of a dry mouth
- A dry mouth increases the risk of a range of oral problems



## 12.1 What is a dry mouth?

A dry mouth is caused by a lack of saliva in the mouth. Saliva is a clear watery liquid that is produced and released from the salivary glands around the mouth.

## 12.2 What are the functions of saliva?

- Lubrication of the mouth
- To help with swallowing and talking
- To control acidity of saliva as low PH can damage tooth surfaces
- Helps to remove food debris from the mouth
- Saliva contains enzymes and antigens to protect against bad bacteria
- Saliva contains calcium and other minerals which help repair tooth enamel

## 12.3 What are the signs and symptoms of a dry mouth?

A dry mouth ranges in severity, so signs and symptoms will vary.

Signs: frothy or stringy tenacious sticky saliva, absence of saliva, dry, crusted and cracked lips, lips sticking together, tongue sticking to palate, teeth sticking to cheeks, increase in decay, fungal infections and fissuring of the tongue.

Symptoms: sensation of dryness, pain with eating, swallowing or speaking, dry cough and burning sensation.

## 12.4 What are the causes of a dry mouth?

### Dehydration

Conditions that lead to dehydration, such as fever, excessive sweating, vomiting, diarrhoea, blood loss and burns can cause a dry mouth.

### Medication

A dry mouth can be a side effect of over 400 medications. Among the more likely types to cause problems are some of the drugs used to treat depression, nerve pain (neuropathy) and anxiety, as well as some antihistamines, decongestants, muscle relaxants and pain medications.

### Systemic health conditions

Conditions such as diabetes, cystic fibrosis, autoimmune conditions and HIV infection can cause a dry mouth.

### Sjögren's disease

A medical condition that causes dry mouth, dry eyes and sometimes presents a secondary autoimmune disease such as rheumatoid arthritis or lupus.

### Radiotherapy

Radiotherapy to the head and neck can affect the functioning of salivary glands leading to a reduction in saliva production.

### Chemotherapy

Chemotherapy drugs can change the nature of saliva and the amount produced. This may be temporary with normal salivary flow returning after treatment has been completed.

### Mouth breathing

Breathing through the mouth can cause the mouth to dry out, and is common in children with incompetent lips (lips which remain open at rest), and those with nasal congestion.

## 12.5 What is the impact of a dry mouth on hospitalised patients?

A dry mouth in hospitalised patients can have a significant impact on their overall health and quality of life. Patients may complain of a very sore mouth and this may mean that they have difficulty opening their mouths, cleaning their mouths and eating or drinking.

It is important to be aware that patients may not complain of a dry mouth but complain of difficulty chewing and swallowing, or even of thirst. Patients with dry mouths can also suffer from sore throats and are more susceptible to problems such as decay, gum disease, thrush and ulcers. Patients who are nil by mouth or end of life will often have very dry painful mouths.

Dry, cracked lips



## 12.6 Prevention

Depending on the cause, prevention of a dry mouth may not be possible. If medications are the cause, it may be possible to seek medical advice on the potential to swap to a different drug, which may not have this side effect.

## 12.7 Management of a dry mouth for hospitalised patients

- Frequent sips of cold water/sucking on ice chips (need to check with the speech and language therapist team if the patient has swallowing problems)
- Chewing sugar-free chewing gum can help some patients who have functioning salivary glands to secrete saliva
- Water based mouth moisturising gels or sprays can be used as often as required. These can be applied before mouth cleaning and eating so that it is less painful for patients with a severe dry mouth
- Strict control of sugar intake to prevent dental decay. Avoid sucking on sweets. In the long term, these patients may be prescribed high fluoride toothpastes by a dentist

Fissured tongue, often seen in patients with a dry mouth (and in those patients with Down's Syndrome)



## 12.8 Saliva substitutes/moisturising agents

There is a move away from calling products 'saliva substitutes' as it is extremely difficult to produce a substance that replaces saliva. More recently, products tend to be marketed as dry mouth products or mouth moisturising products and include gels, sprays and toothpastes. Not all patients will find them effective. Some gels may contain animal products or ingredients derived from milk or egg and staff need to be aware of this when prescribing and administering these products.

The gels can be applied to all parts of the mouth including the lips, tongue and cheeks and should be slowly massaged into the tissues (as if you were massaging a cream to treat dry skin). Gels can be applied with fingers or a small-headed toothbrush or MouthEze cleanser.



Applying dry mouth gel to MouthEze cleanser

Dry mouth products	Notes on products
Oralieve mouth moisturising gel and toothpaste (Can be given to under 12 if recommended by a medical professional)	Contains traces of whey protein derived from milk
Bioextra gel/spray and toothpaste	Contains traces of products extracted from milk
Biotene products	Formulation changed, new formulation no animal products
Saliva Orthana spray	Contains animal products (porcine mucin)
Glandsodane spray	Acidic so do not use long term in patients with natural teeth
Saliveze oral spray	No animal products

Drugs that can cause a dry mouth (this list is not exhaustive)

### **Analgesic**

Morphine

### **Anti-anxiety**

Doxepin

Hydroxyzine

### **Antidepressant / Anxiolytic**

Amitriptyline

Citalopram

Clomipramine

Doxepin

Fluvoxamine

Fluoxetine

Imipramine

Mirtazapine

Nortriptyline

Paroxetine

Sertraline

Trazodone

Trimipramine

Venlafaxine

### **Antidiarrheal**

Co-phenotrope

Loperamide

### **Antiemetics**

Cyclizine

Prochlorperazine

Hyoscine

### **Antiepileptics**

Carbamazepine

Gabapentin

Lamotrigine

### **Antihistamine**

Cetirizine

Chlorphenamine

Clemastine

Cyproheptadine

Diphenhydramine

Hydroxyzine

Loratadine

Promethazine

Triprolidine with pseudoephedrine

### **Antipsychotic**

Chlorpromazine

Clozapine

Fluphenazine

Haloperidol

Lithium

Olanzapine

Perphenazine

Pimozide

Prochlorperazine

Trifluoperazine

### **Antispasmodic**

Flavoxate

Hyoscine

Oxybutynin

Propantheline

Tolterodine

### **Bronchodilator**

Ipratropium

Ipratropium/Salbutamol

### **Cardiovascular**

Amlodipine

Atenolol

Captopril

Carvedilol

Doxazosin

Enalapril

Fosinopril

Lisinopril

Methyldopa

Metoprolol

Moexipril

Nadolol

Perindopril

Prazosin

Quinapril

Ramipril

Terazosin

Trandolapril

### **Decongestant**

Pseudoephedrine

### **Diuretic**

Amiloride

Indapamide

Triamterene

### **Hypnotic/Sedative**

Temazepam

### **Muscle Relaxant**

Baclofen

### **Proton Pump Inhibitor**

Omeprazole

Lansoprazole

### **Smoking Control**

Bupropion

# 13

## Oral thrush (candida/ fungal infection)

### Key messages

- Thrush is a common fungal infection in hospitalised patients
- Causes include a dry mouth, certain medication and a compromised immune system
- Treatment includes antifungal medication and meticulous oral hygiene



### 13.1 What is oral thrush?

Oral thrush is a fungal infection in the mouth caused by the fungus candida and it occurs commonly in people who are:

- **Immunosuppressed**
- **Have a dry mouth**
- **Taking antibiotics and/or steroids**
- **Not cleaning removable appliances (e.g. orthodontic appliances or dentures) effectively**

### 13.2 Causes of oral thrush

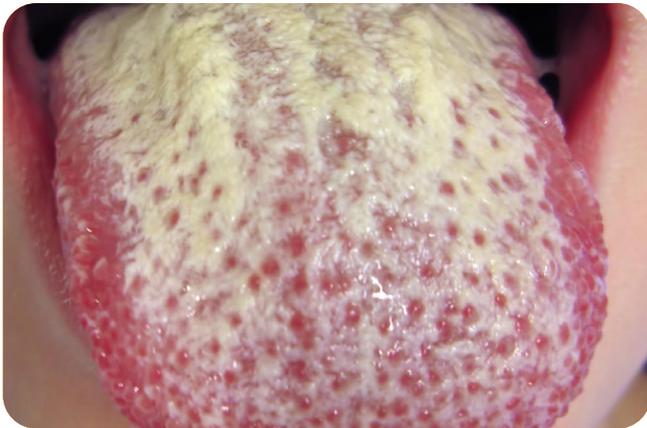
The mouth provides an ideal place for fungal infections to spread, as it is moist and warm. Candida can be present in a healthy mouth and is kept in check by the body's immune system. However, this balance can be disrupted, meaning that the candida can thrive and set up an infection.

### 13.3 Signs of oral thrush

Oral thrush appears most commonly as creamy white or sometimes red patches on the palate, top of the tongue or any areas in the mouth. The white patches can be rubbed off (e.g. when eating or cleaning teeth) and can leave a painful raw area that may bleed. Thrush can develop quickly under removable appliances (such as removable orthodontic appliances and dentures) if they are not removed every night.

### 13.4 Symptoms of oral thrush

Oral thrush can have no symptoms at all or cause soreness and difficulty with eating and swallowing.



Oral thrush



### 13.5 Management of oral thrush in hospitalised patients

- Keep the mouth as clean as possible; use a small-headed toothbrush to clean teeth, gums and tongue at least twice a day.
- Treat a dry mouth, ensure patient is adequately hydrated and use mouth moisturising products regularly.
- Refer for advice from a medical team who can diagnose thrush and prescribe an antifungal medication. Any underlying causes should also be identified and treated, if possible.
- Advise the patient to leave removable appliances out of their mouth at night. The mouth will still need to be cleaned as above.
- If the patient is wearing orthodontic appliances that need to be worn at night, it is important to make sure the mouth and the appliance is being cleaned carefully every morning and night by the patient, as directed by their dentist.
- Appliances should be cleaned thoroughly with a small toothbrush/denture brush to remove debris and plaque.
- If the thrush is thought to be associated with the use of a corticosteroid inhaler the patient should be encouraged to rinse their mouth with water after use.



How to clean a removable appliance (do not use toothpaste)

### Oral thrush under orthodontic appliances or dentures

These plastic removable appliances are porous and have very small holes in them, which can harbour fungal species. It is therefore important that they are removed at night (if possible) and are kept clean.

The key to keeping these appliances clean is removing them regularly and brushing away food debris and plaque deposits. Some patients may wish to use a commercial denture cleaner (these often come in the form of effervescent tablets) and instructions should be followed.

Dentures and other appliances should be placed in a named/labelled appliance pot with water when not in the mouth, to avoid losing them.

### 13.6 Antifungal medication

There are a number of different antifungal medications that can be used to treat oral thrush and which one to use will usually depend on where the fungal infection is in the mouth, and how severe the infection is.

- Nystatin - prescribed as a rinse, should be held in the mouth four times daily (after meals) for as long as possible for topical effect and then swallowed.
- Miconazole - prescribed as a gel and applied to the affected area four times daily (after meals) and can be swallowed. It can also be applied to the appliance surface in contact with the palate and placed in the mouth. It should be sugar-free to help minimise the risk of decay.
- Fluconazole - systemic treatment and prescribed as a tablet. This is generally prescribed when patients have a fungal infection in more than one site.
- Chlorhexidine (0.2%) - cleanse and soak appliance in mouthwash for 15 minutes twice a day (British National Formulary).

