

The background image shows two dental professionals in full personal protective equipment (PPE), including blue scrubs, masks, face shields, and hairnets, performing a procedure on a patient lying in a dental chair. The scene is set in a clinical environment with various dental equipment visible in the background.

# Dental Care in Oncology Patients

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Clinical Specialist in Special Care Dentistry

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# Lecture Outline



Introduction to Special Care Dentistry (SCD)



Our mouth in a normal state



Cancer – the big impact



Looking at the long run

Special Care  
Dentistry  
Clinic (SCD)



# Main focus of SCD

Congenital conditions

Disability

Oncology

Domiciliary

Medically compromised

Today's talk

Oncology

# Sequence of events



Diagnosis of head and neck cancer



Dental clearance



Cancer therapy



Dental maintenance

# Dental clearance

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- Aim: To prevent osteoradionecrosis



# Dental clearance



1 month before treatment starts



Identify any existing infections, oral diseases or issues and potential risks



Restorative/periodontal treatment to minimise risk of periodontal infections



Denture adjustment



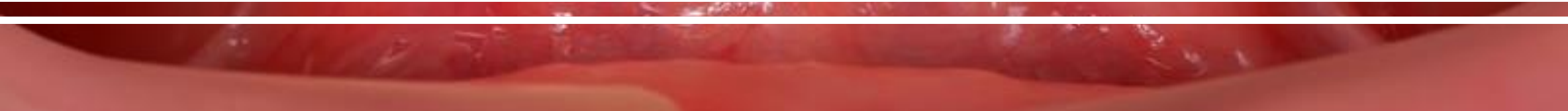


# Dental clearance

- Extraction of teeth with poor prognosis **NO LESS THAN 10 DAYS PRIOR TO START OF CANCER THERAPY**
  - Periapical lesion
  - Periodontal pocket depth >5mm
  - Furcation involvement



Our mouth in a normal state



A close-up photograph of a patient's mouth, showing the upper and lower teeth and gums. The oral mucosa is severely inflamed, appearing bright red and swollen, with significant ulceration and bleeding. The patient's lips are dry and cracked, indicating xerostomia. A yellow oval with a white border is superimposed over the center of the image, containing the text "EFFECTS OF RADIATION THERAPY AND CHEMOTHERAPY".

**EFFECTS OF  
RADIATION THERAPY  
AND  
CHEMOTHERAPY**

1

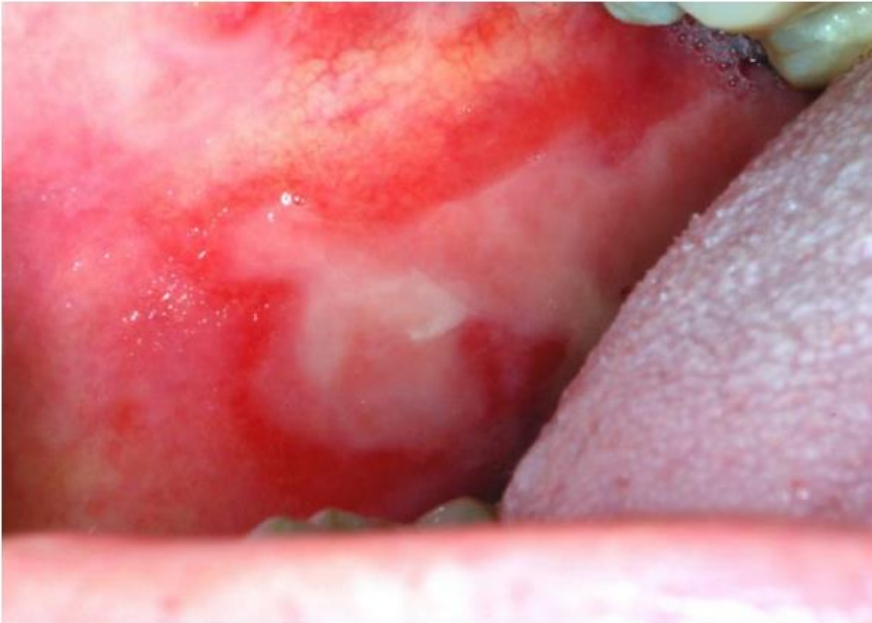
## Oral mucositis



**Figure 1.** Oral Mucositis lesion on the buccal mucosa of a patient receiving radiation therapy to the head and neck region. Note the central area of ulceration covered by a whitish pseudomembrane, and the surrounding erythematous area. Picture from the teaching collection of Dr. Rajesh V. Lalla.

