

## References

## Key findings/recommendations

<p>Alvariño-Martín, C. &amp; Sarrión-Pérez, M-G. (2014) Prevention and treatment of oral mucositis in patients receiving chemotherapy. <i>Journal of Clinical and Experimental Dentistry</i>, 6(1), e74-80</p>	<ul style="list-style-type: none"> <li>● Support for the use of an oral care protocol for all patients during cancer treatment cycles to reduce duration and severity of oral mucositis, and prevent the development of dental problems</li> <li>● No evidence to support the use of growth factors, allopurinol, glutamine, sucralfate, Amifostine in the prevention or treatment of mucositis</li> <li>● Cryotherapy can be beneficial in the prevention of oral mucositis with chemotherapy agents with short plasma half-life such as with Melphalan, but not consistent enough</li> <li>● No gold standard</li> <li>● WHO scale to classify the severity of oral mucositis</li> </ul>
<p>Australian and New Zealand Children's Haematology/Oncology Group (2015) Minimum Requirements for Mouthcare for Paediatric Patients with Cancer. Oral Care Working Group, ANZCHOG Nursing Sub Group, November 2015, Retrieved 27/07/2018</p>	<ul style="list-style-type: none"> <li>● Helpful to utilize risk groups</li> <li>● Fluoride toothpaste strengthens enamel</li> <li>● 0.22% fluoride is recommended</li> <li>● Chlorhexidine gels and rinses should be used but not as substitutes</li> </ul>

Evidence table for: [https://www.rch.org.au/rchcpg/hospital\\_clinical\\_guideline\\_index/Mouth\\_Care\\_of\\_the\\_paediatric\\_oncology\\_patient/](https://www.rch.org.au/rchcpg/hospital_clinical_guideline_index/Mouth_Care_of_the_paediatric_oncology_patient/)  
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<p>Children’s Oncology Group, (2018) COG Supportive Care Endorsed Guidelines, Children’s Oncology Group (COG), Version date: August 22, 2018</p>	<ul style="list-style-type: none"> <li>● Important to establish effective ways to measure the prevalence and risk of mucositis</li> <li>● Beneficial to use scoring methods and directly translate into implementation of care</li> <li>● (0.22% fluoride for 6 years+ and 0.11% for under 6 years old</li> </ul>
<p>Consultant Pharmacist and Lead Nurse thyroid, Head &amp; Neck Oncology (2021)  “Guidelines for the prevention and management of oral complications from systemic anti-cancer treatment or radiotherapy, including mucositis.” Royal Marsden Hospital, National Health Services, London. Accessed 20/02/2023.</p>	<ul style="list-style-type: none"> <li>● Most common cause of sepsis and septic shock in this cohort</li> <li>● Avoid spicy/acidic foods</li> <li>● Benzydamine 0.15% effective but difficult to utilize in children</li> <li>● Tranexamic acid mouthwash sometimes helpful in treating bleeding gums- but not preventative</li> <li>●BD fluoride toothpaste recommended</li> </ul>
<p>Eilers, J., Harris, D., Henry, K. &amp; Johnson, L.A. (2014) Evidence-Based Interventions for Cancer Treatment-Related Mucositis: Putting Evidence Into Practice. <i>Clinical Journal of Oncology Nursing</i>, 18(6), 80-96</p>	<ul style="list-style-type: none"> <li>● Assessing for mucositis with same consistent approach is helpful for prevention and management</li> <li>● Develop evidence-based oral care protocols for cancer-related mucositis care</li> <li>● Some evidence for sodium bicarb mouthwashes but this is becoming less common</li> </ul>

Evidence table for: [Clinical Guidelines \(Nursing\) : Mouth care – oral care of the paediatric oncology patient and haematopoietic stem cell transplant patient \(rch.org.au\)](#)

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<p>Elad, S., Raber-Durlacher, J.E., Brennan, M.T., Saunders, D.P., Mank, A.P., Zadik, Y., Quinn, B., Epstein, J.B., Blijlevnes, N.M.A., Waltimo, T., Passweg, J.R., Correa, M.E.P., Dahllof, G., Garming-Legert, K.U.E., Logan, R.M., Potting, C.M.J., Shapira, M.Y., Soga, Y., Stringer, J., Stokman, M.A., Vokurka, S., Wallhult, E., Yarom, N. &amp; Jensen, S.B. (2015) Basic oral care for hematology-oncology patients and hematopoietic stem cell transplantation recipients: a position paper from the joint task force of the Multinational Association of Supportive Care in Cancer/International Society for Oral Oncology (MASCC/ISOO) and the European Society for Blood and Marrow Transplantation (EBMT). <i>Supportive Care in Cancer</i>, 23, 223-236</p>	<ul style="list-style-type: none"> <li>● Outlines a multidisciplinary approach for oral and dental care for haematology-oncology and HSCT patients</li> <li>● Discusses infection, pain, oral hygiene, complications, quality of life</li> <li>● Strong evidence for mechanical toothbrushing with fluoride toothpaste</li> <li>● Chlorhexidine should be used alongside this (not exclusively).</li> <li>- Utilise pain scales</li> <li>- Utilise dental team as required</li> <li>- Evidence for prophylactic antifungals and antivirals</li> </ul>
<p>Great Ormond Street Hospital for Children, (2017) Version 4, Clinical Guidelines: Mouth Care, Retrieved 22/04/2023</p>	<ul style="list-style-type: none"> <li>● Oral hygiene is recommended twice a day</li> <li>● Avoid extremely hot or cold food</li> <li>● Helpful to risk categorize patient groups</li> </ul>
<p>He, M., Zhang, B., Shen, N., Wu, N. &amp; Sun, J. (2018) A systematic review and meta-analysis of the effect of low-level laser therapy (LLLT) on chemotherapy-induced oral mucositis in pediatric and young patients. <i>European Journal of Pediatrics</i>, 177, 7-17</p>	<ul style="list-style-type: none"> <li>● 8 clinical trials identified (373 paediatric patients) comparing LLLT to routine prevention or treatment during or after chemotherapy</li> <li>● Prophylactic LLLT reduces mucositis</li> </ul>

