The Oral & Dental Management of Patients Before, During and After Cancer therapy

GRADE Certainty of Evidence

October 2025

Paediatric Dentistry Workstream

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
Oral Care Search Strategy			
Miranda-Silva, W., Gomes-Silva, W., Zadik, Y. et al 2021. MASCC/ISOO clinical practice guidelines for the management of mucositis: sub-	Evidence of benefit from use of honey and photobiomodulation. Wide variation in photobiomodulation protocols noted. Advice to implement basic oral care	High	Strong

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
analysis of current interventions for the management of oral mucositis in pediatric cancer patients. Supportive Care in Cancer; 29:3539-3562. Doi: 10.1007/s00520-020-05803-4.	protocols in absence of high quality evidence.		
Patel P, Robinson PD, Baggott C, Gibson P, Ljungman G, Massey N, Ottaviani G, Phillips R, Revon-Rivière G, Treister N, White M, Cabral S, Dupuis L, Sung L., 2021. Clinical practice guideline for the prevention of oral and oropharyngeal mucositis in pediatric cancer and hematopoietic stem cell transplant patients: 2021 update. European Journal of Cancer 154:92-101. Doi:10.1016/j.ejca.2021.05.013	Update of 2015 POGO recommendations. Recommendations for use of oral cryotherapy in older, co-operative children receiving short infusion chemotherapies; use of intraoral photobiomodulation 620-750nm for paediatric patients receiving HSCT or radiotherapy for the head and neck. Recommendations against the use of granulocyte colony stimulating factors and keratinocyte growth factors in children.	High	Strong
Sung L, Robinson P, Treister N, Baggott T, Gibson P, Tissing W, Wiernikowski J, Brinklow J, Dupuis LL, 2017. Guideline for the prevention of oral and oropharyngeal mucositis in children receiving treatment for cancer or undergoing haematopoietic stem cell transplantation. Supportive & Palliative Care; 7:7-16. Doi: 10.1136/bmjspcare-2014-000804	Initial POGO guidance. Includes weaker recommendation for use of photobiomodulation in other pediatric patients at high risk of developing oral mucositis.	High	Conditional

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
Redman M, Harris K, Phillips B, 2021. Low-level laser therapy for oral mucositis in children with cancer. Archives of Disease in Childhood; 107: 128-133. Doi: 10.1136/archdischild-2020-321216	Pooled reduction in incidence of severe oral mucositis of 0.5 at 7-10 days in paediatric meta-analysis. Wide confidence intervals due to variations in parameters and protocols but statistically significant.	High	Strong
Gobbo M, Verzegnassi F, Ronfani L, Zanon D, Melchionda F, Bagattoni S, Majorana A, Bardellini E, Mura R, Piras A, Petris MG, Mariuzzi ML, Barone A, Merigo E, Decembrino N, Vitale MC, Berger M, Defabianis P, Biasotto M, Ottaviani G, Zanazzo GA. Multicenter randomized, double-blind controlled trial to evaluate the efficacy of laser therapy for the treatment of severe oral mucositis induced by chemotherapy in children: laMPO RCT. Pediatric Blood & Cancer; 65:e28098. Doi: 10.1002/pbc.27098	Multi-centre randomised controlled trial demonstrating statistically significant difference in mucositis severity at days 7 and 11 with use of photobiomodulation. Predominantly Caucasian population and older children (mean age of 11 years).	High	Strong
He M, Zhang B, Shen N, Wu N, 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. European Journal of Pediatrics	Odds ratio of 0.5 for developing oral mucositis after photobiomodulation and 0.3 for severe oral mucositis. Reduction in pain with prophylactic use.	High	Strong

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
117: 7-17. Doi: 10.1007/s00431-017-3043-4			
Bezerra, P.M.M., Vieira, T.I., dos Santos, F.G. et al., 2022. The impact of oral health education on the incidence and severity of oral mucositis in pediatric cancer patients: a systematic review and meta-analysis. Supportive Care in Cancer; 30: 8819-8829.Doi: 10.1007/s00520-022-07296-9	Low certainty evidence to support oral health education in reducing oral mucositis incidence. High variability in specifics of oral health education interventions. Recommendation strength increased given positive impacts on overall child oral health.	Low	Strong
Hao S, Ji L and Wang Y., 2022. Effect of Honey on Pediatric Radio/Chemotherapy-Induced Oral Mucositis (R/CIOM): A Systematic Review and Meta-Analysis. Evidence-Based Complementary and Alternative Medicine; 6906439. Doi: 10.1155/2022/6906439	Pooled risk ratio of developing oral mucositis of 0.18 in groups receiving honey across included studies. Variable interventions including dosing of honey (up to 1g/kg per day), honey ice cubes (which conflates with cryotherapy). Well conducted systematic review but recommendation made against honey due to cariogenic risk and alternative options available.	Moderate	Strong (against)
Growth & Development Search			
Busenhart, Dan Mike ; Erb, Juliane ; Rigakos, Georgios ; Eliades, Theodore ; Papageorgiou, Spyridon N., 2018.	Well conducted systematic review but high heterogeneity and risk of bias. Chemotherapy is associated with increased risk of dental anomalies like	Moderate	Strong

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
Adverse effects of chemotherapy on the teeth and surrounding tissues of children with cancer: A systematic review with meta-analysis	agenesis. Chemotherapy is also associated with decreased salivary flow and increased caries. Comprehensive hospital dental care might be needed for childhood cancer survivors. Strength of recommendation made based on overall caries risk in these patients.		
Chow EJ, Anderson L, Baker KS, Bhatia S, Guilcher GM, Huang JT, Pelletier W, Perkins JL, Rivard LS, Schechter T, Shah AJ, Wilson KD, Wong K, Grewal SS, Armenian SH, Meacham LR, Mulrooney DA, Castellino SM. Late Effects Surveillance Recommendations among Survivors of Childhood Hematopoietic Cell Transplantation: A Children's Oncology Group Report. Biol Blood Marrow Transplant. 2016 May;22(5):782-95. doi: 10.1016/j.bbmt.2016.01.023	All HSCT survivors should have dental exams and cleaning every 6 months, and annual oral exams, including special attention for those with a history of radiation or chronic GVHD for xerostomia and second cancers. A baseline OPG should be considered in all survivors to evaluate root development prior to dental procedures	High	Strong
Defabianis P, Bocca N, Romano F. Prevalence and association of dental anomalies and tooth decay in Italian childhood cancer survivors.Journal of Clinical Pediatric Dentistry,2023,47(5):81-87 DOI:10.22514/jocpd.2023.056	88 Childhood Cancer survivors. Modified dental defect index (MDDI) and DMFT higher in childhood cancer survivors submitted to cancer treatment before age 5-years. No statistically significant difference between different cancer modalities. Those with higher MDDI / more severe dental anomaly had	Moderate	Conditional

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
	increased DMFT and closer monitoring warranting.		
Orthodontics			

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
É. Boyer, G. Robert, V. Gandemer and M. Bonnaure-Mallet., 2017. Orthodontic strategies in pediatric oncology. J Dentofacial Anom Orthod, 20 1 (2017) 104 DOI: 10.1051/odfen/2016035	Review article by orthodontists with clinical experience in managing children during cancer treatment. Advise to avoid/suspend orthodontic therapy during cancer treatment due to risk of mucositis, oral ulceration, xerostomia, changes in bone turnover increased risk of infection and need to reduce contact with others as well as psychosocial considerations. Warn family of orthodontic relapse and consider continuing with passive retention depending on family choice After cancer treatment, recommendation to resume orthodontic therapy 2 years after HSCT or radiotherapy. If CT only, a few months after treatment likely sufficient. Radiotherapy may have an suppress craniofacial growth leading to reduced vertical dimensions, alveolar processes and sagittal dimensions of the bones. Mandibular retrognathism is increased in irradiated children <5 years. Reduced orthodontic forces recommended due to potentially short and slender roots after radiotherapy.	Low	Conditional
Dental Treatment			