### 13.7 References

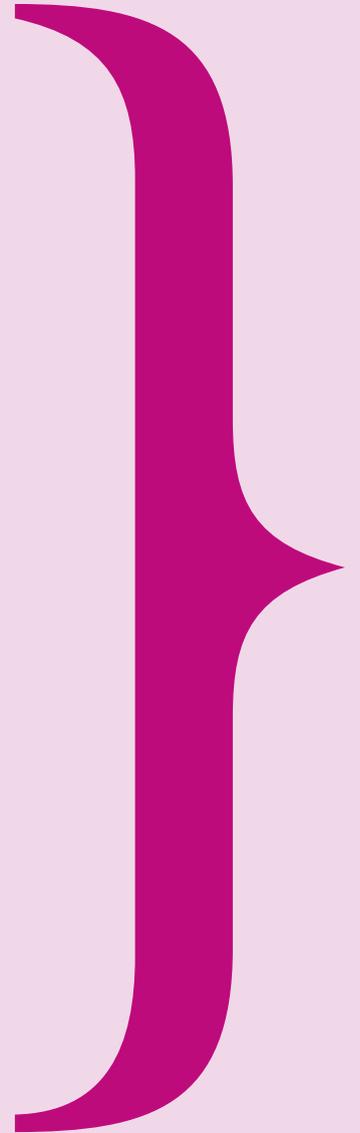
Joint Formulary Committee. British National Formulary (online) London: BMJ Group and Pharmaceutical Press [www.medicinescomplete.com](http://www.medicinescomplete.com) [Accessed on 5/1/16].

# 14

## Angular cheilitis

### Key messages

- Angular cheilitis occurs when the corners of the mouth become inflamed, cracked, crusty and split
- Bacterial and fungal secondary infection is common
- Treatment involves clearing the infection and protecting the area with a mouth moisturising gel/lip balm/emollient cream



### 14.1 What is angular cheilitis?

Angular cheilitis is a condition where one or both corners of the mouth become red, inflamed, crusted and cracked.

### 14.2 Causes of angular cheilitis

Angular cheilitis is more common in patients who drool, have chronic bowel problems or a deficiency of their iron or vitamin B levels. The corners of their lips can become infected by candida, or by bacteria, often *Staphylococcus aureus*. Patients who are immunocompromised, and patients with diabetes are also at increased risk.

### 14.3 Signs of angular cheilitis

Signs include redness, swelling, crusting and cracking at the corners of the mouth. The corners of the mouth tend to be persistently wet.

### 14.4 Symptoms of angular cheilitis

Some patients may not have symptoms but for the majority it can be extremely painful.

### 14.5 Management of angular cheilitis in hospitalised patients

The treatment of angular cheilitis depends on the cause. For symptomatic relief, keep the inflamed area lubricated with a mouth moisturising gel/lip balm/emollient cream. The majority of cases of angular cheilitis have an infectious origin, and should be treated as such. Patients may be prescribed fusidic acid and 1% hydrocortisone cream (to counter inflammation), which works effectively for bacterial infection, and can be applied to the corners of the mouth.

For fungal infections, an antifungal topical treatment such as miconazole gel or nystatin can be applied to the affected area. Patients using inhaled steroids should rinse with water after use to minimise the amount of residual steroid left in the mouth, and reduce the chance of infection.



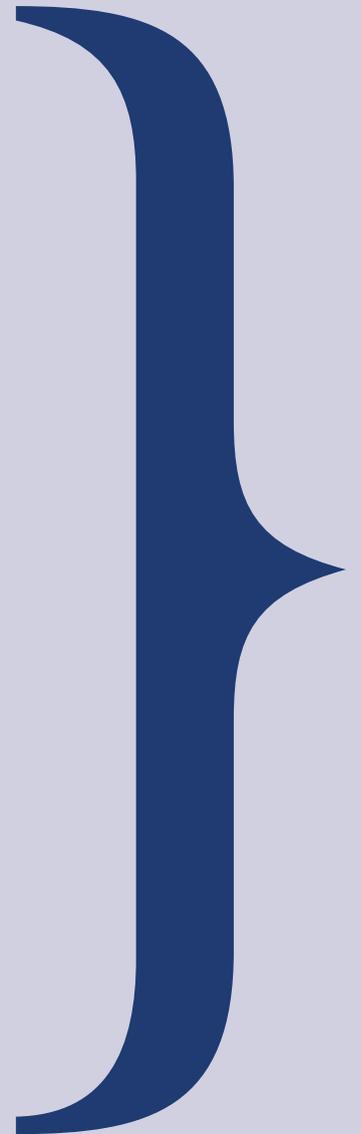
Angular cheilitis

# 15

## Mouth ulcers

### **Key messages**

- There are many causes of mouth ulcers
- Treatment involves alleviating symptoms and treating the cause, if possible
- Ulcers that are present for two weeks or more need to be referred for medical advice



### 15.1 What is a mouth ulcer?

Mouth ulcers are 'sores' in the mouth. There are many causes of mouth ulcers. Ulcers are normally self-limiting and resolve by themselves within a week or two.



### 15.2 Causes of mouth ulcers

- **Infection** – bacterial or viral e.g. the herpes virus can cause a condition called primary herpetic gingivostomatitis in young children, which looks like many painful ulcers affecting the whole mouth.
- **Trauma** – a lost filling, broken tooth or sharp edge on an orthodontic appliance can cause persistent rubbing to the tongue or cheek leading to ulceration. Biting the cheek, tongue or lip can also cause ulceration.
- **Aphthous ulcers** – common recurrent ulcers.
- **Chronic conditions** – e.g. anaemia, Crohn's disease
- **Medications**
- **Cancer of the mouth**
- **Unknown**



### 15.3 Signs of a mouth ulcer

Mouth ulcers are white or cream in colour and round or oval in shape, with red inflammation (a halo) around them. They are most common on the cheeks and lips. There may be one ulcer, or several all at once. Depending on the cause they can range in size from a few millimetres to centimetres.

### Symptoms of a mouth ulcer

Ulcers are generally very sore and painful. Ulcers that are not painful and non-healing (lasting more than two weeks) should be referred for further investigation by the medical team to a maxillofacial/oral medicine specialist.



Primary herpetic gingivostomatitis

## 15.4 Management of mouth ulcers in hospital

- For traumatic ulcers if possible remove the cause, for example seeing if a dentist can smooth a sharp tooth or filling. If there is no dental department, advise the patient to see their dentist upon discharge. If a patient has a fixed orthodontic appliance that is causing trauma, consider the use of orthodontic wax over the offending area.
- Maintain adequate hydration and nutrition for the patient.
- Try and brush twice a day to keep the mouth clean to prevent infection of the ulcers.
- Symptomatic treatment: mouth washes including saline rinses, 0.15 % Benzylamine hydrochloride (Difflam), or alcohol free 0.2% chlorhexidine gluconate (see section 20.11).
- Any patient with an ulcer present for more than two weeks should be referred to the attention of the medical team. These patients may need to be referred for specialist advice from the maxillofacial team.

## Topical analgesics/anti-inflammatory agents

- Topical analgesic pastes [e.g., 20% benzocaine] (to reduce ulcer pain): apply as needed.
- Benzylamine hydrochloride mouthrinse [e.g. Tantum®] (to reduce ulcer pain): apply up to 4 times/day for 2 weeks or until ulcers heal.
- 5% Lidocaine gel/viscous xylocaine (to reduce ulcer pain): rinse and spit as needed.
- Protective bioadhesives [e.g. Orabase®] (to reduce ulcer pain): apply as needed.

## Antimicrobials

- 0.12% Chlorhexidine mouthrinse (to reduce ulcer pain and duration of lesions): rinse 2 times daily, for 2 weeks or until ulcers heal.

## Topical corticosteroid agents

- 0.1% Triamcinolone [e.g. Kenalog in Orabase®, Oracort®] (to reduce pain and inflammation): apply 3-4 times daily for 5 days.



Traumatic mouth ulcer



Traumatic mouth ulcer



Jack, a 14-year-old boy who was non-verbal, with cerebral palsy and epilepsy was admitted to hospital after trauma to his head during a seizure. On his third day of admission, he began to refuse food. A doctor looked in his mouth and noticed a denture was present replacing a front tooth (that had previously been lost due to trauma during a seizure). This had not been noted upon admission therefore, it had not been taken out during his hospital stay at all. When the denture was removed, a large traumatic ulcer was found in his cheek where the denture had broken during his latest seizure, and a metal wire was traumatising the soft tissues. The denture was left out of the mouth to allow the ulcer to heal. 0.15% Benzydamine Hydrochloride spray (Difflam) was applied to the cheek, whereby food intake was immediately resumed. Upon review by ward staff three days later, the ulcer had healed.

Jack's recovery was improved by removing the denture and the cause of the trauma. As he was in less discomfort he could eat again. The family were advised to attend the dentist upon discharge to address the broken appliance.



# 16

## Excessive drooling

### Key messages

- Excessive drooling is most commonly a result of problems with swallowing or posture, but can be a symptom of a medical condition
- It is important to keep the face moisturised to prevent inflammation of the skin
- Rarely medication will be needed to reduce saliva secretions



### 16.1 Why do some patients drool?

It is often assumed that drooling is a result of excessive saliva production. However this is very rare. The main cause of drooling is when a person has problems with posture and muscle control, or a nasal obstruction which results in saliva not being swallowed and drooling from the mouth. Excessive drooling can also be a symptom of a medical condition, developmental delay, or a result of taking certain medications. Anything that leads to excessive saliva production, difficulty swallowing, or problems with muscle control may lead to drooling. Examples of medical conditions that cause excessive drooling include neurodegenerative disorders, Down's Syndrome and cerebral palsy.

### 16.2 Signs of drooling

Patients will often have saliva dribbling from the side of their mouths and have wet bedclothes and bed sheets.



Excessive drooling

### 16.3 Symptoms of drooling

The corners of the mouth, face, neck and chest may become very sore as a result of the continuous wetness and inflammation.

### 16.4 Management of drooling in hospitalised patients

Depending on the severity, drooling may result in persistent wetness of the face. The corners of the mouth are particularly susceptible and may lead to angular cheilitis (see section 14). It is important that the area around the mouth is kept as dry as possible with frequent application of moisturising creams to the face, and mouth moisturising gels to the lips.