Evidence table for: [Clinical Guidelines \(Nursing\) : Mouth care – oral care of the paediatric oncology patient and haematopoietic stem cell transplant patient \(rch.org.au\)](#)

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<p>James, P.J., Howard, R.F. &amp; Williams, D.G. (2010) The addition of ketamine to a morphine nurse- or patient-controlled analgesia infusion (PCA/NCA) increases analgesic efficacy in children with mucositis pain. <i>Pediatric Anaesthesia</i>, 20, 805-811</p>	<ul style="list-style-type: none"> <li>● The addition of ketamine to a morphine NCA/PCA improves analgesic efficacy in children with mucositis pain with no increase in the incidence of side effects</li> </ul>
<p>Kumar, N., Brooke, A., Burke, M., John, R., O'Donnell, A. &amp; Soldani, F. (2012) The Oral Management of Oncology Patients Requiring Radiotherapy, Chemotherapy and/or Bone Marrow Transplantation: Clinical Guidelines. The Royal College of Surgeons of England / The British Society for Disability and Oral Health, Retrieved 27/03/2023  <a href="https://www.rcseng.ac.uk/dental-faculties/fds/publications-guidelines/clinical-guidelines/">https://www.rcseng.ac.uk/dental-faculties/fds/publications-guidelines/clinical-guidelines/</a></p>	<ul style="list-style-type: none"> <li>● Oncology patients should receive effective dental care and input throughout treatment (avoiding treatment)</li> <li>● Strong emphasis and evidence of successful outcomes when MDT approaches are utilized well. I.e. dietetics, pain team</li> <li>●BD tooth brushing, more if tolerated</li> <li>● Fluoride toothpaste</li> <li>● Chlorhexidine effective alongside toothpaste</li> <li>● Prophylactic medications are encouraged, especially high risk groups</li> </ul>
<p>Lalla, R. V., Bowen, J. M., Barasch, A., Elting, L. S., Epstein, J. B., Keefe, D., McGuire, D. B., Migliorati, C. A., Nicolatou-Galitis, O., Peterson, D. E., Raber-Durlacher, J. E., Sonis, S. T., &amp; Sharon, E. (2020). MASCC/ISOO clinical practice guidelines for the management of mucositis secondary to cancer therapy. <i>Cancer</i>, 126(19), 4423–4431.  <a href="https://doi.org/10.1002/cncr.33100">https://doi.org/10.1002/cncr.33100</a></p>	<ul style="list-style-type: none"> <li>● Touches on gastrointestinal and oral mucositis</li> <li>● Encourages oral protocols that emphasize brushing and flossing with mouth rinses- Basic oral care involves mechanical cleaning (tooth brushing, flossing), mouthwashes to</li> </ul>

Evidence table for: [Clinical Guidelines \(Nursing\) : Mouth care – oral care of the paediatric oncology patient and haematopoietic stem cell transplant patient \(rch.org.au\)](#)

