Oral conditions

1. Oral conditions

In primary care, we are likely to come across several common oral conditions which can cause discomfort and decreased quality of life for our patients. In this article, we draw on a JAMA systematic review alongside an older BMJ article on halitosis to consider the management of four of the most common presentations (JAMA 2024;331:1045, BMJ 2006;333:632):

- Dry mouth.
- Candida.
- Aphthous ulcers.
- Halitosis.

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1.1. Dry mouth

The JAMA review subdivides 'dry mouth' into (JAMA 2024;331:1045):

- Xerostomia (the subjective feeling of having a dry mouth).
- Salivary gland hypofunction (objective reduction in the saliva flow).

Global prevalence of dry mouth is high, estimated at around 23% of the population, with levels closer to 30% in those over the age of 60y.

Prevalence is higher in those on 3 or more medications, in those with Sjögren disease, and after head and neck radiotherapy. Medications implicated include anticholinergics, antihypertensives, antidepressants, antihistamines and antipsychotics (JAMA 2024;331:1045).

Assessment

Symptoms can include dysphagia, altered taste, problems with chewing, speech changes, thirst, a feeling of oral dryness and halitosis. Patients are at increased risk of dental caries and oral thrush.

Signs may include dried secretions on the oral mucosa. We should look for asymmetry or masses within the salivary glands. NICE guidance reminds us that we should arrange a suspected cancer referral for anyone with symptoms or signs of malignancy; see our article *Head, neck and thyroid cancer* for more details (NICE 2015, NG12).

Salivary gland hypofunction can be measured using sialometry: the patient is asked to chew on a specific salivary trigger, and then expectorate the

saliva pooled in the floor of the mouth over a period of 5–15 minutes.

Management

Treatment of dry mouth is aimed at improving salivary secretions. Initial advice is to drink plenty (2 litres per day) and to chew sugar-free gum or lozenges. Over-the-counter oral moisturises (sprays, gels, mouthwash) may provide symptom relief, but there is no supportive evidence from RCTs.

- Medication-induced dry mouth may be relieved with malic acid spray (such as Salivix). These are associated with an increased risk of dental caries so patients should be advised to seek dental review and take good care with dental hygiene.
- After radiotherapy, systemic sialagogues such as pilocarpine may be of greater benefit. These should be used with caution in people with a history of asthma, COPD or cardiovascular disease.

1.2. Oral thrush

Oral thrush is a common opportunistic fungal infection of the oral mucosa (JAMA 2024;331:1045).

Risk factors include immune suppression, often seen due to use of corticosteroids or antibiotics or in patients with HIV or cancer. Other risk factors include use of dentures, salivary gland hypofunction and oral skin conditions such as lichen planus.

Assessment

Typical symptoms of candida include a burning sensation in the mouth and a persistent metallic or salty taste.

The most common sign of oral thrush is white discharge on the mucosa, which can be wiped off to show erythema underneath. Less commonly, atrophic candidiasis may look like smooth red patches on the tongue, palate or lips. Hyperplastic candidiasis is less common, resulting from chronic candidal infection. Here, the white patches cannot be wiped off and have a rough pebbly surface, typically nearer the tip of the tongue. This can mimic leucoplakia and may be associated with oral cancer. Referral for biopsy is advised.

Management

Initial treatment should include addressing the underlying cause and risk factors for thrush. This may include increasing fluid intake, reminding patients to rinse after using inhaled corticosteroids, disinfecting dentures and managing systemic disease risks.

Treatment is then with topical or systemic antifungals. The BNF treatment summary (accessed January 2025) recommends:

- Mild and localised infections: topical miconazole oral gel first line, nystatin drops second line.
- Persistent or more severe infections: oral fluconazole may be considered.
- If symptoms persist after 1 week, the treatment course can be extended by a further week, or referral to a specialist can be considered.

A 2019 systematic review showed that probiotics may be protective against colonisation with oral candida. However, further research was needed to

determine the dose, duration and type of probiotics to recommend (JAMA 2024;331:1045).

We have considered the management of angular cheilitis in our separate article on *Periocular and perioral rash*.

1.3. Recurrent aphthous ulceration

Recurrent mouth ulcers are the most common acute oral presentation, with a prevalence of up to 50% across the lifetime. It is slightly more prevalent in women, with most common onset age 10–19y. The prevalence decreases with age. Frequency of ulceration can vary from anywhere between 1–2 episodes per year to >1 per month.

Pathophysiology shows a combination of predisposing factors, including genetic predisposition alongside nutritional, allergic, immune and systemic disease triggers. No infective cause has been proven.

Nutritional factors associated with recurrent mouth ulcers include reduced levels of vitamin B, folic acid, ferritin, zinc and vitamin D.

Systemic diseases associated with recurrent mouth ulcers include Behçet's disease, inflammatory bowel disease, coeliac disease and HIV/AIDS.

Assessment

Mouth ulcers have 3 distinct forms:

- Minor aphthous ulceration:
    - The most common subtype, accounting for 80% of recurrent mouth ulcers.

    - Painful, small (<1cm diameter), round or oval ulcer, usually on the lips, buccal mucosa and floor of the mouth.
    - Covered with a grey-white fibrin layer and circled by erythema.
    - Heals without scarring in 7–10d.
- Major aphthous ulceration:
    - Less common, accounting for around 10–15% of recurrent mouth ulcers.
    - Larger (>1cm diameter), occurring in clusters of 1–3 on the lips, oropharynx and soft palate.
    - Can take >4 weeks to heal and may result in scarring.
- Herpetiform aphthous ulceration:
    - Least common.
    - Resembles but NOT caused by HSV (takes its name because it *looks like* herpes stomatitis).
    - Very small ulcers that merge to form larger, irregularly-shaped clusters of ulceration.
    - Usually heal within 7–14d without scarring.