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
Tunlayadechanont P, Tunlaydechanont P, Sriudomporn N, Wisetsathon P, Duangthip D, Jirarattanasopha V., 2024. Association between dental restorations and artefacts on head magnetic resonance images in paediatric patients. Int J Paediatr Dent. 34: 546-553. Doi:101.1111/ipd.13155	Review of 94 patients with pre-formed metal crowns receiving head MRI with a dental examination in the last year. 24 of these patients had artefacts, all had dental restorations & all had preformed metal crowns. Tooth coloured and amalgam restorations did not statistically significantly increase risk ratio of MRI distortion. Distortion predominantly affected imaging of maxillary sinuses and oral cavity rather than brain. Distortion was related to the number of restorations placed. The authors recommend that removal of these restorations is not required prior to a head MRI.	Moderate	Conditional

Restorative Dentistry Workstream

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
Oral Care Search Strategy			
TUMULURI V, LEINKRAM D, FROGGATT C, DUNN M, WYKES J, SINGH J, et al. Outcomes of immediate dental implants in vascularised bone flaps for mandibular reconstruction. ANZ J Surg. 2023 Jun 7;93(6):1682–7. 10.1111/ans.18427	Weak evidence shows that the placement of primary implants at the time of reconstruction is safe and facilitates timely rehabilitation.	Low	Weak
WOODS B, SCHENBERG M, CHANDU A. A Comparison of Immediate and Delayed Dental Implant Placement in Head and Neck Surgery Patients. Journal of Oral and Maxillofacial Surgery. 2019 Jun;77(6):1156–64. 10.1016/j.joms.2019.02.007	Weak evidence shows that the placement of primary implants at the time of reconstruction is safe and facilitates timely rehabilitation.	Low	Weak
CHO H, KUMAR N. Dental management of a patient with head and neck cancer: a case report. Br Dent J. 2019 Jul 12;227(1):25–9. 10.1038/s41415-019-0464-7	Patients should have a pre-cancer treatment dental assessment to reduce the extent of disease. Units should have a clearly defined dental referral pathway and access to specialist dental care in the head and neck cancer unit. Urgency of cancer treatment should not preclude dental assessment. Post-operative regular dental f/u should be instigated for	Very low	Strong

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	monitoring and maintenance. Care should be provided on shared care basis, with collaborative working between GDPs and specialists		
COTIC J, JAMSEK J, KUHAR M, IHAN HREN N, KANSKY A, ÖZCAN M, et al. Implant-prosthetic rehabilitation after radiation treatment in head and neck cancer patients: a case-series report of outcome. Radiol Oncol. 2016 Feb 7;51(1):94–100. 10.1515/raon-2016-0005	Implants inserted in the transplanted bone were statistically significantly more likely to fail than those inserted in the native bone.	Very low	Weak
FLORES-RUIZ R, CASTELLANOS-COSANO L, SERRERA-FIGALLO M, CANO-DIAZ E, TORRES-LAGARES D, GUTIERREZ-PEREZ J. Implant survival in patients with oral cancer: A 5-year follow-up. J Clin Exp Dent. 2018;0–0. 10.4317/jced.54937	High survival rate of implants in post H&N cancer patients - slightly reduced survival rate of implants into grafted bone. no consensus regarding timeouts needed to achieve successful survival after placement of endosseous implants or for placement of prostheses	Low	Weak
HUANG YF, LIU SP, MUO CH, TSAI CH, CHANG CT. The association between dental therapy timelines and osteoradionecrosis: a nationwide population-based cohort study. Clin Oral Investig. 2020 Jan 20;24(1):455–63.10.1007/s00784-019-02866-4	Pre-RT RCTs and scaling/subgingival curettage post RT may signficantly increase ORN risk. Within 2 weeks before radiotherapy and 1 to 3 months after radiotherapy, initiating exodontia should be avoided to reduce ORN occurrence. Oral surgery is best to be avoided to reduce the risk of ORN from 3 months	Moderate	Strong

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
	prior to radiotherapy to 6 months after the end of radiotherapy. Choosing the right time to start appropriate dental treatment could effectively reduce oral infection and ORN.		
ABED H. National and international guidelines on the replacement of missing teeth with dentures for head and neck cancer patients post-radiotherapy: A rapid review. Saudi Dent J. 2023 Feb;35(2):125–32. 10.1016/j.sdentj.2023.01.009	Recommendations were: • importance of maintaining good oral hygiene and not to wear dentures when sleeping • Poorly fitting dentures should not be worn during treatment or episodes of mucositis • Ill-fitting dentures should be adjusted to improve the fit There are very few guidelines and those that do exist differ, lack detail, and rarely go beyond routine advice. Accordingly, clear, detailed, and evidence-based guidelines are required to inform the management of patients with missing teeth following radiotherapy for HNC patients.	Low	Strong
BALERMPAS P, VAN TIMMEREN JE, KNIERIM DJ, GUCKENBERGER M, CIERNIK IF. Dental extraction, intensity-modulated radiotherapy of head and neck cancer, and osteoradionecrosis. Strahlentherapie	pre-radiotherapy (RT) dental care and extractions remain the standard procedure to prevent dental complications from IMRT. Having extractions prior to IMRT was associated with ORN development less often than having extractions after IMRT.	Moderate	Strong

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und Onkologie. 2022 Mar 14;198(3):219–28. 10.1007/s00066-021-01896-w			
HACKETT S, EL-WAZANI B, BUTTERWORTH C. Zygomatic implant-based rehabilitation for patients with maxillary and mid-facial oncology defects: A review. Oral Dis. 2021 Jan 5;27(1):27–41. 10.1111/odi.13305	Zygomatic implants provide remote anchorage for a variety of oral and facial prostheses that contribute to the improved function and quality of life for patients being treated for maxillary and mid-facial tumours.	Moderate	Strong
MOORE C, MCLISTER C, CARDWELL C, O'NEILL C, DONNELLY M, MCKENNA G. Dental caries following radiotherapy for head and neck cancer: A systematic review. Oral Oncol. 2020 Jan;100:104484. 10.1016/j.oraloncology.2019.104484	1. The incidence of dental caries in post-radiotherapy HANC patients is approximately 29%. 2. The incidence of caries in HANC patients within two years of radiotherapy is approximately 37%. 3. A moderate association between CT (in addition to RT) and an increased risk of caries was found. 4. No association was found between caries rate and fluoride regime, site of tumour, gender, age or stimulated saliva flow rate. 5. Head and neck radio-therapy patients should receive intensive oral hygiene instruction and dietary advice, and be recalled at regular intervals during and after treatment, to prevent the onset	Moderate	Strong

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
	of tooth decay, to reduce the need for post-radiotherapy tooth extractions,		
NORMANDO AGC, PÉREZ-DE-OLIVEIRA ME, GUERRA ENS, LOPES MA, ROCHA AC, BRANDÃO TB, et al. To extract or not extract teeth prior to head and neck radiotherapy? A systematic review and meta-analysis. Supportive Care in Cancer. 2022 Nov 17;30(11):8745–59. 10.1007/s00520-022-07215-y	Extracting compromised teeth prior to head and neck radiotherapy is associated with a lower risk of developing ORN compared to performing dental extractions after or during RT, with a moderate certainty of evidence.	Moderate	Strong
PALMIER NR, MADRID TROCONIS CC, NORMANDO AGC, GUERRA ENS, ARAÚJO ALD, ARBOLEDA LPA, et al. Impact of head and neck radiotherapy on the longevity of dental adhesive restorations: A systematic review and meta-analysis. J Prosthet Dent. 2022 Nov;128(5):886–96. 10.1016/j.prosdent.2021.02.002	Composite resin restorations together with fluoride gel applications may be the optimal restorative treatment for patients who have received head and neck radiotherapy and are affected by radiation-related caries.	Moderate	Strong
SHOKOUHI B, CERAJEWSKA T. Radiotherapy and the survival of dental implants: a systematic review. British Journal of Oral and	1. Implant-based rehabilitation is a viable treatment with favourable survival rates in irradiated head and neck cancer patients.	Moderate	Weak