*Sroussi et al. (2017)*

# Consequences of oral mucositis



Pain



Infections

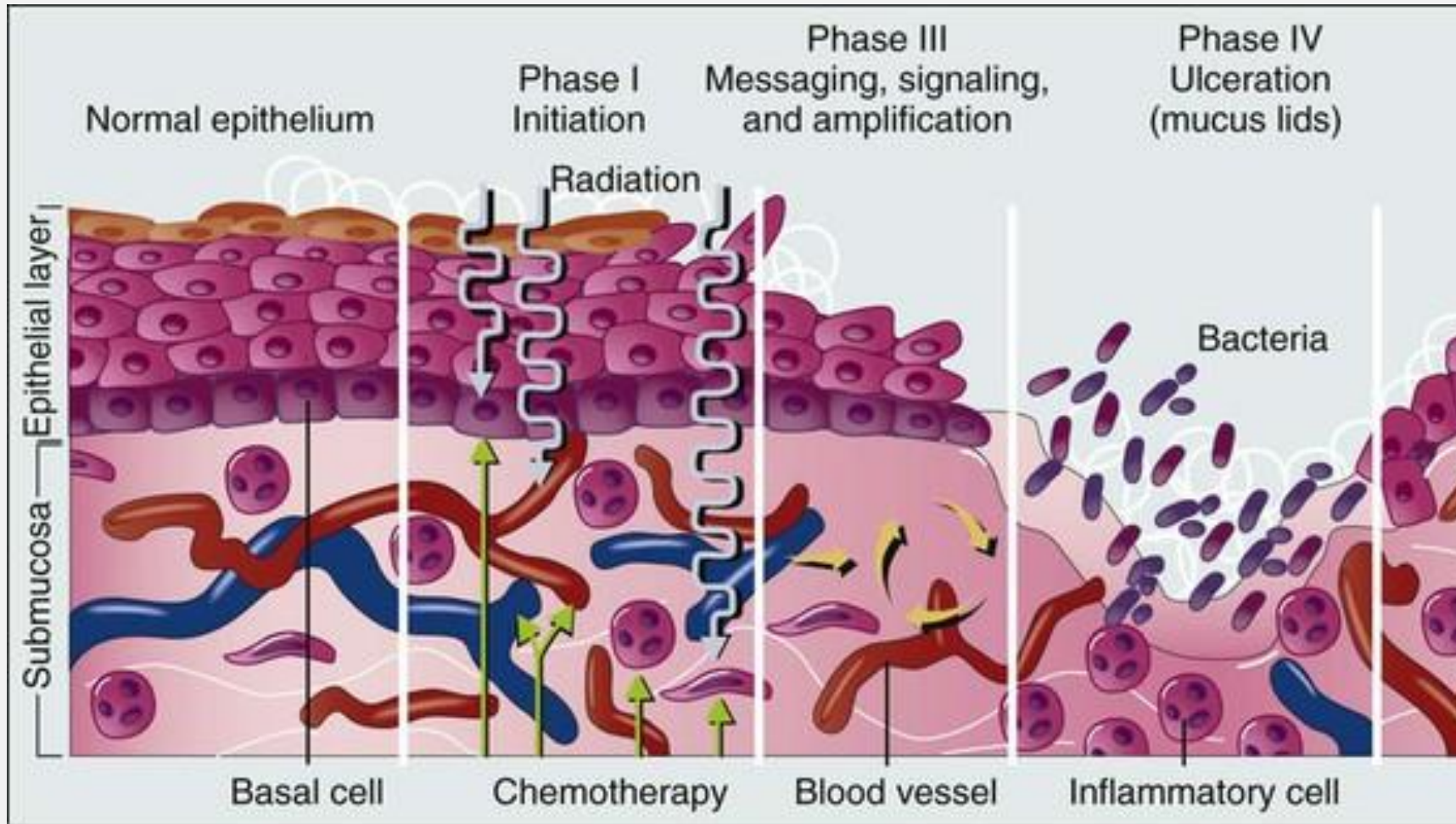


Altered nutritional intake and mouth care



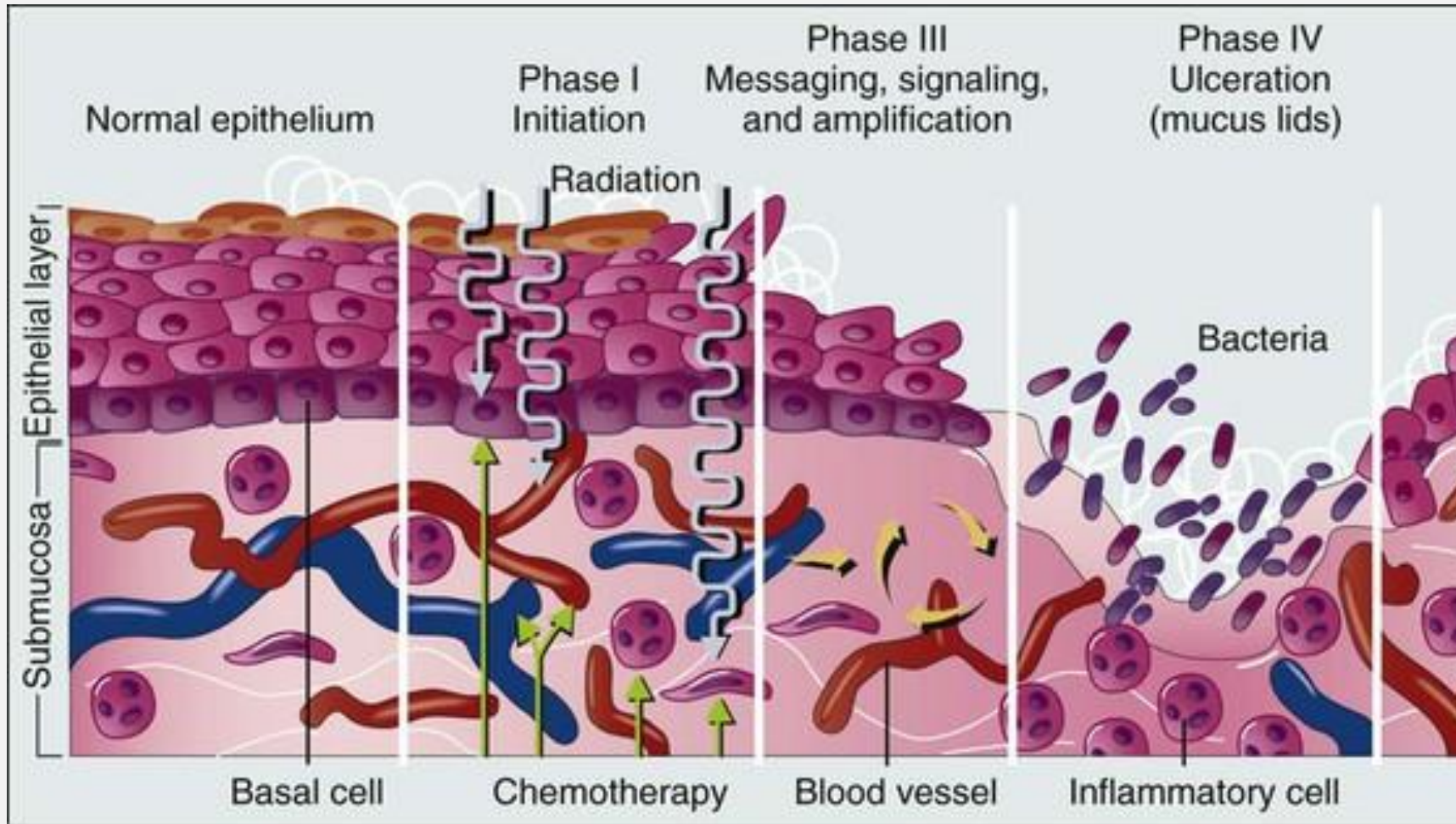
Reduced quality of life

Adapted from Peterson (2006)



Pathobiology of oral mucositis

Adapted from Peterson (2006)



## Pathobiology of oral mucositis

TOTAL PROCESS FROM START TO HEALING TAKES **21 DAYS**

## Altered salivation



**Figure 2.** Head and neck cancer patient at 25/35 fraction with dry ropey saliva, oral mucositis, and suspected oral candidiasis. Picture from Dr. Deborah Saunders.