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	<p>reduce bacterial build-up (bland rinses), and hydration and lubrication (applying moisturizing agents) to the oral mucosal surfaces.</p> <ul style="list-style-type: none"> <li>• No evidence on any one particular medication but suggests utilizing chlorhexidine, saline, fluoride toothpaste</li> <li>• Review and update of previous guidelines produced by the Multinational Association of Supportive Care in Cancer &amp; the International Society for Oral Oncology (MASCC/ISOO) using literature review; recommendations provided for gastrointestinal and oral mucositis</li> </ul>
<p>National Cancer Institute (NCI). (2018). Chemoradiotherapy and haematopoietic stem cell transplantation patients: Management of mucositis. Retrieved April 8, 2023, from <a href="http://www.cancer.gov/cancertopics/pdq/supportivecare/oralcomplications/HealthProfessional/page5">http://www.cancer.gov/cancertopics/pdq/supportivecare/oralcomplications/HealthProfessional/page5</a></p>	<ul style="list-style-type: none"> <li>• Prevalence for Oral Complications With Cancer Therapies: Oral Care Study Group Systematic Reviews, MASCC/ISOO: <ul style="list-style-type: none"> <li>• 39% patients receiving high dose chemo will develop oral fungal infection</li> <li>• Pain is common and is reported by approximately by 81% during therapy</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>• dose reduction or treatment schedule modifications may be necessary to allow for resolution of oral lesions</li> </ul>
Riley, P., Glenny, A.M., Worthington, H.V., Littlewood, A., Fernandez Mauleffinch, L.M., Clarkson, J.E. & McCabe, M.G. Interventions for preventing oral mucositis in patients with cancer receiving treatment: cytokines and growth factors. Cochrane Database of Systematic Reviews 2017, Issue 11. Art. No.: CD011990. DOI: 10.1002/14651858.CD011990.pub2.	<ul style="list-style-type: none"> <li>• KGF relatively safe intervention but no conclusive evidence about the use of cytokines and growth factors in children undergoing cancer treatment (insufficient evidence)</li> </ul>
St Judes Oral Care Mucositis Clinical Practise Guideline (2017) "Oral Care/Mucositis," Nursing Standard of Care Manual, 3.	<ul style="list-style-type: none"> <li>• Discusses recommendations for the dental care of the paediatric oncology patient primarily during the treatment phase</li> </ul>
Sung, L., Robinson, P., Treister, N., Baggott, T., Gibson, P., Tissing, W., Wiernikowski, J., Brinklow, J., Dupuis, L.L. (2017) Guideline for the prevention of oral and oropharyngeal mucositis in children receiving treatment for cancer or undergoing haematopoietic stem cell transplantation. BMJ Supportive & Palliative Care, 7, 7-16	<ul style="list-style-type: none"> <li>• Keratinocyte growth factor (KGF) may be offered to children receiving HSCT conditioning with regimens associated with a high rate of mucositis (considerations prior to implementation; lack of efficacy and toxicity data in children, lack of long term follow up data in children, risk of adverse effects from mucosal thickening)</li> </ul>
Tsui, K. (2017) Mouthcare and mucositis, Starship. Available at: <a href="https://starship.org.nz/guidelines/mouthcare-and-mucositis">https://starship.org.nz/guidelines/mouthcare-and-mucositis</a> (Accessed: April 11, 2023)	<ul style="list-style-type: none"> <li>• The oral cavity is a frequent site of complications</li> </ul>

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	<ul style="list-style-type: none"> <li>• Gram +ve and anaerobic infections are high risk in these groups</li> <li>• Education with families allows medical staff to implement risk adapted guidelines</li> <li>• Utilise prophylactic mouthcare protocols</li> <li>• Strong evidence for fluconazole as a prevention of invasive fungal disease in the mouth</li> </ul>
<p>White MC, Hommers C, Parry S &amp; Stoddart PA. Pain Management in 100 episodes of severe mucoistis in children. Pediatric Anesthesia. 2011; 21: 411-416.</p>	<ul style="list-style-type: none"> <li>• Recommends Lignocaine 2% viscous + warm water +/- mouthwash</li> <li>• Intravenous opioids may be necessary. Morphine is traditionally the first line opioid to use in mucositis treatment</li> </ul>
<p>Worthington, H.V., Clarkson, J.E., Khalid, T., Meyer, S. &amp; McCabe, M. Interventions for treating oral candidiasis for patients with cancer receiving treatment. Cochrane Database of Systematic Reviews 2010, Issue 7. Art. No.:CD001972. DOI: 10.1002/14651858.CD001972.pub4.</p>	<ul style="list-style-type: none"> <li>• 10 randomised controlled trials included in the review</li> <li>• Drugs absorbed from the gastrointestinal (GI) were beneficial in eradication of oral candidiasis compared with drugs not absorbed from the GI tract</li> <li>• Clinicians need to decide on whether to prevent or treat oral candidiasis in patients receiving cancer treatment</li> </ul>

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<p>Yarom, N. et al. (2019) “Systematic Review of Natural and miscellaneous agents for the management of oral mucositis in cancer patients and clinical practice guidelines—part 1: Vitamins, minerals, and nutritional supplements,” Supportive Care in Cancer, 27(10), pp. 3997–4010. Available at: <a href="https://doi.org/10.1007/s00520-019-04887-x">https://doi.org/10.1007/s00520-019-04887-x</a>.</p>	<ul style="list-style-type: none"> <li>● Further review and update of previous guidelines conducted by the Mucositis Study Group of the Multinational Association of Supportive Care in Cancer</li> <li>● No guideline possible due to insufficient and/or conflicting evidence for the following natural agents; vitamin A, vitamin E, oral glutamine, honey, aloe vera gel, chamomile mouthwash, indigo wood root, manuka and kanuka oils and chinese herbal drug mouthwashes</li> </ul>
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