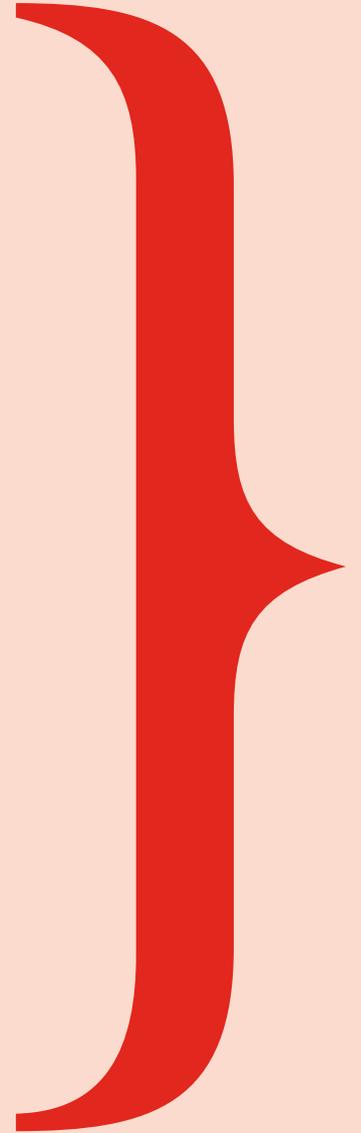
Depending on the cause of the drooling some patients may be referred to the speech and language team for swallowing exercises. Patients may be prescribed anti-muscarinic medication by their doctors, which help dry up salivary secretions. In some hospitals, the use of botulinum toxin (Botox) is considered as a means to reduce excessive drooling in patients with associated medical conditions.

# 17

## Oral cancer

### Key messages

- It is important to identify the signs and symptoms of oral cancer
- Patients with suspicious signs and symptoms should be referred for specialist advice
- There are many painful oral side effects of chemotherapy and head and neck radiotherapy. Regular mouth care is very important



### 17.1 What is oral cancer?

There are many different types of cancer in the mouth involving the lips, cheek, tongue, palate, salivary glands, larynx and pharynx.

In children and young people, risk factors for oral cancer to consider include poor diet, genetic factors, chronic irritation, immunosuppression, and infection with the Human Papilloma virus (HPV) or the Human Immunodeficiency Virus (HIV), as well as alcohol and tobacco use.

Fortunately, oral cancer is rare in children. However there may be oral signs of other cancers e.g. swollen gums in leukaemia, and there may be metastases (spread) of other cancers to the mouth and jaws.

Certain conditions can increase a child's risk of developing some types of cancers. For example, children with Down's syndrome are 10 to 20 times more likely to get leukaemia than other children. Leukaemia is still very rare, even in children with Down's syndrome.

### 17.2 What are the signs and symptoms of oral cancer?

The following list is not exhaustive but some more common signs and symptoms include:

- A non-healing ulcer that is present in the mouth for more than two weeks
- A white or red patch on the tongue, palate or on the mouth lining
- Swellings in the mouth (soft tissues/bony) with no obvious cause
- Unexplained changes in speech and swallowing

### 17.3 Management of suspected oral cancer in hospital

If there are unexplained signs or symptoms in the mouth, the patient should be referred to a specialist (maxillofacial team) for further investigation.

### 17.4 Treatment of hospitalised patients undergoing cancer treatment

Both chemotherapy and radiation to the head and neck can affect the mouth, and often make it too painful to provide oral hygiene. Good oral hygiene is very important to help prevent fungal and bacterial infection which may thrive in a patient with a compromised immune system. The following advice may be helpful for a painful mouth:

- Use a soft, small headed toothbrush to clean the mouth (at least) twice daily
- Mild flavoured or non-flavoured toothpaste may be more readily accepted, alongside a non-foaming toothpaste
- A saline/fluoride mouthwash after every meal will help to clear the mouth of food debris
- A doctor or dentist may prescribe an alcohol-free chlorhexidine mouthwash or Benzylamine Hydrochloride (Difflam) mouthwash or gel for pain relief
- A dentist might advise and prescribe a high fluoride toothpaste or mouthwash as teeth can be at greater risk from decay due to the lack of saliva

### 17.5 Mucositis

Mucositis is an extremely painful side effect of chemotherapy and head and neck radiotherapy. Its management involves treatment to alleviate symptoms, and excellent oral hygiene is important to prevent secondary infection.

### 17.6 What is mucositis?

Oral mucositis is inflammation and ulceration of the lining of the mouth. It is a common side effect of cancer treatment with chemotherapy or head and neck radiotherapy. It can lead to problems swallowing, maintaining good oral hygiene, and affect nutrition.

It is very important for patients to maintain good oral hygiene to reduce the risks of secondary infection (bacterial or fungal) of the lesions in the mouth.

### 17.7 Signs of mucositis

The mouth may appear shiny, red and inflamed with ulcers, and may also bleed.

### 17.8 Symptoms of mucositis

Mucositis is very painful and may affect swallowing and speaking leading to dehydration and nutritional problems. Saliva may become thick and sticky.

### 17.9 Management of mucositis in hospitalised patients

Mucositis is a debilitating condition that can result in a patient being unable to eat or drink. Treatment involves minimising the symptoms and can include:

- Systemic analgesia
- Cleaning the mouth after eating using a soft toothbrush
- Using an SLS-free toothpaste with a mild (or no) flavour to minimise irritation
- Holding and swirling ice chips in the mouth (except in patients with swallowing difficulties)
- A diet of soft, bland, warm food
- Benzylamine Hydrochloride 0.15% 15 ml, 2-3 hourly for up to 7 days (mouth wash or spray)
- Alcohol free Chlorhexidine (0.2%) mouth rinse may or may not be tolerated by patients
- Moisturising the mouth regularly by massaging in a dry mouth moisturising gel.

Gelclair is a barrier mouth gel that some patients find very effective. It forms a protective film by coating the oral mucosa. Using Gelclair an hour before mealtimes can help with making eating more comfortable.

Episil (prescription only) is an oral barrier liquid that forms an adhesive film, alleviating symptoms and can be used before meals. There are other preparations available.

Visit [www.ukomic.co.uk](http://www.ukomic.co.uk), an excellent website with further information on mucositis.

# 18

## Management of paediatric patients

### Key messages

- It is important to create a positive dental attitude to encourage ongoing dental prevention and improved oral health
- We should aim for all children to have a dental check by the age of one
- Various behaviour management techniques can be used to help engage children and develop a positive dental attitude
- Dental anxiety is common, and linked to poor experiences with medical treatment
- It is essential to be aware of the safeguarding policies and procedures in your organisation
- The team should be aware about how to provide first aid for an avulsed tooth

## 18.1 Behaviour management

The aim of behaviour management in children is to encourage a positive attitude toward dental care to improve patients' oral health in the future. There are multiple behaviour management techniques that can be used and these should be tailored to each individual child.

### 18.1.1 Children's behaviour

Children's behaviour can be categorised into three main groups (Wright 1975):

1. Co-operative
2. Potentially co-operative
3. Lacking co-operative ability

Children who lack co-operation include children who are very young (<2 years) and children with specific disabilities.

It is important to be aware of the categories into which a child fits, as this can influence the degree to which children will co-operate with dentists and the wider team.

### 18.1.2 Behaviour management

There are multiple non-pharmacological behaviour management techniques that are often used in combination to help manage children. Firstly, it is important to ensure good communication with the patient and parents/carers. Communicate with the patient using language that is age appropriate, along with use of non-verbal communication.

## 18.2 Communication

As healthcare professionals, it is essential for us to have good communication skills to develop positive relationships and experiences for our patients. Positive experiences with the healthcare team can have an important impact on a child's future and their outlook towards the healthcare profession. Poor relationships with the dental team can influence dental anxiety (Arnup et al 2003). It is therefore important to foster positive experiences for children as well as parents or carers.

## 18.3 Dental anxiety

Dental anxiety is very common and is a reaction to an unknown environment and a fear of danger. It is common in children who have had no previous dental experience. Difficulties in the management of children is linked to maternal anxiety (Bailey et al 1971, Wright 1973, Johnson et al 1969). This is particularly important for children less than four years of age (Wright et al 1971).

Children who are aware of their dental problems are more likely to experience dental anxiety at their first dental appointment (Wright et al 1971). Factors influencing dental anxiety are discussed below.

### 18.3.1 Medical history

Negative experiences with medical treatment may make children more anxious about having dental treatment (Wright et al 1971). It is therefore important to ask children, parents and carers about previous treatments within healthcare, as this may give an indication about their future co-operation.

### 18.3.2 Dental history

Children may develop and sustain fear from previous dental visits. This can lead to poor behaviour at subsequent dental visits. There is a link between poor co-operation and a history of toothache and poor oral health status (Colares et al 2002, Ramos et al 2006).

We would advise asking patients, parents/carers about previous dental experience (including previous treatments, pain and contact with the dentist) as this may reveal possible or confirmed dental anxiety.

### 18.3.3 Social history

Currently there is no conclusive evidence about the link between socio-economic status and dental behaviour or anxiety (Folayan et al 2003). Despite this, it is important to bear in mind the patient's family and social history as troubled family situations may be linked to dental behaviour management problems. (Gustaffson et al 2006)

## 18.4 Recommendations

It is important to be aware that dental anxiety is common and may affect a child's ability to accept an oral examination.

All children should have seen a dentist by the age of one. Parents and carers should be encouraged to take their children to the dentist at least twice yearly for dental check-ups.

If you are aware of any patients who have never seen a dentist, please refer to chapters 24 and 25 to provide parents/carers with information on how to access dental care.

## 18.5 Safeguarding children

It is a requirement that your place of work has safeguarding policies and procedures to ensure that all children have equal protection from harm.

If you have concerns about the well-being of a child you are looking after, we would advise you to refer to your local safeguarding policy and contact your safeguarding lead.

Dental neglect is defined by the British Society of Paediatric Dentistry (BSPD) as "The persistent failure to meet a child's basic oral health needs, likely to result in the serious impairment of a child's oral or general health or development". The term applies in cases where there is failure to respond to a known significant dental problem (Child protection and the dental team Committee of Postgraduate Dental Deans and Directors, 2006).

When dental neglect is seen in combination with other signs of neglect or abuse, it is your duty to raise concerns by following your local safeguarding policies/procedures.

## 18.6 Dental trauma

Dental trauma can occur at any time and could occur in hospital as a result of accidental trips or falls.

It is therefore important for members of staff to be aware of how to manage dental trauma. Staff should have the ability to manage a dental emergency - an avulsed (knocked out) tooth.

If a patient trips or falls it is important to carry out a medical followed by dental assessment. If you suspect there has been a dental injury contact a dentist as soon as possible.

### 18.6.1 Managing an avulsed tooth

An avulsed (knocked out) tooth is a dental emergency.

By providing the patient with emergency treatment you can improve the chances of the patient keeping the tooth in the long term.

**Firstly it is important to state that a baby (milk) tooth should never be replanted.**

In the event that an adult tooth is knocked out, follow these steps (Dental Trauma UK advice sheet).

1. Keep calm
2. Find the tooth and pick it up by the crown
3. Clean the mouth by rinsing with water
4. Hold the tooth by the crown only
5. If the tooth is visibly dirty get the person to lick it clean or pour water over it. DO NOT scrub the tooth.
6. Gently place the tooth back into position
7. Get the patient to bite down on a handkerchief or tissue
8. Ensure the patient sees a dentist immediately.

### 18.7 References:

Wright GZ (1975) Behaviour management in dentistry for children W.B. Saunders Company.

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Colares V, Richman L. Factors associated with uncooperative behaviour by Brazilian preschool children in the dental office. *J Dent Child* 2002; 69; 87-91.

12. Ramos-Jorge ML, Marques LS, Pavia SM, Serra-Negra JM, Pordeus IA. Predictive factors for child behaviour in the dental environment. *Eur Arch Paediatr Dent* 2006; 7: 253-257.