## Radiation caries



**Figure 1:** Type 1 are lesions affecting the cervical aspect of the teeth and extending along the cemento-enamel junction



**Figure 2:** (a) Type 2 presents with demineralized and worn occlusal surfaces. (b) Type 2 presents with demineralized and worn occlusal surfaces



**Figure 3:** Type 3 lesions present as color changes in the dentin. The crown is dark brown-black, along with occlusal wear

# Radiation caries



**Figure 1:** Type 1 are lesions affecting the cervical aspect of the teeth and extending along the cemento-enamel junction



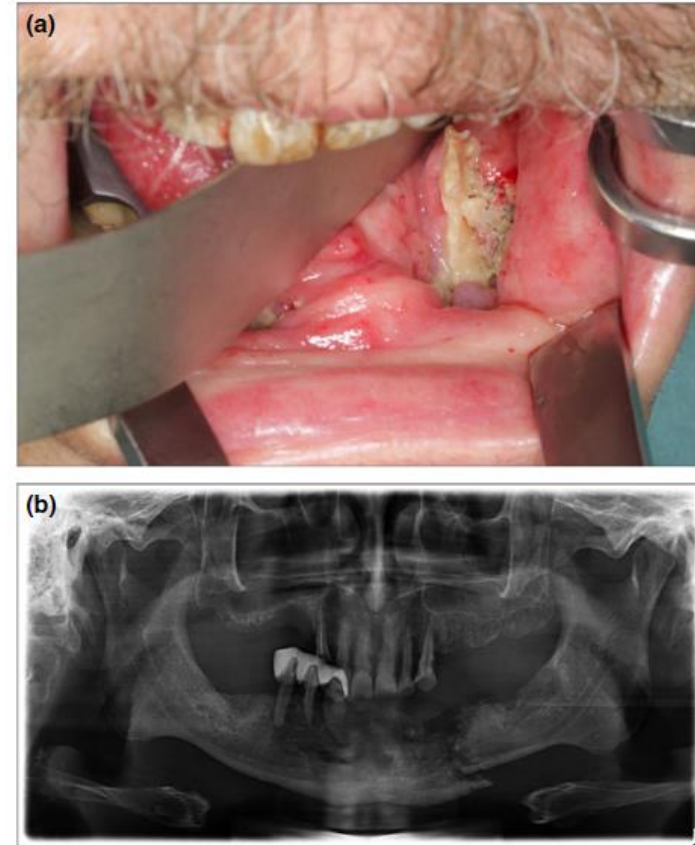
**Figure 2:** (a) Type 2 presents with demineralized and worn occlusal surfaces. (b) Type 2 presents with demineralized and worn occlusal surfaces

LEAST  
COMMON



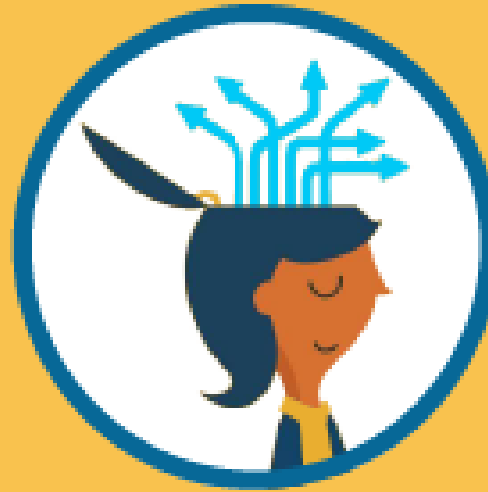
**Figure 3:** Type 3 lesions present as color changes in the dentin. The crown is dark brown-black, along with occlusal wear

## Osteoradionecrosis



*Figure 1.* A 69-year-old man presented with pain and a non-healing wound in the left lower jaw. The patient was an active smoker, suffered from pharynx cancer and had received radiotherapy (external beam radiotherapy with standard field sizes, conventional fractionation and mean dose 64 Gy) and chemotherapy. Clinically, exposed necrotic bone in the left lower jaw, inflammation, swelling and inferior alveolar nerve hypesthesia was present (a). The orthopantomogram revealed pathologic fracture of the left lower jaw (b). The patient was diagnosed with osteoradionecrosis of the lower jaw and was scheduled to be treated surgically.