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
Maxillofacial Surgery. 2022 May;60(4):422–9. 10.1016/j.bjoms.2021.09.006	2. Implant survival is significantly lower in irradiated compared with non-irradiated patients. 3. Radiation doses over 50 Gy are associated with lower implant survival rates. 4. Implant placement should be delayed by at least six months following irradiation, although in selected cases primary placement may be favourable with good planning. 5. Implant survival is signicantly higher in the mandible than in the maxilla (p = 0.04). 6. There are common side-effects of radiotherapy that are not amenable to improvement with implant-based rehabilitation, including xerostomia and limited mouth opening.		
BEECH NM, PORCEDDU S, BATSTONE MD. Radiotherapy-associated dental extractions and osteoradionecrosis. Head Neck. 2017 Jan 30;39(1):128–32. 10.11607/ijp.6001	Pre-RT dental extractions do not appear to protect against ORN. With improved prevention methods and dose limiting technology, the chances of long-term tooth retention are greatly improved.	Low	Weak
BRENNAN MT, TREISTER NS, SOLLECITO TP, SCHMIDT BL, PATTON LL, LIN A, et al. Dental	Increased caries is a complication soon after RT in HNC. Fluoride, oral hygiene, dental insurance, and education level had	Low	Strong

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Caries Postradiotherapy in Head and Neck Cancer. JDR Clin Trans Res. 2023 Jul;8(3):234–43. 10.1177/23800844221086563	the strongest association with caries increment after radiotherapy to the head and neck region. Thus, intensive oral hygiene measures, including fluoride and greater accessibility of dental care, may contribute to reducing the caries burden after RT in HNC.		
BRESLIN M, TAYLOR C. Incidence of new carious lesions and tooth loss in head and neck cancer patients: a retrospective case series from a single unit. Br Dent J. 2020 Oct 23;229(8):539–43. 10.1038/s41415-020-2222-2	Development of caries and extraction was a very common event. There is a need for further research into the efficacy of topical prevention regimes.	Low	Weak

Oral Medicine Workstream

Article	**Summary of Findings**	**Certainty of evidence (GRADE system)**	**Recommendation (GRADE system)**
Elad S, Ranna V, Ariyawardana A, Correa ME, Tilly V, Nair RG, Rouleau T, Logan RM, Pinto A, Charette V, Saunders DP, Jensen SB; Viral Infections Section, Oral Care Study Group, Multinational Association of Supportive Care in Cancer (MASCC)/International Society of Oral Oncology (ISOO). A systematic review of oral herpetic viral infections in cancer patients: commonly used outcome measures and interventions. Support Care Cancer. 2017 Feb;25(2):687-700. DOI: 10.1007/s00520-016-3477-7	Oral and intravenous acyclovir are efficacious safe in treating oral herpetic infection post CT or HSCT, based on clinical and/or laboratory measures. More limited evidence for valacyclovir. Acyclovir and valacyclovir are equally efficacious and safe in preventing frequency or reduce symptomatology of herpes simplex virus reactivation post CT and HSCT. Valacyclovir demonstrated better cost-effectiveness.	Moderate Low	Weak Strong
Stemler J, de Jonge N, Skoetz N, Sinkó J, Brüggemann RJ, Busca A, Ben-Ami R, Ráčil Z, Piechotta V, Lewis R, Cornely OA. Antifungal prophylaxis in adult patients with acute myeloid leukaemia treated with novel targeted therapies: a systematic review and expert consensus recommendation from the European Hematology Association. Lancet Haematol. 2022 May;9(5):e361-e373. doi: 10.1016/S2352-3026(22)00073-4.	There is uncertainty of the need of antifungal prophylaxis following novel treatments (ivosidenib, lestaurtinib, quizartinib, and venetoclax) for acute myeloid leukaemia for adults. The recommendation is individual and conditional only for cases in combination with CT, showing relapsing or refractory infection present.	Very low	Weak

Erratum in: Lancet Haematol. 2022 Jun;9(6):e398.			
Ramirez-Carmona W, Fernandes GLP, Diaz-Fabregat B, Oliveira EC, do Prado RL, Pessan JP & Monteiro DR. Effectiveness of fluconazole as antifungal prophylaxis in cancer patients undergoing chemotherapy, radiotherapy, or immunotherapy: systematic review and meta-analysis. *APMIS* 2023, *131*(11), 668-684. DOI: 10.1111/apm.13324	Prophylactic fluconazole following cancer treatment (CT, RT or immunotherapy) was efficacy in comparison to no treatment or to Amphotericin B & Nystatin (combined or isolated). No difference in prophylactic efficacy or mortality rate compared to nystatin/miconazole, itraconazole and clotrimazole.	Low	Strong
Heggie C, Gray-Burrows KA, Day PF, Phillips B. An exploration of the use of photobiomodulation for management of oral mucositis in children and young people undergoing cancer treatment in the UK. Support Care Cancer. 2022 Dec;30(12):10179-10190. DOI: 10.1007/s00520-022-07450-3	Survey of treatment centres in the UK for children and young people identified more barriers than facilitators in using PBM, including lack of awareness, resources, training, environmental context, and patient acceptability.	Very low	Weak
Zadik Y, Arany PR, Fregnani ER, Bossi P, Antunes HS, Bensadoun RJ, Gueiros LA, Majorana A, Nair RG, Ranna V, Tissing WJE, Vaddi A, Lubart R, Migliorati CA, Lalla RV, Cheng KKF, Elad S (2019) Systematic review of photobiomodulation for the management of oral mucositis in cancer patients and clinical practice guidelines. Support Care Cancer 27:3969–3983. DOI: 10.1007/s00520-019-04890-2	Intra-oral photobiomodulation therapy with low-level laser therapy showed benefit in preventing oral mucositis in adults undergoing HSCT with high-dose CT, RT to the H&N, or combined RT and CT, following specific protocol parameters for optimal therapy.	Moderate	Strong

Villa A, Vollemans M, De Moraes A, Sonis S. Concordance of the WHO, RTOG, and CTCAE v4.0 grading scales for the evaluation of oral mucositis associated with chemoradiation therapy for the treatment of oral and oropharyngeal cancers. Support Care Cancer. 2021 Oct;29(10):6061-6068. DOI: 10.1007/s00520-021-06177-x	The World Health Organization (WHO) has a grading scale for oral mucositis that measures its severity. The scale is based on both subjective and objective measures	Moderate	Strong
National Institute of Health and Care Excellence (NICE). Low-level laser therapy for preventing of treating oral mucositis caused by radiotherapy or chemotherapy. Published 23 May 2018. https://www.nice.org.uk/guidance/ipg615. Accessed date 5th March 2025.	Evidence on utilising low-level laser therapy for treating or preventing oral mucositis post RT, CT or HSCT has adequate efficacy and safety. Evidence summarised from haematological conditions, H&N and breast cancer and multiple myeloma.	Moderate	Strong
He M, Zhang B, Shen N, Wu N, Sun J. 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. Eur J Pediatr. 2018 Jan;177(1):7-17. DOI: 10.1007/s00431-017-3043-4	Evidence summary showed benefit of utilising low-level laser therapy for the prevention and management of oral mucositis in paediatric and young patients with cancer or undergoing HSCT. Improvement of risk, severity and pain reported.	Moderate	Strong
Robijns J, Nair RG, Lodewijckx J, Arany P, Barasch A, Bjordal JM, Bossi P, Chilles A, Corby PM, Epstein JB, Elad S, Fekrazad R, Fregnani ER, Genot MT, Ibarra AMC,	Evidence summary from world multidisciplinary team on the beneficial use of low-level laser therapy in preventing oral mucositis	Moderate	Strong

