

*The* ROYAL MARSDEN

NHS Foundation Trust

---

Oral Care and Cryotherapy  
for patients having High Dose  
Melphalan (HDM) chemotherapy as  
part of Haematopoietic Stem Cell  
Transplant (HSCT) treatment

---

**Patient Information**



**NHS**

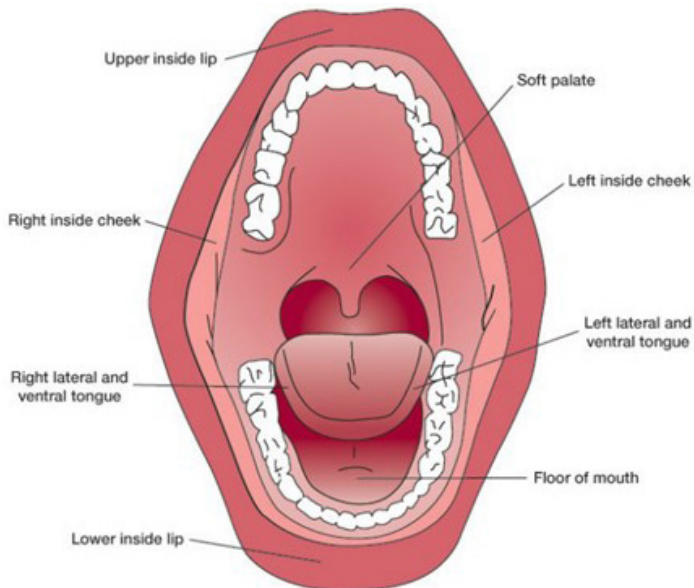


## Introduction

Mouth care is important to help prevent and/or reduce oral complications during and after treatment. Chemotherapy agents used in HSCT may cause oral complications and mucosal injury (damage to the lining of the mouth).

These complications can include:

- Sore mouth and ulcers
- Bleeding (in the oral cavity)
- Taste changes
- Dry mouth
- Dry lips
- Dysphagia (difficulty swallowing)
- Pain
- Oral Graft versus Host Disease (only in Allograft HSCT setting).



Areas of the mouth that are assessed in the daily Oral Assessment (Courtesy of UK Oral Management in Cancer Care Group, 2019).

It is vital that you follow good oral hygiene practices throughout your HSCT treatment including:

- Daily oral assessment (your nurse will complete this with you)
- Reporting any oral changes to your nurse or medical team
- Using normal saline (0.9% Sodium Chloride) mouthwash
- Using a Fluoride-based toothpaste (reduces plaque)
- Eating a balanced and nutritious diet
- Staying hydrated
- Using mucosal protectants/barrier rinses (Episil or Gelclair). This creates a protective layer over the areas of the mouth lining that has broken down. Apply 15-30 minutes before eating or after eating
- Taking anti-infective preventative medications to prevent infections such as Aciclovir, Posaconazole and Ciprofloxacin
- Smoking cessation.

## What is Oral Mucositis (OM)?

OM is the inflammation and potential ulceration of the oral mucosa, which may result in pain, difficulty swallowing (dysphagia), high risk of infection and can lead to poor nutritional intake. OM can extend throughout the oesophageal tract, causing abdominal pain and diarrhoea. This is a common side effect of chemotherapy, radiotherapy and HSCT.

## What is Oral Cryotherapy?

Oral cryotherapy involves sucking on ice or ice lollies, or holding ice water in the mouth before, during and after chemotherapy with a short half-life. Melphalan has an average half-life of 72-90 minutes, which means in that time frame 50% of the concentration of Melphalan will be metabolised and eliminated.

Therefore Oral Cryotherapy is recommended for patients receiving chemotherapy agents that have a short half-life.

## What are the benefits of Oral Cryotherapy?

It can reduce the incidence of OM by causing local vasoconstriction (narrowing of small veins in the mouth). This reduces the blood flow to the mouth, and therefore reduces the amount of chemotherapy delivered to the mouth.

Research has suggested that the application of Oral Cryotherapy has been beneficial in reducing or minimising the severity of OM in patients receiving HDM chemotherapy.

## What will I need to do?

You will need to suck on ice or ice lollies, or hold ice water in your mouth for:

- **10 minutes before** Melphalan administration (start when you are given the pre-medications)
- **30 minutes during** the infusion and;
- **40–60 minutes after**, or as long as tolerated.

## What are the side effects of Oral Cryotherapy?

Short-term side effects include:

- Possible discomfort and intolerance of holding ice in the mouth
- ‘Brain freeze’ or headache.

No long-term side effects have been documented to date.

If you have any further questions, if you do not wish to have oral cryotherapy, or if you need assistance with oral care please let your nurse know.

## **Further information from the UK Oral Management in Cancer Care Group UKOMiC (2019) suggests:**

- If you are experiencing **taste changes**, metal cutlery should be avoided, as this can heighten the metallic taste. Plastic cutlery can be used instead.
- **Brushing of teeth**, gums and tongue should be performed two to four times a day preferably after meals and before going to bed, with a soft-bristled toothbrush (manual or electric).
- If the mouth is painful or patients cannot open their mouths fully, soft oral sponges may be used, and analgesia (pain relief) offered.
- **To prevent infections**, the toothbrush should be stored with the brush head upwards.
- After each meal, dentures must be rinsed. Thorough cleaning by brushing with soap and water should be performed at least twice a day. Dentures should be cleaned, dried and stored in a closed container overnight.
- **The goal of using mouthwashes** is for oral hygiene, preventing/treating infections, moistening the oral cavity or providing pain relief.
- As a minimum to keep the mouth clean, Normal Saline mouthwashes are recommended at least four times a day.
- Lubricants, lip balm or lip cream may be used to **moisten the lips**.
- To keep the mouth moist, regular sipping or spraying water may help. **Saliva substitutes** may be used.
- **Dental flossing** is not recommended for HSCT patients until their platelets have returned to normal range.
- **Nutritional support will be offered by the Dietetic team.**

## References

This booklet is evidence based wherever the appropriate evidence is available, and represents an accumulation of expert opinion and professional interpretation.

Details of the references used in writing this booklet are available on request from:

The Royal Marsden Help Centre  
Freephone: 0800 783 7176  
Email: [patientcentre@rmh.nhs.uk](mailto:patientcentre@rmh.nhs.uk)

No conflicts of interest were declared in the production of this booklet.

Should you require information in an alternative format, please contact The Royal Marsden Help Centre.

The patient information service is generously supported by The Royal Marsden Charity.

[royalmarsden.org](http://royalmarsden.org)

Registered Charity No.1095197



Published October 2022. Planned review October 2025  
© The Royal Marsden NHS Foundation Trust RS-1776-01



Radiotherapy and  
Chemotherapy Services  
F538021 & F538022