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Arrrup K, Broberg AG, Berggren U, Bodin L. Treatment outcome of unco-operative child dental patients: an exploratory study. *Int J Paediatr Dent*. 2003; 13: 304-319.

<https://www.dentaltrauma.co.uk/Public.aspx>

## Save your tooth

Most of your permanent teeth may be saved if you know what to do after a blow to the mouth

1 Find the piece of the tooth

2 The piece can be glued on

3 For this to be possible, seek attention immediately from a dentist

4 FOLLOW ONE OF THESE ALTERNATIVES

a Put the tooth back in its place

b Place the tooth in a cup of milk or saline

c When milk is not available, place the tooth in the mouth between the cheeks and gums

5 Seek immediately specialized dental treatment, within a two hour time period

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# 19

## Management of paediatric patients with additional needs

### Key messages

- Mouth care should be carried out for patients with additional needs
- Good oral health care can reduce the risk of ventilator-associated pneumonia
- Neonates require regular mouth care with colostrum or sterile water
- Patients who are not orally fed have poor oral clearance, and may have increased accumulation of plaque and calculus

This section provides information on the management of the following paediatric patients:

1. Patients who are ventilated or intubated
2. Patients who are neonates
3. Patients who are not orally fed

Some paediatric patients may have additional needs which require further support as they have increased oral health risk factors (see section 8).

### 19.1 Oral health care of ventilated or intubated patients

Critically ill patients who are on ventilators, or who are intubated require oral health care to be carried out for them. There is a risk of developing ventilator-associated pneumonia (VAP) and good oral health care with chlorhexidine mouthwash or gel can help reduce this risk. [1]

Recommended good practice by the Department of Health to reduce ventilation-associated pneumonia [2] involves:

#### 1. Elevation of the head of the bed

The head of the bed is elevated to 30-45° (unless contraindicated).

#### 2. Sedation level assessment

Unless the patient is awake and comfortable, sedation is reduced/held for assessment at least daily (unless contraindicated).

#### 3. Oral hygiene

The mouth is cleaned with chlorhexidine gluconate ( $\geq$ 1-2% gel or liquid) 6 hourly (as chlorhexidine can be inactivated by toothpaste, a gap of at least 2 hours should be left between its application and tooth brushing).

Teeth are brushed 12 hourly with standard toothpaste (NB can use a non-foaming/non-flavoured fluoride toothpaste).

#### 4. Subglottic aspiration

A tracheal tube (endotracheal or tracheostomy) which has a subglottic secretion drainage port is used if the patient is expected to be intubated for >72 hrs.

Secretions are aspirated via the subglottic secretion port 1-2 hourly.

### 5. Tracheal tube cuff pressure

Cuff pressure is measured 4 hourly, maintained between 20-30cm H<sub>2</sub>O (or 2cm H<sub>2</sub>O above peak inspiratory pressure) and recorded on the ICU chart.

### 6. Stress ulcer prophylaxis

Stress ulcer prophylaxis is prescribed only to high-risk patients in accordance to locally developed guidelines.

Prophylaxis should be reviewed daily.

### 19.2 Oral health care of neonatal patients

Oral health care in hospitalised neonatal patients who may not be receiving regular oral feeds is important to keep the lips and oral mucosa clean, moist and free from infection. It also provides a positive oral experience and helps with early development of taste and smell.

Mouth care should be provided regularly (every 6-8 hours) depending on the individual needs of the patient. A cotton bud can be used with colostrum or sterile water and rolled along the lips, and on the tongue and gums if the mouth is big enough.

Colostrum can be absorbed through the mucosa and has many health benefits for the baby's development including maternal antibodies and anti-inflammatory factors. [4]

### 19.3 Patients who are not orally fed

Patients who are not orally fed have poor oral clearance and may have increased accumulation of plaque and calculus. Even though the patient may not be at risk of developing dental decay, gum health must be maintained. Accumulation of plaque, calculus and halitosis (bad breath) can be prevented by good mouth care and tooth brushing.

Patients may develop sensory defensiveness towards mouth care which can be prevented by regular mouth care with a soft toothbrush and mild or unflavoured/non-foaming toothpaste.

Those who are nil by mouth also frequently suffer from dry mouth (see section 12).

## 19.4 References:

[1] Hua F, Xie H, Worthington HV, Furness S, Zhang Q, Li C. Oral hygiene care for critically ill patients to prevent ventilator-associated pneumonia. Cochrane.

Database of Systematic Reviews 2016, Issue 10. Art. No.: CD008367. DOI: 10.1002/14651858.CD008367.pub3

[2] Department of Health. High Impact Intervention No.5: Care bundle to reduce ventilation-associated pneumonia. 2011.

Available from: <http://hcai.dh.gov.uk/whatdoido/high-impact-interventions/>

[3] British Society for Disability and Oral Health. Guidelines for development of local standards of oral care for dependent, dysphagic, critically or terminally ill patients. 2000.

Available from: <https://bsdh.org/index.php/bsdh-guidelines>

[4] The Northern Neonatal Network. Guideline for Mouth care for Preterm and Sick Infants. 2017.

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# 20

## Having the 'right tools' for mouth care

### Key messages

- Patients must be able to access the appropriate tools for effective mouth care
- A manual toothbrush with a small head and soft bristles is recommended for dependent hospitalised patients
- Dry mouth products can help with the common symptoms of dry mouth



### Recommended mouth care products on the wards for all care staff:

- Pen torch (for nursing staff)
- Small-headed toothbrush
- Sodium Lauryl Sulphate (SLS) free toothpaste- non-foaming (option of non-flavoured toothpaste)
- Dry mouth moisturising gels
- MouthEze cleanser

One of the barriers that prevents hospitalised patients from receiving good effective mouth care is a lack of 'tools', or unsuitable products. For example - a soft bristled small-headed toothbrush being more appropriate than a large-headed, hard bristled toothbrush for a patient with a sore mouth and limited mouth opening.

The following section describes recommendations for mouth care products based on experiences of the Mini Mouth Care Matters team. The team have found for consistency and compliance it is better to limit the number of products, but make sure the products available are most appropriate for hospitalised patients.

We recommend that where possible, the child's parents should be encouraged to bring in their own mouth care products into hospital, or ask a carer to do this for them.

## 20.1 Pen torches

### Rationale

It is essential to be able to see clearly into a patient's mouth. Without a light source, it is impossible to fully assess the mouth, and many conditions (especially towards the back of the mouth) could be missed.

## 20.2 Toothbrushes

### Rationale

A toothbrush used properly is the only tool that will remove bacterial plaque from the teeth and mouth.

### Manual small headed

Mini MCM recommends that hospitals stock children's toothbrushes with appropriate sized heads for hospital patients. A toothbrush with a small head is more effective at reaching all parts of the mouth. A soft toothbrush can be used for patients with very sore mouths, or those suffering from acute ulceration or mucositis. There are several companies that market small-headed toothbrushes for hospitalised/intensive care patients.

Adaptations can be made to toothbrushes to aid grip for people with poor manual dexterity; a small flannel can be wrapped around a toothbrush, for example. Some hospital occupational therapists will also be able to make adaptations to toothbrush handles for those with poor grip such as patients with cerebral palsy or juvenile arthritis.

### Three-headed toothbrush

A three-headed/curved filament toothbrush (see product guide) can be used for patients whose cooperation with tooth brushing is limited. These toothbrushes simplify the tooth brushing technique by brushing multiple surfaces of a tooth at the same time, and therefore can be completed in less time. However, they are not as effective at removing dental plaque as normal manual or electric toothbrushes and should only be used as a last resort. These toothbrushes should be used with toothpaste, and placed over the teeth, and a forward-backwards motion is used to mechanically remove plaque from the teeth.

### Three-headed brush can clean multiple surfaces

Three-headed toothbrushes should be used with toothpaste and placed over the teeth. A forward-backwards motion is used to mechanically remove plaque from the teeth.

### Aspirating (suction) toothbrush

An aspirating toothbrush is one that can be connected to the suction tubes. This will help to remove excess saliva or water from the mouth during tooth brushing. This may be particularly useful in unconscious or intubated patients who are at risk of aspirating. They should be used in the same way as a regular manual toothbrush, using circular motions to clean all tooth surfaces. However, if a non-foaming toothpaste is used the need for aspiration toothbrushes is less.

### Electric toothbrush

Electric or powered toothbrushes have many benefits and can be used if supplied by the patient. They often have small heads, which are ideal for cleaning all areas of the mouth. If the toothbrush has a rotating action, circular motions are

not required and the toothbrush can be simply placed on the tooth surface with the bristles directed towards the gum margin and held there before moving onto the next tooth.

**Barriers to mouth care:**

**13 year old Alfie was admitted to hospital and brought his electric toothbrush. His battery went flat on the first day of admission and as he did not bring his charger, he did not brush his teeth. Upon assessment of his mouth by a member of the nursing team - swollen, red gums and bad breath was noted at day 3. Alfie admitted to not cleaning his teeth due to the flat battery, and he was provided with a manual toothbrush. Upon re-assessment a few days later, and asking daily if he had cleaned his teeth, Alfie's gum health had improved and bad breath was no longer an issue.**

**How to store a toothbrush**

Ideally toothbrushes should be stored so that the head can be air-dried following use. In hospitals, due to the number of spores in the air this is not feasible. Ideally products could be stored in a covered container for air circulation. We find that a simple baguette box allows products to do so.



Product box

Small-headed toothbrush



Aspirating toothbrush



Three-headed toothbrush



## 20.3 Toothpastes



### Rationale

To clean teeth, and introduce a source of topical fluoride to help strengthen teeth and reduce the risk of dental decay developing.

It is important that fluoridated toothpaste is used twice daily to help protect teeth against tooth decay. For all children at risk of developing dental decay, toothpaste should contain at least 1350ppm fluoride (or 1.1% sodium fluoride). A smear or pea-sized amount should be used for children under the age of 6 years. A pea-sized amount should be used for children above the age of 6. It is important to "spit not rinse" (spit out excess toothpaste but do not rinse the mouth out with water or mouthwash) to ensure that a film of toothpaste is left in contact with the teeth, allowing it to be absorbed. Patients should be advised not to eat or drink for at least 30 minutes after tooth brushing.

High fluoride toothpaste (e.g. Duraphat) with 2800ppm (for children above the age of 10) or 5000ppm (for children above the age of 16) fluoride may be prescribed by a doctor or dentist for patients who are at a high risk of developing dental decay. These toothpastes should be used in the same way as any other toothpaste.

Sodium Lauryl Sulphate (SLS) is the ingredient added to many toothpastes that makes them foam. This can have a drying effect on the oral tissues and therefore should be avoided in patients who already have a dry mouth. Similarly, for those patients at risk of aspirating, such as intubated patients, a SLS free toothpaste could also be beneficial.

We recommend that the hospital provides non-foaming toothpastes (Sodium Lauryl Sulphate (SLS) free) for patients with a dry mouth or patients who are at risk of aspirating. The following table details toothpastes that are SLS free. It is important to note that some toothpastes such as Oralie

lieve contain proteins extracted from milk. These are not suitable for patients with a confirmed allergy to milk (or vegans). This should be checked.

Patients who are edentulous (have no teeth) or nil by mouth still need their mouths cleaned.