Hamblin MR, Heiskanen V, Hu K, Klastersky J, Lalla R, Latifian S, Maiya A, Mebis J, Migliorati CA, Milstein DMJ, Murphy B, Raber-Durlacher JE, Roseboom HJ, Sonis S, Treister N, Zadik Y, Bensadoun RJ. Photobiomodulation therapy in management of cancer therapy-induced side effects: WALT position paper 2022. Front Oncol. 2022 Aug 30; 12:927685. DOI: 10.3389/fonc.2022.927685	in adult patients undergoing RT, CT or HSCT for head and neck cancer treatment.		
Elad S, Cheng KKF, Lalla RV, Yarom N, Hong C, Logan RM, Bowen J, Gibson R, Saunders DP, Zadik Y, Ariyawardana A, Correa ME, Ranna V, Bossi P; Mucositis Guidelines Leadership Group of the Multinational Association of Supportive Care in Cancer and International Society of Oral Oncology (MASCC/ISOO). MASCC/ISOO clinical practice guidelines for the management of mucositis secondary to cancer therapy. Cancer. 2020 Oct 1;126(19):4423-4431. DOI: 10.1002/cncr.33100 Erratum in: Cancer. 2021 Oct 1;127(19):3700.	Updated clinical guidelines for OM interventions by the international group of oral oncology and supportive care of cancer. New recommendations include the use of multiagent combination, cryotherapy and intravenous growth factor KGF-1 to prevent OM during RT, CT or HSCT. Topical morphine mouthwash was also recommended for treatment of post-CT and RT OM symptoms. In contrast, patient education and use of chlorhexidine, glutamine, chewing gum, topical GM-CSF and saline/sodium bicarbonate rinses showed no strong evidence in OM prevention. The latter however may	High	Strong

	still help maintaining oral health and comfort in this cohort.		
Hong CHL, Gueiros LA, Fulton JS, Cheng KKF, Kandwal A, Galiti D, Fall-Dickson JM, Johansen J, Ameringer S, Kataoka T, Weikel D, Eilers J, Ranna V, Vaddi A, Lalla RV, Bossi P, Elad S; Mucositis Study Group of the Multinational Association of Supportive Care in Cancer/International Society for Oral Oncology (MASCC/ISOO). Systematic review of basic oral care for the management of oral mucositis in cancer patients and clinical practice guidelines. DOI: 10.1007/s00520-019-04848-4 Support Care Cancer. 2019 Oct;27(10):3949-3967.	Review of 2013 guidelines reported evidence supportive use of multi-agent combination oral care protocols for managing and preventing oral mucositis in children, following cancer treatments with RT and HSCT. This includes a varied oral hygiene approach by non-professional interventions on preventing oral mucositis via increasing awareness of patients and staff. All other interventions had limited and uncertain data, including professional care, saline, sodium bicarbonate and patient education. The use of chlorhexidine was not recommended to prevent oral mucositis due to evolving concept of microbial symbiosis being more important than eradication.	Moderate	Strong
Yarom N, Hovan A, Bossi P, Ariyawardana A, Jensen SB, Gobbo M, Saca-Hazboun H, Kandwal A, Majorana A, Ottaviani G, Pentenero M, Nasr NM, Rouleau T, Lucas AS, Treister NS, Zur E, Ranna V, Vaddi A, Cheng KKF, Barasch A, Lalla RV, Elad S; Mucositis Study Group of the Multinational Association of Supportive Care in Cancer / International Society of Oral Oncology	Revised recommendation against the use of parenteral glutamine for the prevention of OM in hematopoietic stem cell transplantation (HSCT) due to ineffectiveness and higher mortality rate. Suggestion with caution of use of oral glutamine in preventing oral	Low	Weak

(MASCC/ISOO). 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. Support Care Cancer. 2019 Oct;27(10):3997-4010. DOI: 10.1007/s00520-019-04887-x Erratum in: Support Care Cancer. 2021 Jul;29(7):4175-4176.	mucositis post radiotherapy and chemotherapy of treatment of head and neck cancer. Insufficient evidence of effectiveness of Zinc and calcium phosphate rinse in preventing oral mucositis following all post-cancer therapies.		
Yarom N, Hovan A, Bossi P, Ariyawardana A, Jensen SB, Gobbo M, Saca-Hazboun H, Kandwal A, Majorana A, Ottaviani G, Pentenero M, Nasr NM, Rouleau T, Lucas AS, Treister NS, Zur E, Ranna V, Vaddi A, Barasch A, Lalla RV, Cheng KKF, Elad S; Mucositis Study Group of the Multinational Association of Supportive Care in Cancer / International Society of Oral Oncology (MASCC/ISOO). Systematic review of natural and miscellaneous agents, for the management of oral mucositis in cancer patients and clinical practice guidelines - part 2: honey, herbal compounds, saliva stimulants, probiotics, and miscellaneous agents. Support Care Cancer. 2020 May;28(5):2457-2472. DOI: 10.1007/s00520-019-05256-4	Update from previous guidelines of 2014 with new recommendations against chewing gum and systemic or topical honey. All interventions had very limited evidence and unable to conclude guidance, including additional herbal compounds (such as curcumin, chamomile, clove-based mouthwash, propolis), probiotics and saliva stimulants (electric stimulation, chewing gum, humidification and N-acetil-cysteine).	Very low	Weak
Saunders DP, Rouleau T, Cheng K, Yarom N, Kandwal A, Joy J, Bektas Kayhan K, van de Wetering M, Brito-Dellan N, Kataoka T, Chiang K, Ranna V, Vaddi A, Epstein J, Lalla RV, Bossi P, Elad S;	Update from 2014 guidelines with recommendation against the use of a mucosal coating agent (sucralfate-combined systemic and topical formulation) in the prevention of oral	Low	Weak

Mucositis Study Group of the Multinational Association of Supportive Care in Cancer/International Society of Oral Oncology (MASCC/ISOO). Systematic review of antimicrobials, mucosal coating agents, anaesthetics, and analgesics for the management of oral mucositis in cancer patients and clinical practice guidelines. Support Care Cancer. 2020 May;28(5):2473-2484. DOI: 10.1007/s00520-019-05181-6	mucositis post-chemotherapy and RT for H&N and solid cancer treatment. New evidence resulted in reversion of recommendation of using doxepin and topical fentanyl for the treatment of mucositis-associated pain in H&N and haematological cancer patients. New suggestion for use of topical morphine in treatment of oral mucositis post-chemotherapy and radiotherapy of H&N cancer.		
Correa MEP, Cheng KKF, Chiang K, Kandwal A, Loprinzi CL, Mori T, Potting C, Rouleau T, Toro JJ, Ranna V, Vaddi A, Peterson DE, Bossi P, Lalla RV, Elad S. Systematic review of oral cryotherapy for the management of oral mucositis in cancer patients and clinical practice guidelines. Support Care Cancer. 2020 May;28(5):2449-2456. DOI: 10.1007/s00520-019-05217-x	Review of 2013 guidelines reported upgrading the recommendation of utilising oral cryotherapy to prevent oral mucositis in 2 clinical settings only - autologous HSCT with high-dose melphalan or bolus 5-FU chemotherapy for solid cancer. Limited evidence for radiotherapy or non-FU modalities.	Moderate	Weak
Nathan CO, Asarkar AA, Entezami P, Corry J, Strojan P, Poorten VV, Makitie A, Eisbruch A, Robbins KT, Smee R, St John M, Chiesa-Estomba C, Winter SC, Beitler JJ, Ferlito A. Current management of xerostomia in head and neck cancer patients. Am J Otolaryngol. 2023 Jul-Aug;44(4):103867. DOI: 10.1016/j.amjoto.2023.103867	Uncertain and heterogenic evidence of pharmacological, non-pharmacological and surgical strategies to manage xerostomia following radiotherapy. These include surgical salivary gland reposition, botulin toxin, acupuncture, electrical nerve stimulation, hyperbaric oxygen	Very low	Weak