Assessment should include asking about past medical conditions, medication history and family history, as well as the clinical character of the ulcers and wider systemic symptoms.

A persistent non-healing ulcer in the oral cavity should prompt referral along suspected cancer pathways (NICE 2015, NG12).

In children with severe gingival ulceration and swelling, consider primary herpetic gingivostomatitis, which needs treatment with oral antivirals. Details can be found in our specific article on that condition. HSV lesions are more likely to appear on keratinised mucosa such as the hard palate or

gingiva, which can help distinguish them from aphthous ulcers.

Management

Management is focused on alleviating symptoms and extending the interval between episodes.

Topical corticosteroids are most used, and have been shown in meta-analysis to reduce the size of ulcers and the recurrence rate.

- Topical steroid treatments first line: hydrocortisone 2.5mg buccal tablets (BNF accessed January 2025).
- Alternative (off-licence) options include beclometasone inhaler sprayed directly onto the ulcer, or betamethasone soluble tablets used as a mouthwash.
- A short course of systemic steroids may be prescribed for patients with severe recurrent ulcers.

Laser therapy has also been used to promote healing in recurrent mouth ulcers, but there is a lack of evidence of effectiveness over topical medications, or of the correct dose of laser advised.

Natural remedies such as honey and curcumin (from turmeric) have been shown in meta-analysis to reduce the size of ulcers compared with controls, and probiotics were found to reduce pain scores in a separate meta-analysis.

1.4. Halitosis

Halitosis is common.

A Cochrane review of interventions was published in 2019, but sadly has little positive to offer (Cochrane Database Syst Rev 2019, CD012213). However, most of this advice comes from a 2006 BMJ review, and very little has changed since then! (BMJ 2006;333:632)

Assessment

- Take a history of whether this is longstanding or not.
- Bad breath on waking that resolves with getting up/teeth cleaning/breakfast isn't classed as halitosis.
- Check that the patient's partner/clinician can also smell it; otherwise, think about whether this could be halitophobia (preoccupation with the idea that they have halitosis, often with repeated teeth cleaning, etc., even when others are unaware of it). Often a delusional disorder. May start to misinterpret things in relation to breath (e.g. *the window was opened because of my bad breath*, when, in reality, the window was opened because the room was hot).
- Examine, looking for the causes listed below, thinking in terms of:
    - Illnesses.
    - Drugs.
    - Food stuffs.

Causes of halitosis

Poor oral hygiene is the most common cause of halitosis, due to local bacterial production of sulfites and amines (BMJ 2006;333:632).

Common causes		
Oral disease	**Respiratory disease**	**Volatile foodstuffs**
Food impaction Gum and tooth disease Xerostomia Dry socket after tooth removal Oral ulceration Oral malignancy	Foreign body Sinusitis Tonsillitis Malignancy Bronchiectasis	Garlic Onions Spiced foods

Systemic causes of halitosis
Acute febrile illness Respiratory tract infection (usually upper) *Helicobacter pylori* infection (?) Pharyngo-oesophageal diverticulum Gastro-oesophageal reflux disease Pyloric stenosis or duodenal obstruction Hepatic failure (fetor hepaticus) Renal failure (end stage) Diabetic ketoacidosis Leukaemia Metabolic disorders (trimethylaminuria, hypermethioninaemia) Menstruation (menstrual breath)

Drugs that can cause halitosis
Alcohol Tobacco Betel Solvent misuse Chloral hydrate Amphetamines Nitrites and nitrates Phenothiazines Disulphiram for alcohol misuse

Some cytotoxic agents

Management

- **A Cochrane review in 2019 looked at a multitude of interventions vs. placebo, and found no strong evidence for any intervention being effective.** This included (Cochrane Database Syst Rev 2019, CD012213):
    - Tongue cleaning.
    - Toothpastes.
    - Mouth rinses.
    - Chewing gums.
    - Oral deodorisers.
    - Topical gels (such as hinokitiol).
    - Combinations of the above.
- **However, if poor oral hygiene is present, good oral hygiene may have a significant impact (teeth cleaning, tongue cleaning, mouth washes, flossing).**
- Oral antibiotics were not covered in the Cochrane review. There seem to be a few small and old trials on this, and the effect seems to be short lived.
- Clinical psychology input may be required for those with halitophobia.

We can reassure our patients that maintaining good oral hygiene is usually effective to improve the condition, and that this should take place alongside lifestyle modifications (avoiding drugs and alcohol) and ruling out any systemic disease causes (BMJ 2006;333:632).

Oral conditions

- Common oral presentations include: dry mouth, oral thrush, recurrent mouth ulcers and halitosis.
- Management of dry mouth includes oral saliva replacement, sugar-free gums and lozenges, and promoting fluid intake.
- Management of oral thrush should include treating any underlying triggers, alongside topical antifungal treatments.
- Recurrent aphthous ulcers are the most common acute oral presentation. Classify by size and clinical presentation. Manage most with topical corticosteroids and avoidance of underlying triggers.
- Non-healing mouth ulcers should prompt investigation for oropharyngeal cancer.
- Halitosis has limited proven effective options, but good dental hygiene and lifestyle modifications should be tried, and we should rule out systemic diseases/drugs that may be contributing to the halitosis.

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