### Brands of non-foaming (SLS free) toothpaste and the fluoride content

Sensodyne daily care gel	1450ppm
Sensodyne daily care	1450ppm
Oranurse unflavoured toothpaste	1450ppm
Sensodyne pronamel	1450ppm
Retardex toothpaste	1000ppm
Aquafresh children's little teeth	1400ppm
Oralieve moisturising toothpaste	1450ppm
BioXtra toothpaste	1450ppm
Biotene toothpaste	1000ppm

## 20.4 Foam swabs and patient safety

Foam swabs have been used to frequently clean and hydrate the mouths of patients.

In 2012 the Medicines and Healthcare Regulations Agency (MHRA) published a medical device alert on the safety of oral swabs with a foam head and the risk of choking. The problem raised was that the foam heads could detach during use. In Wales a foam head became detached when a carer was carrying out mouth care for an elderly patient. The foam head could not be retrieved and the patient subsequently died. Reports from the MHRA show that there continues to be regular reporting of foam head detachment. The alert advised not to use the swabs in patients who were likely to bite down, and not to soak them before use.

## 20.5 Are mouth swabs needed for oral care?

Research shows that oral foam swabs are not an effective means to remove dental plaque and should not be used as an alternative to tooth brushing (Pearson, 2002). They tend to be used in patients with dry mouths to re-hydrate the mouth with water, and wet the lips. Alternatively, they are also sometimes used for patients with excess secretions to help clear the mouth to reduce the aspiration risk.

## 20.6 Mouth Care Matters' findings

A survey carried out on nursing staff at East Surrey Hospital showed that foam swabs were used by 60% of staff. Observations by the mouth care team have seen on several occasions foam swabs being soaked in a variety of liquids on the wards, including fruit juice. Several nurses have reported at mouth care training sessions that part or all the foam heads have become detached while using them.

## 20.7 Alternatives to foam swabs

A small-headed toothbrush is the best tool to clean the teeth, gums and tongue and can also be beneficial for dry mouths when soaked in water/dry mouth moisturising gels.

MouthEze cleansers can be used to provide dry mouth care, including the application of dry mouth gels. They can also be used to clean the soft tissues of the mouth and remove food debris and tenacious dried saliva. They are gentle enough to be used on patients with sore mouths and yet strong enough, with a hard plastic handle, to reduce the choking hazard.

Foam swab



MouthEze cleanser



## 20.8 How to use a MouthEze cleanser

Start by checking the integrity of the MouthEze by tugging at the head. Hold the handle between your thumb and forefinger and roll between your fingers to create a rotating motion. They can also be used to apply dry mouth gels by massaging into soft tissues and to remove sticky secretions from the mouth. For patients with excess saliva, MouthEze can be used along with suction. Manufacturers recommend that MouthEze cleansers should be changed every twelve hours. They should NOT be used to clean the teeth, a toothbrush is the most effective means of removing bacterial plaque.

### Top Tip!

**Some patients such as those with a severe brain injury can have a strong bite reflex. Care must be taken with a toothbrush/ MouthEze cleanser. Patients must be supervised whilst using these.**

## 20.9 Dry mouth moisturising products

### Rationale

To provide long lasting relief for a severe dry mouth in order to soften dried secretions so that they can be removed more readily.

There are different products available including gels, sprays and mouth rinses (see product guide).

Dry mouth moisturising gels can be massaged into all areas of the mouth (cheeks, palate, tongue) using a finger, toothbrush or MouthEze cleanser at regular intervals. They can also be used before meals to help with eating or before tooth brushing for very sore mouths. Dry mouth gels can be mixed with a drops of water to make it more palatable to patients.



Dry mouth gel

## 20.10 Disposable foam mouth prop

### Rationale

To prevent patients biting down on fingers during mouth care.

A foam prop can be used by carers to aid tooth brushing for those patients who lack compliance, or those who find it difficult to keep their mouths open. It is placed between the patient's teeth in order to help with access for tooth brushing. It can also help to protect the fingers of the person assisting brushing. It can be inserted and rotated so it can be used to fully open the mouth as in the picture below. The tip of the foam prop should always be visible, it does not need to extend towards the back of the mouth to achieve adequate oral hygiene.

## 20.11 Prescribed/on the advice of a dentist/doctor

### Chlorhexidine gluconate

Chlorhexidine can be prescribed but it is also available over the counter as 'Corsodyl' mouthwash, gel or spray. Chlorhexidine may be used for patients before and after surgery or as part of a mouth care routine. Chlorhexidine has anti-bacterial properties and can help reduce the likelihood of a child developing an intra-oral infection. It is not suitable for routine use and should only be used on the advice of a dentist or doctor as long-term use can lead to staining of the teeth or tongue. Patients may also have an unpleasant taste or tingling sensation when they first use it. It is important to follow the instructions on the label of the bottle, which will indicate how much mouthwash to use, and how often.

Despite its antibacterial action, it does not penetrate dental plaque and therefore it is no substitute for brushing the teeth twice daily with a toothbrush and toothpaste. The plaque that builds up on teeth daily needs to be removed mechanically with a toothbrush.

The alcohol free Chlorhexidine should be used for patients with dry mouths or sore mouths. Chlorhexidine comes as a mouthwash, a gel or a spray. Up to 12 sprays can be given and should target the gum margin i.e. where the gum meets the teeth.

The action of Chlorhexidine can be neutralised by the ingredients in toothpaste and therefore they should not be used together. The mouthwash should not be swallowed.

**If advised to use chlorhexidine mouthwash, gel or spray do not use at the same time as brushing with toothpaste. Leave an interval of at least 30 minutes.**

### Benzydamine hydrochloride

Also known as 'Diffiam', Benzydamine hydrochloride may be prescribed to patients with a sore mouth to help ease their symptoms. It does not have an antibacterial effect like Chlorhexidine, but an anti-inflammatory effect and is very useful for sore, painful mouths. Benzydamine hydrochloride comes as a mouth rinse or a spray. Benzydamine hydrochloride can be prescribed or bought over the counter.



## 20.12 References

NSPA 2012 - pink foam swabs Medicines and Healthcare Products Regulatory Agency (2008) 017.

A controlled trial to compare the ability of foam swabs and toothbrushes to remove dental plaque. Pearsons LS, Hutton JL. J Adv Nurs. 2002 Sep;39(5):480-9. PMID: 12175357.

# 21

## Recording mouth care for hospitalised children – The Mouth Care Pack

### Key messages

- Every child should have a mouth care risk assessment completed within 24 hours to identify high risk patients
- Low/ Medium risk patients should have their mouth re-assessed every seven days
- High risk patients should have more regular mouth care assessment, and any oral care provided must be recorded daily for all patients

## 21.1 Why do we need to record mouth care?

Recording mouth care is important for several reasons including:

- Identifying patients who are at higher risk of developing problems with their mouth
- Highlighting patients who need support with mouth care
- Compliance with Essence of Care 2010
- Recording daily mouth care and mouth care needs ensures continuity of care between different health care professionals
- As an essential part of general care
- If it is not recorded, it can be assumed it is not being done

## 21.2 Guide for completing the Mouth Care Pack

A mouth care assessment should be completed for every patient within 24 hours of admission.

A **low risk patient** is someone who can either brush their teeth independently, or with little assistance e.g. from family/carer or a member of staff, identified as being independent with regards to caring for their mouth, and not suffering from any condition that would increase their chances of having problems with their mouth. Low risk patients should have their mouth care risk assessment reviewed every seven days, or if their health status changes (for example the patient has surgery). All mouth care given is to be recorded on the daily recording sheet.

A **high risk patient** will need more assistance with caring for their mouth. They can be more likely to develop problems with their mouth during their admission. A high risk patient should have a mouth care risk assessment on admission and be reviewed every seven days or sooner depending on their general health. All mouth care given is to be recorded on the daily recording sheet.

High risk groups include:

- High Sugar diet
- High calorie supplements
- Reflux/frequent vomiting
- Orthodontic appliance/dentures
- Medically compromised

- Dependent on oxygen use
- Dysphagia
- PICU/NICU/CICU
- Learning difficulties
- Nil by mouth
- Palliative care
- Refusing food or drink
- Unable to communicate
- Unable to perform own mouth care

### Patient Record Audit

An audit of patient notes at our hospitals was carried out to ascertain if there was any record of mouth care. We found that there was no evidence of any mouth care assessment in 72% of patient notes audited on the following wards; BMT, Oncology, Renal or Respiratory.

## 21.3 Completing the mouth care screening sheet

The mouth care screening sheet should be completed by anyone who is competent to recognise what Low, Medium and High risks are for each category listed on the Mouth Care Assessment Tool. Ideally, they should have received training in how to complete this form.

For patient privacy on a ward the curtains should be drawn.

Explain to the patient and ask permission before carrying out the risk assessment.

The questions on the form are very straightforward, and where needed, the help of a parent/carer should be enlisted to answer all questions and to establish what risk category that patient will fall into.

## 21.4 Notes on the mouth care screening sheet

### Toothbrush and toothpaste

Ask the patient or parent/carer whether they have their own toothbrush and toothpaste. Parents/carers should always be encouraged to bring in their own toothbrush and toothpaste. If this is not possible, or they have been forgotten, then they

should be provided with a small-headed toothbrush and appropriate toothpaste. This should be recorded on the form.

### Removable appliances

Unfortunately, removable appliances such as orthodontic plates and dentures are known to go missing in hospitals and are not always removed from the patient's mouth during long hospital stays. It is important to know if they wear either of these upon admission. Again, patients should be encouraged to bring their own case for these, a cleaning brush and cleaning tablets if used. Patients are high risk if these appliances are very painful in the mouth or if they are broken. There are some patients who may find it difficult to tolerate their appliances whilst in hospital and unwell. It is advisable, if possible, for appliances that are not worn to be taken home to a safe place by the patient's parents/carer to reduce the chance of them getting lost during a hospital stay.

### Difficulty eating and swallowing and any pain in their mouth?

The patient (or their parent/carer) should be asked if they have issues when eating and drinking and about pain or a dry mouth. For any patient that is unable to answer due to cognitive problems or a degree of sedation they should be deemed high risk.

## 21.5 Assisting patients with mouth care



The Mini MCM Mascot  
(An elephant never forgets  
and neither should we)

The level of assistance for mouth care required by the patient should be assessed on an individual basis and not assumed. Children under 7 (and some above this age) will still need assistance with brushing their teeth. If their parents/carers are able to carry out the child's mouth care confidently, nursing staff should be ready to offer assistance as this may still be needed. If the patient or parents/carers are not confident or able to carry out the child's mouth care, they will depend on more nursing assistance.

### Independent/ parental assistance patients

Independent patients are able to look after their mouths on their own. Patients can be classed as being independent if they can get out of bed, walk to the bathroom and brush their teeth without assistance.



We would also consider those patients with a parent/carer who need some parental assistance also to be independent, and the single elephant Mini MCM Mascot should be placed near the bedside.

All mouth care undertaken on a daily basis needs to be recorded, whether or not help has been provided.

**Please remember to ask your patient twice a day if they have had their teeth cleaned, and record this on the daily recording sheet.**

**Parents/carers are also encouraged to record all mouth care they have given on the recording sheet.**

### Some staff assistance/Fully dependent patients



Patients who are fully dependent on another person for mouth care include children who are very young, the unconscious, or people who have severe physical or learning disabilities.