	treatment, gene therapy, xylitol products, pilocarpine and amifostine.		
Moral Nakamura D, da Graça Pinto H, Baena Elchin C, Thomazotti Berard L, Abreu Alves F, Azeredo Alves Antunes L, Pena Coto N. Efficacy of bethanechol chloride in the treatment of radiation-induced xerostomia in patients with head and neck cancer: A systematic review and meta-analysis. Radiother. Oncol. 2023 Sep;186:109715. DOI: 10.1016/j.radonc.2023.109715	Limited evidence of systemic use of sialagogue bethanechol chloride in improving salivary flow rate and xerostomic symptoms post-radiotherapy.	Low	Weak
Salimi F, Saavedra F, Andrews B, FitzGerald J, Winter SC. Trans-cutaneous electrical nerve stimulation to treat dry mouth (xerostomia) following radiotherapy for head and neck cancer. A systematic review. Annals of Medicine and Surgery. 2021 Mar 1;63. DOI: 10.1016/j.amsu.2021.01.094	Limited and heterogenic evidence of utilising electrical nerve stimulation to manage hyposalivation post-radiotherapy.	Low	Weak
Mercadante V, Jensen SB, Smith DK, Bohlke K, Bauman J, Brennan MT, Coppes RP, Jessen N, Malhotra NK, Murphy B, Rosenthal DI. Salivary gland hypofunction and/or xerostomia induced by nonsurgical cancer therapies: ISOO/MASCC/ASCO guideline. Journal of Clinical Oncology. 2021 Sep 1;39(25):2825-43. DOI: 10.1200/JCO.21.01208	Tissue sparing radiation modality (intensity-modulated radiation therapy) and acupuncture showed moderate to high effectiveness in preventing hyposalivation and xerostomia. Treatment effectiveness in turn was moderate for saliva substitutes and gustatory and masticatory salivary reflex stimulation, and high for oral pilocarpine and cevimeline.	Moderate	Strong

Khamdi S, Matangkasombut O, Lam-Ubol A. Non-pharmacologic interventions for management of radiation-induced dry mouth: A systematic review. Oral Diseases 2024 Jul;30(5):2876-2893. DOI: 10.1111/odi.14804	Certain artificial saliva products and chewing gum improved xerostomia post-radiotherapy with moderate evidence. Adipose tissue derived stem cell therapy showed improvement of objective and subjective measures, although short follow up time. Electrical stimulation, acupuncture, laser radiation and probiotic lozenges showed no efficacy in either measures between comparator groups.	Moderate	Weak
Cohen L, Danhauer SC, Garcia MK, et al. Acupuncture for Chronic Radiation-Induced Xerostomia in Head and Neck Cancer: A Multicenter Randomized Clinical Trial. JAMA netw. open. 2024;7(5): e2410421. DOI: 10.1001/jamanetworkopen.2024.10421	Reduction of post-radiotherapy subjective dry mouth measure in patients receiving acupuncture compared to sham and basic control group. Well-designed clinical trial however high confidence intervals and short follow up time.	High	Weak
Ribeiro LN, de Vasconcelos Carvalho M, de Oliveira Limirio JPJ, do Egito Vasconcelos BC, Moraes SLD, Pellizzer EP. Impact of low-level laser therapy on the quality of life of patients with xerostomia undergoing head and neck radiotherapy: a systematic review. Support Care Cancer. 2024;32(2):118. DOI: 10.1007/s00520-024-08325-5	Limited evidence of impact of low-level laser therapy for post-radiotherapy xerostomia in quality of life and insufficient evidence in improving objective salivary flow measure.	Very low	Weak

Choo J, Ashar A, Hussaini HM, Rajandram RK, Nordin R. Efficacy of natural enzymes mouthwash: a randomised controlled trial. Clin Oral Investig. 2024;28(5):259. DOI: 10.1007/s00784-024-05658-7	Clinical trial of a natural enzyme mouthwash compared to sham control of analgesic preparation was well-tolerated and safe. However, it showed insufficient benefit on subjective dry mouth symptoms and high variability and non-clinically significant improvement of salivary flow measures with short term follow up.	Low	Weak
Rupe C, Basco A, Gioco G, et al. Sodium-hyaluronate mouthwash on radiotherapy-induced xerostomia: a randomised clinical trial. Support Care Cancer.2023;31(12):644. DOI: 10.1007/s00520-023-08090-x	Sodium-hyaluronate mouthwash was compared to placebo in double blind crossover trial. Outcomes of subjective dry mouth scale, quality of life and patient satisfaction showed imprecise data and limited efficacy.	Low	Weak
Chellappan S. Smoking Cessation after Cancer Diagnosis and Enhanced Therapy Response: Mechanisms and Significance. Curr Oncol. 2022 Dec 17;29(12):9956-9969. DOI: 10.3390/curroncol29120782	Descriptive review reported smoking cessation at time of cancer diagnosis showed higher overall survival to treatment (RT, CT, immunotherapy) and enhanced side effects compared to those who continued smoking.	Low	Weak
Park ER, Perez GK, Regan S, Muzikansky A, Levy DE, Temel JS, Rigotti NA, Pirl WF, Irwin KE, Partridge AH, Cooley ME, Friedman ER, Rabin J, Ponzani C, Hyland KA, Holland S, Borderud S, Sprunck K, Kwon D, Peterson L, Miller-Sobel J, Gonzalez I, Whitlock CW, Malloy L, de León-Sanchez S, O'Brien M, Ostroff JS. Effect of Sustained Smoking Cessation	Sustained 6-month cessation counselling and free medication increased the likelihood of smoking abstinence compared to control group of short-term cessation counselling and medication advice.	High	Strong

Counseling and Provision of Medication vs Shorter-term Counseling and Medication Advice on Smoking Abstinence in Patients Recently Diagnosed With Cancer: A Randomized Clinical Trial. JAMA. 2020 Oct 13;324(14):1406-1418. DOI: 10.1001/jama.2020.14581			
National Institute for Health and Care Excellence. Tobacco: treating dependence Quality standard [QS207]. Published: 15 December 2022. https://www.nice.org.uk/guidance/qs207. Accessed 27th Feb 2025.	The standard covers support and treatment of smoking cessation and stop smokeless tobacco use and harm-reduction approach. It identifies dental appointments as the key contact and processes of identifying and support patients.	High	Strong
Piperi E, Papadopoulou E, Georgaki M, Dovrat S, Bar Illan M, Nikitakis NG, Yarom N. Management of oral herpes simplex virus infections: The problem of resistance. A narrative review. Oral Dis. 2023 Jun 6. DOI: 10.1111/odi.14635	Descriptive review of effective treatments for herpes simplex virus infections, including for immunocompromised patients. Acyclovir and derivatives are reported gold standard for prevention & treatment. For acyclovir resistance, cidofovir and foscarnet are alternatives to consider.	Very low	Weak
Gopinath D, Koe KH, Maharajan MK, Panda S. A Comprehensive Overview of Epidemiology, Pathogenesis and the Management of Herpes Labialis. Viruses. 2023 Jan 13;15(1):225. DOI: 10.3390/v15010225	Descriptive review of epidemiology, mechanisms, clinical features and treatments for herpes labialis. Treatment options include cryotherapy, lip moisturizers / barriers, low-level laser therapy and antivirals (acyclovir and valacyclovir) with variable efficacy in treating infection and reactivation. Lifestyle	Very low	Weak

	modifications are supported in mitigating potential factors of reactivation. Limited evidence for supplements (L-lysine, zinc, vitamin D, low arginine diet, probiotics), levamisole, penciclovir, famciclovir, foscarnet.		
Aribi Al-Zoobaee FW, Yee Shen L, Veettil SK, Gopinath D, Maharajan MK, Menon RK. Antiviral Agents for the Prevention and Treatment of Herpes Simplex Virus Type-1 Infection in Clinical Oncology: A Network Meta-Analysis. Int J Environ Res Public Health. 2020 Nov 30;17(23):8891. DOI: 10.3390/ijerph17238891	Acyclovir and valacyclovir lower the risk of oral herpetic lesions compared to the placebo control group, with no notable difference between their efficacies. Oral and IV administration of acyclovir were compared, however showing very uncertain results.	High	Strong
Henze, L., Buhl, C., Sandherr, M. *et al.* Management of herpesvirus reactivations in patients with solid tumours and hematologic malignancies: update of the Guidelines of the Infectious Diseases Working Party (AGIHO) of the German Society for Hematology and Medical Oncology (DGHO) on herpes simplex virus type 1, herpes simplex virus type 2, and varicella zoster virus. Ann Hematol 2022: 101, 491–511. DOI: 10.1007/s00277-021-04746-y	Oral acyclovir is the preferred option for preventing VZV reactivation, or IV acyclovir available when oral administration is not possible. Limited evidence to confirm the efficacy of valacyclovir and to determine the best IV dosing strategy.	High	Strong
Shao CH, Chiang CC, Huang TW. Exercise therapy for cancer treatment-induced trismus in patients with head and neck cancer: A systematic review and meta-analysis of randomized controlled trials.	Exercise therapy can help improve maximum interincisal opening (MIO) in patients who develop cancer treatment-induced trismus. However, it does not appear to prevent trismus	High	Strong

Radiother Oncol. 2020 Oct;151:249-255. DOI: 10.1016/j.radonc.2020.08.024	in individuals undergoing treatment for head and neck cancer.		
Chee S, Byrnes YM, Chorath KT, Rajasekaran K, Deng J. Interventions for Trismus in Head and Neck Cancer Patients: A Systematic Review of Randomized Controlled Trials. Integr Cancer Ther. 2021 Jan-Dec; 20:15347354211006474. DOI: 10.1177/15347354211006474	Different exercise routines and jaw rehabilitation devices seem to deliver similar results in terms of efficacy in treating post-cancer trismus.	High	Strong

Hygiene & Therapy + Prevention Workstream

Study	Summary of Findings	Certainty of Evidence (GRADE System)	Recommendation (GRADE system)
AGARWAL, D., PUROHIT, B., RAVI, P., PRIYA, H. and KUMAR, V., 2022. Effectiveness of topical fluorides in prevention of radiation caries in adults: A systematic review and meta- analysis. *Oral oncology,* 129, pp. 105869.	Systematic review of 9x RCTs and 5 non-RCTs on topical fluorides effectiveness to prevent radiation caries in HNC patients. A meta-analysis of studies found no significant mean difference -1.4 (-4.53-1.74) in the effectiveness of sodium fluoride and other fluoride formulations. There was not a significant difference in the effectiveness of fluoride application (p=0.85). Different formulations of fluoride were effective in controlling caries up to 70%. Topical fluorides used in a variety of ways may reduce the risk of radiation caries, however, the concentrations, dose, mode and frequency all vary with no difference in effectiveness.	Moderate	Strong
LANZETTI, J., FINOTTI, F., SAVARINO, M., GASSINO, G., DELL'ACQUA, A. and EROVIGNI, F.M., 2023. Management of Oral Hygiene in Head-Neck Cancer Patients Undergoing Oncological Surgery and Radiotherapy: A Systematic Review. *Dentistry journal,* 11(3), pp. 83.	Systematic review of 5 studies, 2 RCTs and 3 observational. No effect sizes reported. Preventive home care can be supported through regular visits throughout treatment starting before therapy commences. No clear way protocol for preventive care beyond usual high-risk pathways. CPPACP + Fluoride can reduce caries progression.	Very low	Weak

	Fluoride placed for prevention can reduce plaque and bleeding.		
LUKA, B., FIEDLER, A., GANSS, C., SOETEDJO, V., VACH, K. and SCHLUETER, N., 2024. PREVENTING CARIES AFTER RADIOTHERAPY TO THE HEAD AND NECK REGION - A SYSTEMATIC REVIEW. *The journal of evidence-based dental practice,* 24(3), pp. 101989.	Systematic review of 5 RCT's n=355 Caries increased by 0.48 Decayed Missing Filled Surfaces and 9.2 Decayed Filled Surfaces No meta-analysis. Fluoride application is more likely to prevent caries after radiotherapy compared to no fluoride use.	Moderate	Moderate
HYE-JU LEE, DONG-HUN HAN, JIN-HO KIM, HONG-GYUN WU, LEE, H., HAN, D., KIM, J. and WU, H., 2021. The effect of comprehensive oral care program on oral health and quality of life in patients undergoing radiotherapy for head and neck cancer: A quasi-experimental case-control study. *Medicine,* 100(16), pp. 1–7.	Quasi-experimental study, n=61 (31 in experimental). Found significant difference in caries rate, BOP and plaque scores (all lower). No significant difference in quality of life. Comprehensive oral care (4 sessions with hygienist of OHI, Fluoride varnish, 0.05% fluoride rinse) before, during and after might prevent dental caries and increase quality of life compared to OHI alone up to 6 months post therapy.	Low	Weak
SOHN, H., LEE, E., PARK, E., JUNG, Y. and KIM, E., 2018. Effects of professional oral hygiene care in patients with head-and-neck cancer during radiotherapy: A randomized clinical trial. *Indian Journal of*	Non-randomised controlled clinical trial, n = 68 with 39 dropouts at end of follow up. Findings included no significant difference in DMT, plaque and gingival scores. Plaque did decrease. Periodontal pockets decreased in both groups (significantly in vulnerable 3.667, p = 0.008).	Very low	Weak

Dental Research, 29(6), pp. 700–704.	Intensive oral care including 3/12 visits for scaling, advice and 5% fluoride varnish pre, during and post may reduce periodontal pocket depths up to 12 months post radiation therapy supported with decreases in plaque indices but not gingival indices.		
MORAIS, M.O., ELIAS, M.R.A., LELES, C.R., DOURADO PINEZI, J.C. and MENDONÇA, E.F., 2016. The effect of preventive oral care on treatment outcomes of a cohort of oral cancer patients. *Supportive Care in Cancer,* 24(4), pp. 1663–1670.	Retrospective case study, no control, n =133. Findings of x2 = 10.66, p = 0.005 for survival rate associated with adherence to preventive care. 3.7% of patients (3/81) didn't interrupt RT and only 1 of those adhered to oral prevention measures. Adherence to oral care prevention measures is associated with improved treatment outcomes at 6 months post therapy.	Very low	Weak
BHANDARI, S., WADHWA SONI, B., GUPTA, A. and GHOSHAL, S., 2023. Time required for prophylactic oral care in head and neck cancer patients scheduled for radiotherapy: A single center, prospective cohort study. *Head & neck,* 45(4), pp. 913–920.	Observational study case series, n=333 Estimates oral treatment time prior to radiotherapy to be 21 days +/- 6.2 from 1 centre undergoing a very intensive prevention program.	Low	Weak
CHANG, C.T., LIU, S.P., MUO, C.H., TSAI, C.H. and HUANG, Y.F., 2017. Dental Prophylaxis and Osteoradionecrosis: A Population-	Observational study, retrospective. Hazard ratio of 1.28 (1.03-1.60) indicating increased risk of ORN when scaling within 2 weeks prior to radiotherapy compared to not. Hazard ratio of 2.66 (2.32-3.05)	Very low	Weak

Based Study. *Journal of dental research,* 96(5), pp. 531–538.	indicating increased risk of ORN when using chlorhexidine mouthrise compared to not. There might be an association between ORN and chx use and dental scaling within 2 weeks. The direction of association is not known as it is correlation not causation.		
MORAIS, M.O., MARTINS, A.F.L., DE JESUS, A.P.G., DE SOUSA NETO, S.S., DA COSTA, A.W.F., PEREIRA, C.H., OTON-LEITE, A., DE FREITAS, N.M.A., LELES, C.R. and MENDONÇA, E.F., 2020. A prospective study on oral adverse effects in head and neck cancer patients submitted to a preventive oral care protocol. *Supportive Care in Cancer,* 28(9), pp. 4263–4273.	Observation study, case series, n=61. Combined oral health assessment scores significantly improved at follow up. Plaque scores significantly improved. Ora health related quality of life reduced during treatment. Details of preventive care regime not specific enough to draw sound conclusions.	Very low	Weak
FRYDRYCH, A.M., SLACK-SMITH, L. and PARSONS, R., 2017. Compliance of post-radiation therapy head and neck cancer patients with caries preventive protocols. *Australian Dental Journal,* 62(2), pp. 192–199.	Observational study, retrospective case series, n=116. 75.9% complied with all caries preventive measures over mean follow up of 45 months Non-compliance was significantly associated with dental caries and: - regular dental attendance p=0.0041, - OHI p=0.0087, - dietary advice p=0.0339 and - daily fluoride p=0.0183 Dental caries at time of cancer diagnosis was a predictor of lower compliance.	Low	Weak