Examples of patients that need some staff assistance are those with a physical disability that may affect their manual dexterity or those with a mild learning disability who need reminding about tooth brushing. For this group of patients, the double elephant Mini MCM Mascot should be placed on the patient's bay or on the wall by the bed to remind them about the mouth care needed.

**All mouth care is to be recorded each time it is given.**

## 21.6 Mouth care assessment

This section needs to be completed once a week or if the patient's situation changes, for example if a patient is admitted to intensive care and intubated they would become a high risk.

The form should be completed by anyone who is deemed competent to undertake a mouth care assessment.

For patient privacy on a ward the curtains should be drawn.

It is very difficult to look inside the mouth without adequate lighting. The bedside lamp should not be solely relied on for light. A pen torch can provide sufficient lighting for assessing a patient's mouth.



1

If you see the  at my **bedside**, please **ensure** my **mouth care** has been **managed** and **recorded twice daily**.

2

If you see  at my **bedside**, this means **I need help** with my mouth care **at least twice a day**. So people are aware, please **clearly record** what help I received.

3

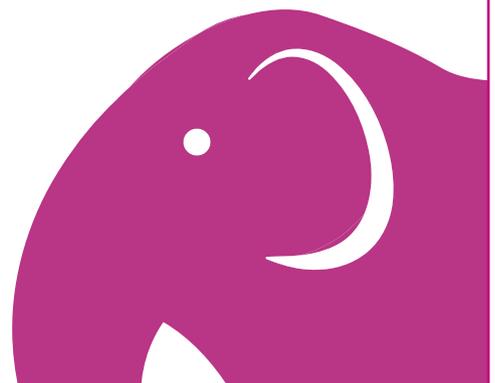
Please **'Lift my Lip'**, to **assess** my **oral health status**. Make a **record** of **what you see**, and **manage** as **directed** by the **mouth care assessment tool**.

4

**'Put The Mouth Back Into The Body'**- my **oral health** can have a **significant impact** on my **general health**.

5

**Elephants never forget** - so please **be like** the  and **don't forget** to **take responsibility** for my **oral health**.





## Mouth Care Assessment & Record

To be completed for every patient within **24 hours** of admission

Patient Name:	
D.O.B	
Hosp Number	
NHS Number	

<b>1. Has the patient got:</b> Teeth Y <input type="checkbox"/> N <input type="checkbox"/> Promote DCby1 A dentist Y <input type="checkbox"/> N <input type="checkbox"/> Encourage to visit Toothbrush Y <input type="checkbox"/> N <input type="checkbox"/> Provided <input type="checkbox"/> Toothpaste Y <input type="checkbox"/> N <input type="checkbox"/> Provided <input type="checkbox"/> Denture/Orthodontic appliance Y <input type="checkbox"/> N <input type="checkbox"/> Storage pot? Y <input type="checkbox"/> N <input type="checkbox"/> Provided <input type="checkbox"/>	<b>2. Who will be providing oral care?</b> Patient <input type="checkbox"/> Parent/ Carer <input type="checkbox"/> Staff <input type="checkbox"/> Shared care <input type="checkbox"/> Any Details? _____	Place Elephant Mascot at bedside to remind staff of patient's level of support
---	--	--

**3. Does the patient have any pain or discomfort in the mouth? (Note verbal, behavioural or physical signs)** Y  N  Why? \_\_\_\_\_

Patients with **NO TEETH, NIL BY MOUTH** or **UNSAFE SWALLOW** still require **REGULAR MOUTH CARE**  
 Consider use of suction toothbrush, suction or non-foaming toothpaste for mouth care

**4. Level of support with Mouth Care required:**  
**Independent/ parental assistance patients:** Place the single behind the bed  
**Assistance needed by ward staff:** Place the double behind the bed

Look in patient's mouth with a <b>PEN TORCH</b> . Carry out <b>WEEKLY</b> assessment Mark as <b>L, M</b> or <b>H</b> in the white box under today's date & sign				Date	Date	Date
	LOW RISK (L)	MEDIUM RISK (M)	HIGH RISK (H)			
<b>Teeth and oral hygiene status</b>  <small>Advise the patient to visit dentist on d/c if problems with teeth not requiring urgent hospital treatment</small>	<ul style="list-style-type: none"> <li>No teeth!</li> <li>No obvious decay or broken teeth</li> <li>Clean mouth</li> </ul>	<ul style="list-style-type: none"> <li>Decay – no pain</li> <li>Broken teeth – no pain</li> <li>Visible plaque, debris &amp; tartar on teeth</li> </ul>	<ul style="list-style-type: none"> <li>Decay/ broken teeth causing severe pain</li> <li>Loose teeth with risk of aspiration/swallowing</li> </ul>			
<b>Action</b>	Twice daily tooth brushing/mouth cleaning with a fluoride toothpaste	Same as Low Risk, however advise to visit dentist on discharge. Monitor during stay for any pain	Same as Low Risk, however refer to Dr <b>immediately</b> , or hospital dental service (if facility/pathway available)			
<b>Lips, tongue, gums &amp; saliva</b>  <small>An ulcer present for more than 2 weeks must be referred to the medical team</small>	<ul style="list-style-type: none"> <li>Pink (or brown depending on child's skin colour)</li> <li>Moist</li> <li>Smooth</li> </ul>	<ul style="list-style-type: none"> <li>Lips dry, chapped or broken at the corners</li> <li>Tongue dry, patchy, coated</li> <li>Reddened, puffy gums</li> <li>Dry mouth</li> <li>Sticky secretions</li> </ul>	<ul style="list-style-type: none"> <li>Ulceration, bleeding, blistered, white or red areas</li> <li>Or, combined white/red areas that can be wiped off to reveal red soft tissues</li> <li>Spontaneous bleeding of gums</li> <li>Swelling of cheek or gum, ulcers, or 'gum boil'</li> <li>Mucositis</li> </ul>			
<b>Action</b>	Twice daily mouth cleaning including tongue and gums with a fluoride toothpaste Monitor weekly for any changes	Same as Low Risk, however additional dry mouth care and removal of secretions	Same as Low Risk, however refer to Dr <b>immediately</b> , or hospital dental service (if facility/pathway available)			
<b>How does the patient respond to having their teeth brushed?</b>	<ul style="list-style-type: none"> <li>Likes to have teeth brushed</li> <li>Will brush teeth if encouraged</li> </ul>	<ul style="list-style-type: none"> <li>Teeth brushed with difficulty, but manage to clean all teeth</li> <li>Distraction needed to deliver oral care</li> </ul>	<ul style="list-style-type: none"> <li>Teeth brushed with difficulty</li> <li>Cannot brush teeth</li> <li>Unable to clean well</li> </ul>			
<b>Action</b>	Twice daily tooth brushing, Follow the child's home routine for oral care management	Same as Low Risk, keep calm and kind approach Speak directly to the patient Ask family or carer for assistance Brush in short bursts Use patient preferred products	Same as Medium Risk, consider use of foam prop/modified toothbrush Involve play specialist if possible Brush at different times of the day Non foaming/flavoured toothpaste Discuss with Dr possible ref to community/hospital dental service if treatment needed			
				<b>Initials/Signature:</b>		

<b>Risk factors: These factors place the patient at a Higher Risk of having problems with their mouth.</b>		
High sugar diet	Reflux/ frequent vomiting	Nil by mouth
Removable appliance (orthodontic/denture)	Medically compromised	High calorie supplements
Dysphagia	Inability to perform own mouth care	End of life

Wear disposable gloves. Some staff may prefer to also wear a disposable apron and a mask when carrying out mouth care.

The form assigns a low, medium or high risk to patients. It assesses different parts of the mouth (lips, tongue, gums, saliva, teeth, and mouth cleanliness) and the ability of the patient to tolerate mouth care. Recommendations and actions needed to be taken are as directed per patient need.

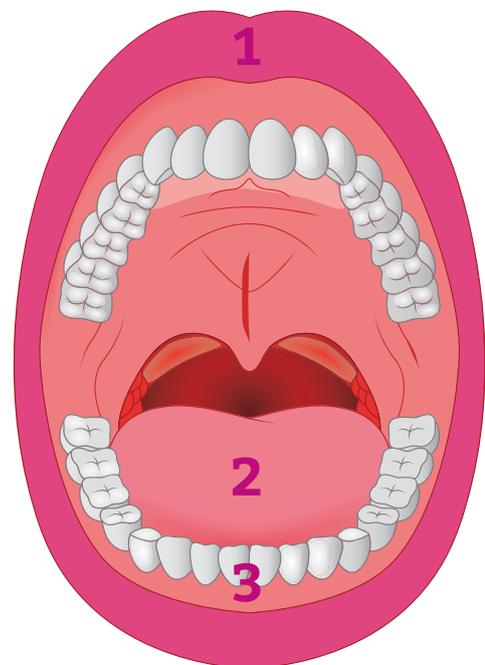
### Looking in the patient's mouth

Start with the lips and look in the mouth in a systematic way:

Use the descriptions in the Low, Medium or High box to determine which category the patient falls into.

Use the columns to the side of the page to record a L,M or H for each section. Under each risk box there is an action advice box about how is best to manage the patient.

- 1 **Teeth & Oral hygiene status:**
  - Clean
  - Teeth are not broken or loose
  - No obvious decay
- 2 **Lips, Tongue, Gums and Saliva:**
  - Pink (or brown-depending on child's skin colour)
  - Moist
  - Smooth
- 3 **How does the patient respond to having their teeth brushed:**
  - Likes to have teeth brushed
  - Will brush teeth if distracted/ encouraged



### 21.7 Daily recording sheet

This sheet is for staff to record any mouth care procedures carried out by hospital staff, for example dry mouth care and assistance with tooth brushing. It also enables staff to record if patients have not had daily mouth care/assessment carried out for reasons including poor compliance, having another procedure carried out or being asleep. This section of the pack should be completed as many times as necessary during the day. For instance, some patients will require two-hourly dry mouth care while others may only need assistance with cleaning an orthodontic appliance once a day.

Carers and family members are also advised to document mouth care on this form.

If you refer a patient for mouth related problems, mark as 'R - Referral', on the daily recording sheet and explain why. It is important to record a patient's refusal (PR) for mouth care. If it becomes consistent refusal, medical advice should be sought and another mouth care assessment carried out.

Make sure that all details of the mouth care that has been provided is documented. To simply say 'mouth care given' is not considered acceptable documentation.

### 21.8 Dental advice to think about discussing with the patient/family/carer

This section of the daily recording sheet is present to act as an aide memoire for those providing oral health care and recording in the notes.

They are considered to be 'top tips' that could help to improve oral health and reduce the risk of dental decay by providing basic dental and dietary advice that some patients/family may not be aware of. Providing this evidence based advice at every possible opportunity is a chance to 'make every contact count'.

### 21.9 References

Department of Health (2010) Essence of Care 2010: benchmarks for the fundamental aspects of care.

A member of the Mouth Care team saw Robbie, a 9-year-old boy who had been an in-patient at the hospital for twelve days due to a chest infection. The patient had severe autism and learning difficulties, and required assistance to clean his teeth. His mother normally helped Robbie to clean his teeth, she was finding it increasingly difficult at home to brush his teeth as he was getting older. Due to the change in environment, being in hospital, this hadn't helped the situation.

Robbie was non-verbal and had recently started repeatedly hitting the right side of his jaw, and refused food. His mother said she had stopped trying to clean his teeth since he was admitted to hospital because she was preoccupied with his chest infection, and she was afraid that he would cause a scene in public if she tried to brush his teeth. She also did not have his toothbrush or the flavour-free toothpaste he usually used at home. She was asked if she had requested help with oral care, but she said that she didn't like to trouble the nurses because she knew that they were very busy.

The mother was asked if she would like help with cleaning her son's teeth and she was very grateful. Robbie was provided with a 3-headed toothbrush and a flavour-free toothpaste. He and his mother were given time every morning and evening to clean his teeth in a private bathroom. Robbie's teeth were cleaned and checked and a mouth care risk assessment and mouth care recording pack were completed. He was identified as having inflamed and bleeding gums, as well as an aphthous ulcer on his right cheek. He was prescribed a topical analgesic to relieve pain from the ulcer as he was not a candidate for the use of a mouth rinse. When his cleaning routine was restored, his gums had stopped bleeding and the ulcer had resolved. The self-trauma ceased upon resolution of the ulcer. Robbie's mum was very relieved, and grateful for the assistance to resume normality whilst in hospital.



# 22

## Assisting patients with mouth care

### Key messages

- Hospitalised patients may require a different level of assistance with their oral care
- A patient's independence and ability to perform everyday tasks may change throughout their hospital stay
- It is not always obvious that some patients need help



### 22.1 How to distinguish between independent and dependent patients?

Patients should be assessed as to their level of independence in terms of providing self-care, including tooth brushing. Hospitalised patients are often less independent than they would be at home. This can be as a result of their illness; they may feel too unwell and lack the energy and desire to clean their teeth. They may have reduced mobility and unable to get to the bathroom to clean their teeth. Young patients will need help to carry out tooth brushing until at least the age of 7 years.

It is therefore important to ask, and not presume, if a hospitalised patient is able to brush their teeth. Often, simply bringing the patient a bowl will allow them to carry out their normal oral hygiene routine at the bedside, if they are unable to go to a sink.

It is important to assess the patient's ability to grip, hold and use a toothbrush. Electric toothbrushes that have a larger handle may be more beneficial for patients who have difficulties with their grip; adaptations can also be made to manual toothbrushes, which can increase the patient's independence in carrying out daily tasks. If necessary, seek help and advice from an occupational therapist or a dental professional.

### 22.2 Different types of assistance

Patients may require different levels of assistance. It can be as simple as prompting and reminding them to brush their teeth, or enlisting the help of a play specialist who may be able to help with patients who lack compliance and cooperation. It is important to assist patients with their mouth care in a way that maintains their independence as it provides them with a sense of achievement and self-worth.

For some patients, particularly those who lack cooperation with mouth care or those with learning disabilities, assistance from visiting family members or carers may help to gain compliance with oral hygiene. It may be necessary to find out how mouth care is ordinarily provided for the patient at home.

### 22.3 Cross infection control

Personal Protective Equipment (PPE) should be worn by nursing staff/healthcare assistants when providing or supporting a patient with mouth care.

Hand hygiene should be carried out and the following PPE used:

- Disposable gloves (essential)
- Plastic apron and face mask (optional)

#### Hand washing technique



## 22.4 Key messages in steps

### Tooth brushing

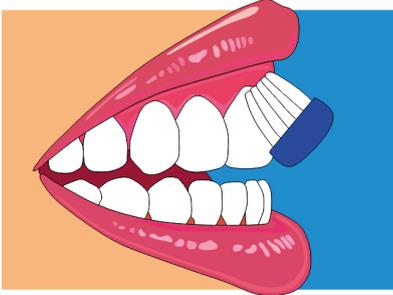
- Where possible patients should be encouraged to sit up, or at least with the bed tilted slightly up and standing behind the patient if possible.
- Tooth brushing should be carried out at least twice daily.
- A toothbrush with a small head is recommended for patients in hospital.
- A pea sized amount of toothpaste should be used for patients with no swallowing problems over the age of 6 years. Under the age of 6, a smear of toothpaste only.
- A smear of non-foaming SLS free toothpaste should be used for patients with swallowing problems (dysphagia), and paste should be pressed into the bristles of the brush.
- Small circular or gentle back and forth motions are best
- Patients should be encouraged to spit out, and not rinse the mouth out afterwards to maximise the contact of fluoride on teeth
- Patients should be encouraged not to rinse or drink within 30 minutes of brushing their teeth.

### Dry mouth care

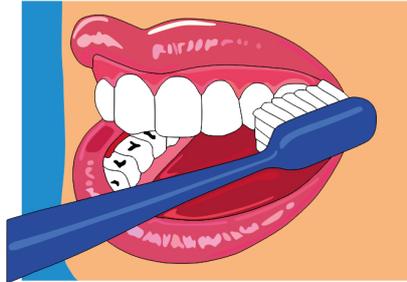
Hydration with frequent sips of plain water (unless patient is nil by mouth or on fluid restriction).

Application of dry mouth moisturising gels. These can be applied as necessary and for severe dry mouths recommended two hourly. The gels can be applied with a gloved finger, a toothbrush or MouthEze cleanser to all areas of the mouth including the lips, cheeks, tongue and palate. When using a dry mouth gel it needs to be massaged into the soft tissues, and little is recommended otherwise it can become sticky. Make sure you clean the mouth to remove visible secretions and debris before applying and re applying dry mouth gels.

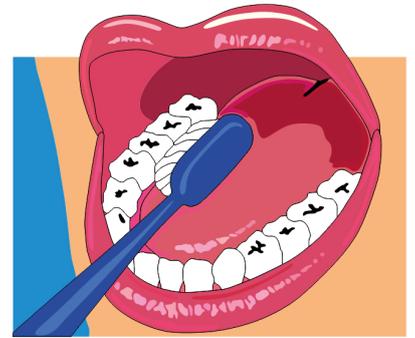
How to brush teeth



**1** Place the brush at a 45° angle to the front tooth surface. Bristles must contact both lines of tooth and gum.



**2** Move the brush in a small, jiggling, circular motion.



**3** Clean the inside surfaces of the back teeth by moving the brush in a small back and forth motion.



**4** Clean the inside surfaces of the front upper teeth by tilting the brush vertically using small up and down strokes.



**5** Clean the inside surfaces of the front lower teeth by tilting the brush vertically using small up and down strokes.



**6** Move the brush in a back and forth motion to clean the biting surfaces.

# 23

## Patients with orthodontic appliances and dentures

### Key messages

- Orthodontic appliances/dentures should be cleaned at least once daily with a denture brush or toothbrush and liquid soap
- Dentures should be removed at night and stored in water, in a labelled denture pot
- Orthodontic appliances should be worn/maintained as directed by the patient's orthodontist
- An incident reporting form must be completed by the ward for every lost appliance

### 23.1 Dentures and orthodontic appliances in children

Occasionally you may see children who are wearing orthodontic appliances or dentures. Dentures may be worn to replace missing teeth that have been lost due to trauma, have been removed due to decay, or teeth that are developmentally absent. Orthodontic appliances may be used as part of treatment to align (straighten) the child's teeth or to keep these teeth in the correct position. Children wearing dentures or orthodontic appliances are at increased risk of tooth decay and gum disease. It is important to be aware of the type of appliance the child is wearing and to ensure that they are keeping the appliance and their mouth clean.

### 23.2 Importance of denture hygiene

Denture hygiene is important to ensure good oral health. Food debris and plaque can easily accumulate on dentures and needs to be removed daily. With partial dentures, plaque left on them can lead to an increased risk of decay to the remaining teeth. Dentures, in particular plastic dentures, can harbour microorganisms such as candida, which can cause oral thrush that is commonly referred to as denture stomatitis when under a denture.

### 23.3 Types of orthodontic appliances

Orthodontic appliances are used to help straighten teeth and correct jaw discrepancies. Orthodontic appliances are provided by orthodontists; dentists who specialise in straightening teeth. Patients usually see their orthodontist every 6-8 weeks for the adjustment of their appliances. There are several different types of appliances and the main categories are:

- Fixed appliances
- Removable appliances
- Headgear
- Retainers

### 23.4 Fixed appliances

Fixed appliances/braces are used to straighten teeth and are usually worn by a patient for a period of 18 months to three years.

These braces are fixed to patient's teeth and should only be removed or adjusted by the patient's orthodontist.

These braces can be painful for 3-5 days after they have been adjusted. Patients may need to take regular pain killers (e.g. paracetamol or ibuprofen) for this. Occasionally these braces may irritate the lips and cheeks. The patient's dentist or orthodontist can provide them with wax to place over the braces to help with this.

Patients with fixed appliances may need to wear "elastics" (elastic bands) on their braces. These elastics should be worn at all times (including meal times). The patient's orthodontist should have shown them how to place and remove their elastics.

If the patient's brace breaks, their orthodontist should be contacted as soon as reasonably possible as this could damage their teeth or delay their brace treatment.



Patient with fixed braces wearing "Elastics"



Photo of a patient with fixed braces



### 23.5 Removable appliances

Removable appliances are also used to help straighten teeth and correct jaw discrepancies in growing children. They are a different type of brace that can be placed and removed by the patient. The patient's dentist or orthodontist also adjusts this type of appliance.

As with fixed appliances, patients may experience oral discomfort when the appliances have been adjusted. They can also use simple analgesia for managing discomfort, but should continue to wear their appliance as it will gradually become more comfortable over a few days.

If patients start to develop significant soft tissue discomfort (such as an oral ulceration) whilst wearing these appliances, we would advise you to seek the advice of a dentist or orthodontist.

Patients' speech may be affected when wearing their appliance, and they may produce more saliva than normal. This will return to normal as they adapt to the appliance.

### 23.6 Headgear

Headgear is an orthodontic appliance that is attached to the patient's teeth and connects with a neck strap or head cap. It is used to help control the growth of the jaws, move teeth backwards or prevent teeth from moving forwards. Ideally they should be worn every day to ensure success of the treatment.

Fitting and removing headgear can be challenging for the patient initially. The patient's orthodontist will show the patient how to fit and remove the headgear safely. The headgear has a safety mechanism to prevent accidental removal. If part of the headgear becomes loose or comes off, the patient should stop wearing the headgear and call their orthodontist for advice as soon as possible.

Headgear is usually worn from 8-14 hours a day and should not be worn whilst children are playing. As with the other orthodontic appliances, children's teeth may be sore for a few days after the headgear is fitted. The neck straps and head caps may be uncomfortable initially for a few days. This can be adjusted by the patient's orthodontist if necessary. If a patient is hospitalised, it is unlikely they will continue to wear headgear as an in-patient.

### 23.7 Retainers

After orthodontic treatment is completed, patients wear retainers to keep their teeth straight. These retainers can be removable or fixed to their teeth.