	Association with adherence to preventive care and caries. Included fluoride in intervention.		
KATSURA, K., SOGA, M., ABE, E., MATSUYAMA, H., AOYAMA, H. and HAYASHI, T., 2016. Effects of casein phosphopeptide-amorphous calcium phosphate with sodium fluoride on root surface conditions in head and neck radiotherapy patients. *Oral Radiology,* 32(2), pp. 105–110.	Non-randomised clinical study, n=32 Mean difference of 49% (p = 0.038) for difference in soft lesions incidence per patient at 6/12 and 54.7% (p=0.029) at 12 months 10% CPP-ACP in conjunction with preventive care including fluoride is associated with reduced incidence of root caries post radiation up to 12 months. The direction of association is not known as it is correlation not causation.	Very low	Weak
SIM, C., WALKER, G.D., MANTON, D.J., SOONG, Y.L., WEE, J., ADAMS, G.G. and REYNOLDS, E.C., 2019. Anticariogenic efficacy of a saliva biomimetic in head-and-neck cancer patients undergoing radiotherapy. *Australian Dental Journal,* 64(1), pp. 47–54.	Double-blind randomised controlled study, n = 24 Findings show 51% reduction in total coronal caries progression (p=<0.05) in Cpp-acp group compared to fluoride alone. salivary flow rate significantly reduced (p=<0.001) post radiation therapy for both groups. 10 % CPP-ACP in conjunction with fluoride and preventive care may reduce incidence of coronal caries post radiation up to 3 months.	Low	Weak
SOUTOME, S., YANAMOTO, S., FUNAHARA, M., KAWASHITA, Y., YOSHIMATSU, M., MURATA, M., SAITO, T. and UMEDA, M., 2020. Prevention of dental caries by regular overnight application of a	Case series, n = 13 No new caries detected in any cases for 1 year. Wearing low dose (0.15%) fluoride gel daily at night in a tray might reduce risk of new carious lesions up to 1 year - more research required.	Very low	Weak

low-concentration fluoride gel loaded in a custom tray in patients undergoing radiotherapy for head and neck cancer: A preliminary study. *Indian Journal of Dental Research,* 31(6), pp. 963–966.			
MOORE, C., DONNELLY, M., SEMPLE, C., O'NEILL, C. and MCKENNA, G., 2023. Compliance with oral hygiene and dietary advice for the prevention of post-radiotherapy dental disease among head and neck cancer patients - a qualitative study. *Journal of dentistry,* 138, pp. 104720.	Semi-structured interviews, n = 12/22. Presents the patients perspective retrospectively in an established cancer care unit including the whole journey, pre, during and post therapy. It highlights importance of adapting oral care advice to individual needs and experiences. Themes identified OH viewed as important for overall physical and mental health post treatment, OH and diet advice inconsistent, impacts of oncology treatment, non-compliance to OH was associated with oral mucositis, forgotten or inconsistent OH advice, inadequate supply of preventive OH items a burning sensation associated with high fluoride toothpaste use.	Moderate	Weak
ABED, H., REILLY, D., BURKE, M. and DALY, B., 2019. Patients with head and neck cancers' oral health knowledge, oral health-related quality of life, oral health status, and adherence to advice on discharge to primary dental care: A prospective observational study. *Special care in dentistry : official*	Observational study – case series, no control, n=30 100% using prescribed high fluoride toothpaste daily. Most felt received insufficient knowledge of side effects and impacts on OH and maintaining OH post therapy. Adherence to preventive measures is possible with support. Consider value in repeated discussions about side effects and	Very low	Weak

publication of the American Association of Hospital Dentists, the Academy of Dentistry for the Handicapped, and the American Society for Geriatric Dentistry, 39(6), pp. 593–602.	impacts of radiotherapy on oral health and how patients can maintain this.		
ABED, H., BURKE, M., FENLON, M.R., SCAMBLER, S. and SCOTT, S.E., 2020. Use of dentures, receipt of information, quality of life, and oral function following radiotherapy for head and neck cancer. *Special Care in Dentistry,* 40(5), pp. 475–487.	Cross-sectional survey from patient perspective (n=80/332) found a high compliance with leaning and majority wore daily. 29% dissatisfied with dentures. Side effects included difficulty eating, loose fit, biting cheek and broken denture. Majority of those who had not replaced teeth were interested to do so. Main reason not done was advised against due to anticipated problems. No significance difference between quality of life and oral functioning between denture users and not. Those with dentures reported higher scores for daily functioning although not significant.	Very low	Weak

Oral Surgery Workstream

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
Beaumont, S., Bhatia, N., McDowell, L., Fua, T., McCullough, M., Celentano, A. and Yap, T., 2021. Timing of dental extractions in patients undergoing radiotherapy and the incidence of osteoradionecrosis: a systematic review and meta-analysis. British Journal of Oral and Maxillofacial Surgery, 59(5), pp.511-523.	Non-functional teeth or those with a poor prognosis within the radiotherapy treatment field should be extracted before the commencement of radiotherapy to prevent the risk of osteoradionecrosis. A minimum of 14 – 21 days is recommended for extraction sites to heal before commencement of radiotherapy	Low	Strong
Lajolo, C., Rupe, C., Gioco, G., Troiano, G., Patini, R., Petruzzi, M., Micciche', F. and Giuliani, M., 2021. Osteoradionecrosis of the jaws due to teeth extractions during and after radiotherapy: a systematic review. Cancers, 13(22), p.5798.	Post-radiotherapy extractions should be considered a high-risk procedure and should be performed before starting radiotherapy.	Low	Strong
Balermpas, Panagiotis, Janita E. van Timmeren, David J. Knierim, Matthias Guckenberger, and Ilja F. Ciernik. "Dental extraction, intensity-modulated radiotherapy of head and neck cancer, and osteoradionecrosis: A systematic review and meta-analysis." *Strahlentherapie und Onkologie* 198, no. 3 (2022): 219-228.	Current data suggests that it may be premature to conclude that dental extractions before IMRT, reduce the risk for ORN development after IMRT.	Low	Low
Normando, A.G.C., Perez-de-Oliveira, M.E., Guerra, E.N.S., Lopes, M.A., Rocha, A.C., Brandao, T.B., Prado-Ribeiro, A.C., Gueiros, L.A.M., Epstein,	It is usually recommended that non-functional teeth or those with a poor restorative or periodontal prognosis that will be included in the planned radiation volume be extracted to decrease the risk of ORN. It is assumed that early extractions prior to the	Low	Strong

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
J.B., Migliorati, C.A. and Santos-Silva, A.R., 2022. To extract or not extract teeth prior to head and neck radiotherapy? A systematic review and meta-analysis. *Supportive Care in Cancer*, *30*(11), pp.8745-8759.	deleterious effect of RT on the healing capacity of bone will decrease the risk of delayed healing and ORN.		
Mendenhall, W.M., Suárez, C., Genden, E.M., de Bree, R., Strojan, P., Langendijk, J.A., Mäkitie, A.A., Smee, R., Eisbruch, A., Lee, A.W. and Rinaldo, A., 2018. Parameters associated with mandibular osteoradionecrosis. *American Journal of Clinical Oncology*, *41*(12), pp.1276-1280.	ORN occurs in irradiated bone when it is compromised due to hypovascularity, hypoxia and hypocellularity, which occurs as a result of fibrosis, endarteritis and periarteritis. Newer RT techniques, such as IMRT and proton beam irradiation, allow for more conformal treatment volumes that may include less mandible receiving high dose irradiation doses, thus potentially decreasing the risk of ORN.	Low	Low
Ruggiero, S.L., Dodson, T.B., Aghaloo, T., Carlson, E.R., Ward, B.B. and Kademani, D., 2022. American Association of Oral and Maxillofacial Surgeons' position paper on medication-related osteonecrosis of the jaws—2022 update. *Journal of oral and maxillofacial surgery*, *80*(5), pp.920-943.	Current estimates for the risk of MRONJ among osteoporotic patients exposed to BPs following tooth extraction range from 0 percent to 0.15 percent. The estimates for developing MRONJ in high-risk patients undergoing tooth extraction vary and cluster between 1 percent and 5 percent, similar to estimates of osteoradionecrosis following tooth extraction in irradiated patients.	Low	Strong
Quah, Bernadette, Chee Weng Yong, Clement Wei Ming Lai, and Intekhab Islam. "Efficacy of adjunctive modalities during tooth extraction for the prevention of osteoradionecrosis: A systematic review and meta-analysis." *Oral Diseases* (2024)	Evidence for whether primary closure significantly reduces ORN risk is still conflicting. Furthermore, the timing of the tooth extraction after radiotherapy was found to affect ORN risk, with extractions done 2-5 years having the highest risk.	Low	Low

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
Corrao, G., Mazzola, G.C., Lombardi, N., Marvaso, G., Pispero, A., Baruzzi, E., Decani, S., Tarozzi, M., Bergamaschi, L., Lorubbio, C. and Repetti, I., 2023. Oral Surgery and Osteoradionecrosis in Patients Undergoing Head and Neck Radiation Therapy: An Update of the Current Literature. Biomedicines, 11(12), p.3339.	Recent systematic reviews confirm that tooth extractions performed after RT are related to a higher occurrence of ORN compared to extractions performed before the starting of RT.	Low	Low
El-Rabbany M., Raziee, H.R., Zych, M., Tenenbaum, H., Shah, P.S. and Azarpazhooh, A., 2019. Interventions for preventing osteoradionecrosis of the jaws in adults receiving head and neck radiotherapy. *Cochrane Database of Systematic Reviews*, (11).	There is low-certainty evidence from four included studies that is sufficient to conclude whether or not platelet-rich plasma, peri-operative hyperbarbic oxygen therapy, systemic antimicrobial prophylaxis and fluoride gel and toothpaste are effective in preventing the development of osteoradionecrosis (ORN) of the jaws in adults receiving head and neck radiotherapy.	Very Low	Low
Paiva, G.L.A., de Campos, W.G., Rocha, A.C., Júnior, C.A.L., Migliorati, C.A. and dos Santos Silva, A.R., 2023. Can the prophylactic use of pentoxifylline and tocopherol before dental extractions prevent osteoradionecrosis? A systematic review. *Oral surgery, oral medicine, oral pathology and oral radiology*, *136*(1), pp.33-41.	The main triggering factor for ORN is tooth extraction in patients who have undergone head and neck radiotherapy. Osteoradionecrosis is unlikely to occur if the radiation dose is <60 Gy. Systematic reviews report incidences of ORN between 3.7% and 7.1% after tooth extraction in irradiated patients.	Low	Low.
Samani, M., Beheshti, S., Cheng, H., Sproat, C., Kwok, J. and Patel, V., 2022. Prophylactic pentoxifylline and vitamin E use for dental extractions in	Pentoxifylline and vitamin E (PvE) regimen compliance decreased dental extraction ORN rates more than the literature base rates of 7% at the patient level and 2% at the tooth level. Given its success in managing existing ORN, PvE could be	Low	Low

Article	Summary of Findings	Certainty of evidence (GRADE system)	Recommendation (GRADE system)
irradiated patients with head and neck cancer. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*, *133*(3), pp.e63-e71.	extended prophylactically for dental extractions in irradiated patients with head and neck cancer.		
Singh, A., Kitpanit, S., Neal, B., Yorke, E., White, C., Yom, S.K., Randazzo, J.D., Wong, R.J., Huryn, J.M., Tsai, C.J. and Zakeri, K., 2023. Osteoradionecrosis of the jaw following proton radiation therapy for patients with head and neck cancer. *JAMA Otolaryngology–Head & Neck Surgery*, *149*(2), pp.151-159.	In this single-institution case series, we found a 10.6% rate of ORN following proton beam therapy in patients with oral and oropharyngeal cancer.	Low	Low
Lajolo, C., Gioco, G., Rupe, C., Troiano, G., Cordaro, M., Lucchese, A., Paludetti, G. and Giuliani, M., 2021. Tooth extraction before radiotherapy is a risk factor for developing osteoradionecrosis of the jaws: A systematic review. *Oral diseases*, *27*(7), pp.1595-1605.	Even if it is generally recommended to remove oral foci before radiotherapy, this systematic review confirmed that teeth extractions before radiotherapy represent a risk factor for osteoradionecrosis; the considerable amount of missing data prevented us from identifying other possible risk factors for osteoradionecrosis onset.	Low	Low

Study	**Summary of findings**	**Certainty of Evidence (GRADE System)**	**Recommendation (GRADE system)**
Blayney et al, 2022	Patients receiving chemotherapy and some biological agents are higher risk of abnormal blood counts: medical teams should be consulted.	Moderate	Weak recommendation
Clarkson et al, 2021	Set recall intervals are of no benefit over risk-based approaches. people greatly value and are willing to pay for frequent dental check-ups	High	Strong
Clarkson et al, 2020	Timings for follow-up care should consider patient's preferences. People greatly value and are willing to pay for frequent dental check-ups	High	Strong
Haukk et al, 2020	Patients with unstable oral health will require more frequent monitoring	Low	Weak
Haukk et al, 2023	Patients should be educated on the value of regular oral health follow-up to support adherence to relevant recall intervals	Low	Weak
Li et al, 2024	Patients having received radiotherapy should be seen as soon as possible after completion of radiotherapy due to significance of post-treatment symptoms	High	Strong
Sandhu et al, 2020	An appropriate pre-treatment medical evaluation is crucial for those with	Moderate	Strong

	chemotherapy or disease-related altered haematological profile		
Scott et al, 2022.	Timings for follow-up care should consider patient's preferences	Low	Weak
Shimada et al, 2023	Medical teams should be consulted for those with prolonged neutropenia. .	Moderate	Strong
FERRAIOLO et al 2018	Insufficient evidence for interventions to prevent xerostomia and SG dysfunction post radiotherapy	Low	Weak
ZHENG et al 2018	Low quality evidence - Shuanghua Baihe Tablets to Prevent Oral Mucositis	Very low	Weak
AGARWAL et al 2022	Fluoride use may reduce the risk of radiation caries – further studies needed on approaches and outcome	Moderate	Strong
HONG et al 2018	Partial treatment protocol (leaving minor caries lesions into dentine PA lesions <5mm, dentine caries, asymptomatic unerupted teeth - may be appropriate when there is no time for full pre-chemo assessment	Moderate	Strong
NORMANDO et al 2022	Dental extractions should be performed prior to the start of head and neck RT to reduce the risk of ORN.	Moderate	Strong
LUKA et al 2024	Fluoride application is more likley to prevent caries after radiotherapy compared to no fluoride use. Importance of dental follow up	Moderate	Strong
HYE-JU LEE et al 2021	Comprehensive oral care before, during and after might prevent dental caries and	Low	Weak

	increase quality of life compared to OHI alone up to 6 months post therapy.		
SMEETS et al 2021	Further studies needed on use of coronoidectomy on treating trismus	Low	Weak
MOORE et al 2023	Presents the patients perspective retrospectively in an established cancer care unit highlighting importance of adapting oral care advice to individual needs and experiences.	Moderate	Weak
ABED et al 2019	Adherence to preventive measures is possible with support. Consider value in repeated discussions about side effects and impacts of radiotherapy on oral health and how patients can maintain this. Nursing team care with patient. MDT patient information	Very low	Weak