Clear "Essix" retainers

### 23.8 Lost appliances

Appliances can unfortunately get lost during a patient's hospital stay. They occasionally are thrown away as patients sometimes wrap them in tissue, which can be easily mistaken for rubbish. Patients should be encouraged to use pots to store their appliances when they are not in their mouth. If appliances are lost, an incident reporting form (DATIX) should be completed by the nursing staff on the wards.

### 23.9 Cleaning appliances

Oral appliances should be cleaned at least once daily, but ideally after every meal. If the patient is unable to do this themselves, care staff should ensure to clean them as follows:

- Carry out hand hygiene and use patient protective equipment (PPE) including disposable gloves and apron
- Fill a disposable bowl with water
- Remove the appliance from the patient's mouth

- Use a denture brush or a soft toothbrush. If the patient has natural teeth, this should not be the patient's toothbrush but a different brush
- Use a fragrance-free liquid soap applied to the brush to remove plaque and food debris, brushing all surfaces of the appliance and paying particular attention to any clasps. Toothpaste should not be used as this can be abrasive and can scratch the appliance
- Rinse the appliance well with cold water
- Either return to the patient or store overnight in a labelled pot filled with fresh, cold water
- Remove PPE and carry out hand hygiene

If the patient has a partial denture, they will also have their own natural teeth that will need to be cleaned twice daily.

For patients with oral thrush under an appliance or denture (denture stomatitis) the appliance/ denture should be soaked in Chlorhexidine 0.2% for 15 minutes.

### 23.10 Oral hygiene for patients with fixed appliances

Patients wearing appliances are at increased risk of developing tooth decay and gum disease. Excellent oral hygiene is essential to prevent these from occurring.

It is important for patients to brush twice daily for at least 2 minutes with fluoridated toothpaste. Patients may also have special interdental brushes to help them clean around their braces and in between their teeth. Some patients may need assistance with tooth brushing.

Patients above the age of 8 years should use a fluoride mouthwash once daily at a different time to tooth-brushing (e.g. after lunch) to reduce the risk of developing tooth decay. Patients should avoid eating or drinking for 20 minutes after they have used the mouthwash.

### 23.11 Diet and oral appliances

It is advised that patients avoid food that could damage their teeth or oral appliances. It may be difficult for patients to eat hard or chewy foods such as apple or crusty bread. These should be avoided or cut into smaller pieces so they can be eaten without damaging the appliance.

Patients should also avoid sugary snacks and drinks such as fizzy drinks, sports drinks or fruit juices as these can increase the chance of them developing dental decay. Chewing gum and hard-boiled sweets may also get lodged into the appliances causing damage, or making them difficult to clean. Both should be avoided.

**An 11-year-old patient was in hospital following a road traffic accident. He had a removable orthodontic appliance to help align his front teeth that he wore 24 hours a day. He was very weak and was unable to communicate to staff that he was unable to remove his appliance during his stay. The mouth care team were called to the ward as the family of the patient had noticed their sons bad breath as the days passed. The nursing staff had not completed an oral assessment when he was first admitted, The mouth care team completed this and identified the patient had a removable appliance in place.**

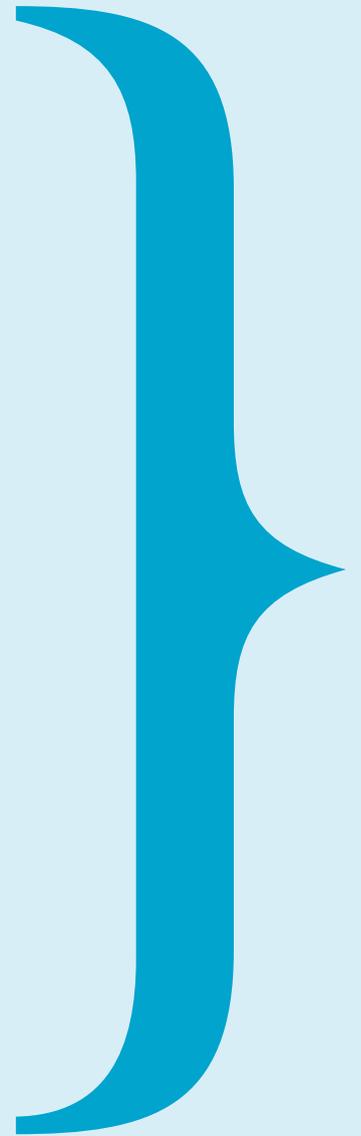
**When the appliance was removed, it was covered in food debris and plaque. The appliance was cleaned and the staff were shown how to assist the patient remove, clean and replace it daily. The appliance was quite tricky to remove and this highlighted the importance of ward based training for hospital staff.**

# 24

## Dental referrals

### Key messages

- Hospitals should have an agreed pathway for urgent dental referrals for inpatients
- Patients with non-urgent problems (that are not impacting on their everyday life) should be advised to see a dentist upon discharge
- If a patient does not have a dentist their parent/carer should be advised to call 111



## 24.1 Urgent and non-urgent referrals

During a hospital stay it may be necessary for a patient to be referred for dental advice/treatment.

Referrals will either be urgent (needs to be treated whilst in hospital) or non-urgent (should be advised to see a dentist upon discharge).

It is important that all hospitals have a pathway for patients that require urgent advice/treatment that might impact on their overall general health and hospital stay.

An urgent referral for a hospitalised patient includes:

- Severe dental pain affecting sleep, eating and drinking
- Dental infection (facial swellings, pus adjacent to teeth)
- Trauma to teeth (may be after a fall)
- Teeth that are so mobile they may be an aspiration risk
- Ulcers caused by trauma from broken teeth or removable appliances that cannot be managed by local measures on the ward.

A non-urgent problem that does not need a referral includes:

- Broken teeth, fillings, orthodontic appliances or dentures that are not painful (for some groups of patients such as people with severe learning disabilities, it may not be possible to know if they are in pain and they should be referred to appropriate services such as special care dental service)
- Loose orthodontic appliances or dentures
- Cosmetic dentistry.

Patients with non-urgent problems should be advised to see their dentist. If they do not have a dentist they (or their parent/carer) should call 111 who will be able to advise them on how to find a local dentist.

# 25

## How to find a dentist

### Key messages

- Urgent dental care can be accessed by calling NHS 111
- Hospitals may have dental or maxillofacial departments
- Patients can find a local dentist via the NHS website
- Children can be seen by the Community Dental Service



## 25.1 NHS 111

Call 111 to find an urgent dental service.

### NHS website

NHS dentists can be found via the NHS website:

<https://www.nhs.uk/using-the-nhs/nhs-services/dentists/how-to-find-an-nhs-dentist/>

Patients can search for a dentist based on their location:

<https://www.nhs.uk/Service-Search/Dentists/LocationSearch/3>

### Community Dental Services

Children can also be seen by the Community Dental Service however they must be referred to this service.

<https://www.nhs.uk/using-the-nhs/nhs-services/dentists/dental-treatment-for-people-with-special-needs/>

Contact NHS England on 0300 311 2233 for further information.

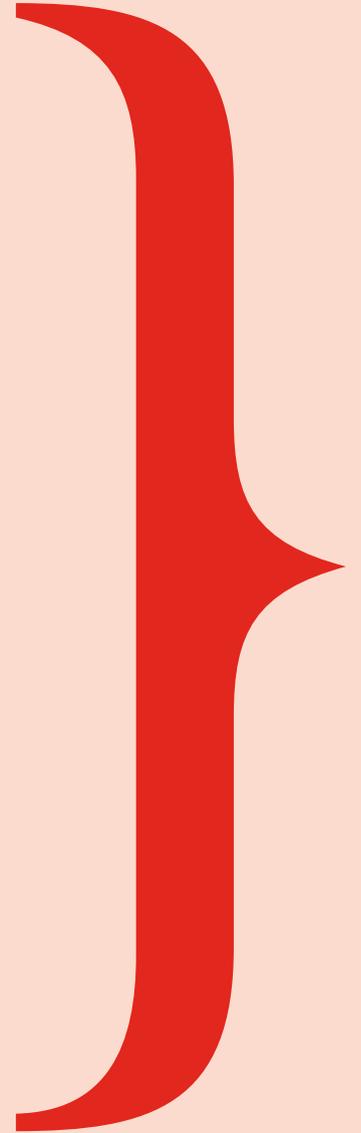
### Hospital dental departments

Some hospitals have paediatric dental departments or maxillofacial units who accept patient referrals for treatment.

There is usually a strict acceptance criteria for taking on patients for treatment in a dental hospital.

# 26

# SMILE



## Key messages

- An acronym designed to help remember the five key points for carrying out good mouth care

## 26.1 What is SMILE?

By using SMILE in a patient's daily mouth care routine, their overall health and wellbeing are greatly improved. The expression 'putting the mouth back into the body' reminds people that oral health can have an impact on general health.

SMILE



*Say 'Ahh'- and put the mouth back into the body*



*Mouth care pack on admission*



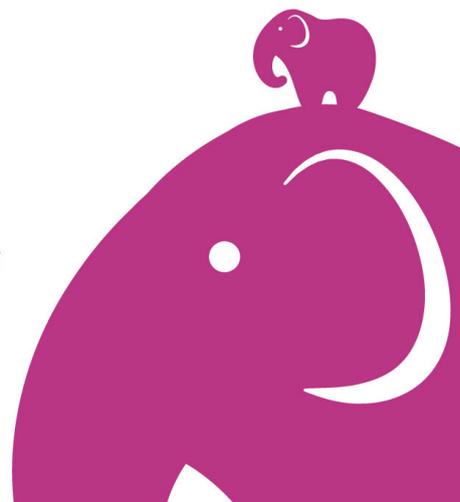
*Include mouth care as an essential part of patient care*



*Lift the Lip*

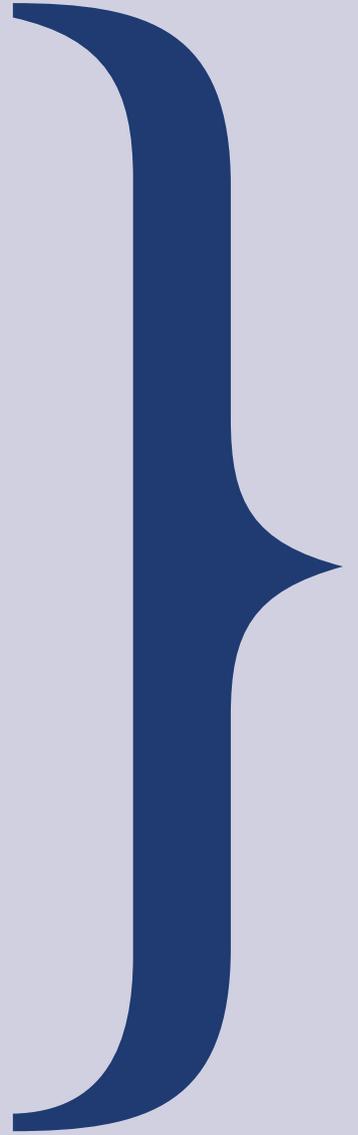


*Every contact counts*



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Contact



## 27.1 Contact

Email: [minimouthcarematters@hee.nhs.uk](mailto:minimouthcarematters@hee.nhs.uk)

Twitter: @MiniMouthCareM1

#liftthelip

#putthemouthbackintothebody

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<http://www.mouthcarematters.hee.nhs.uk>

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