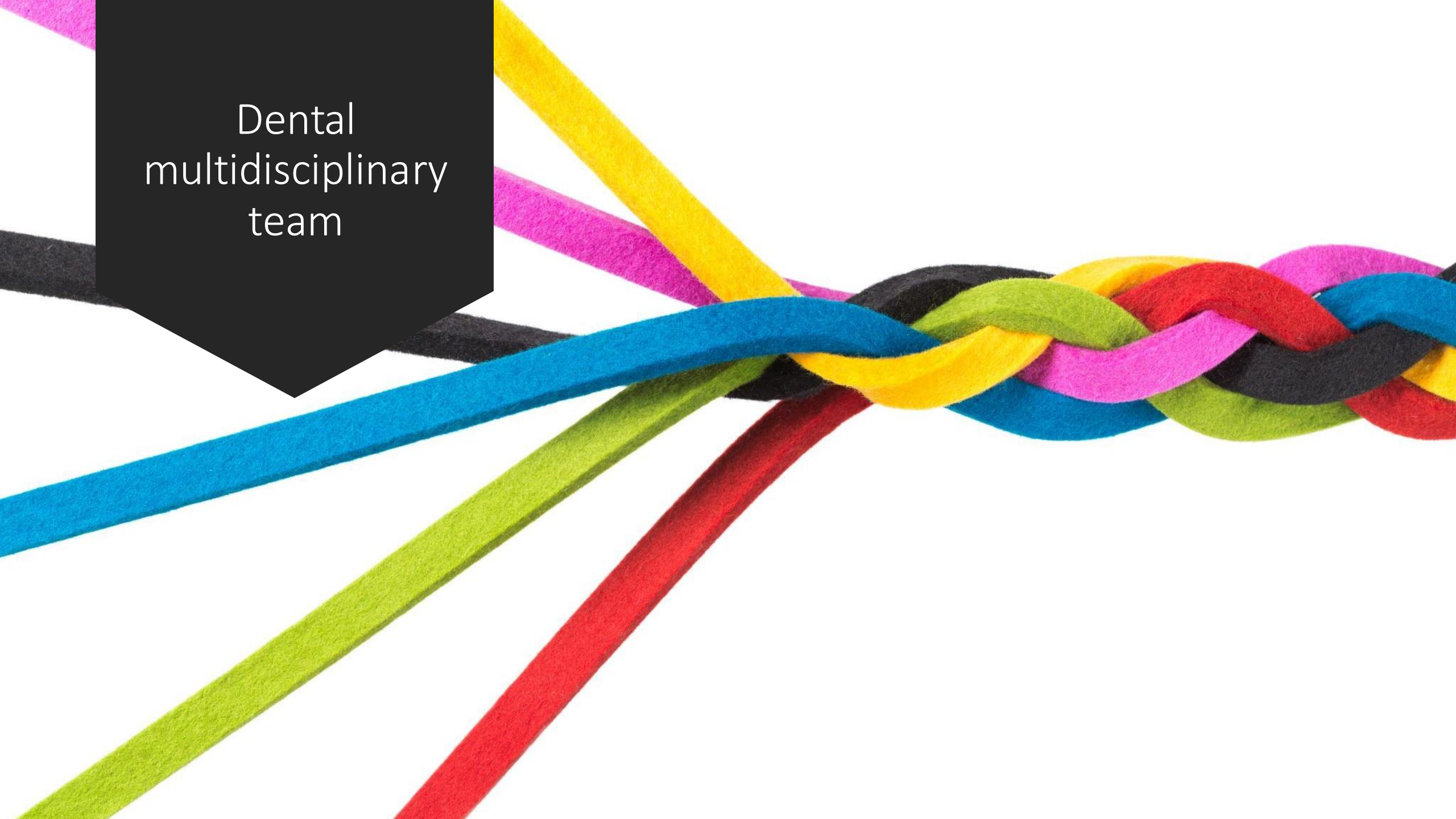
These risks  
are  
permanent!



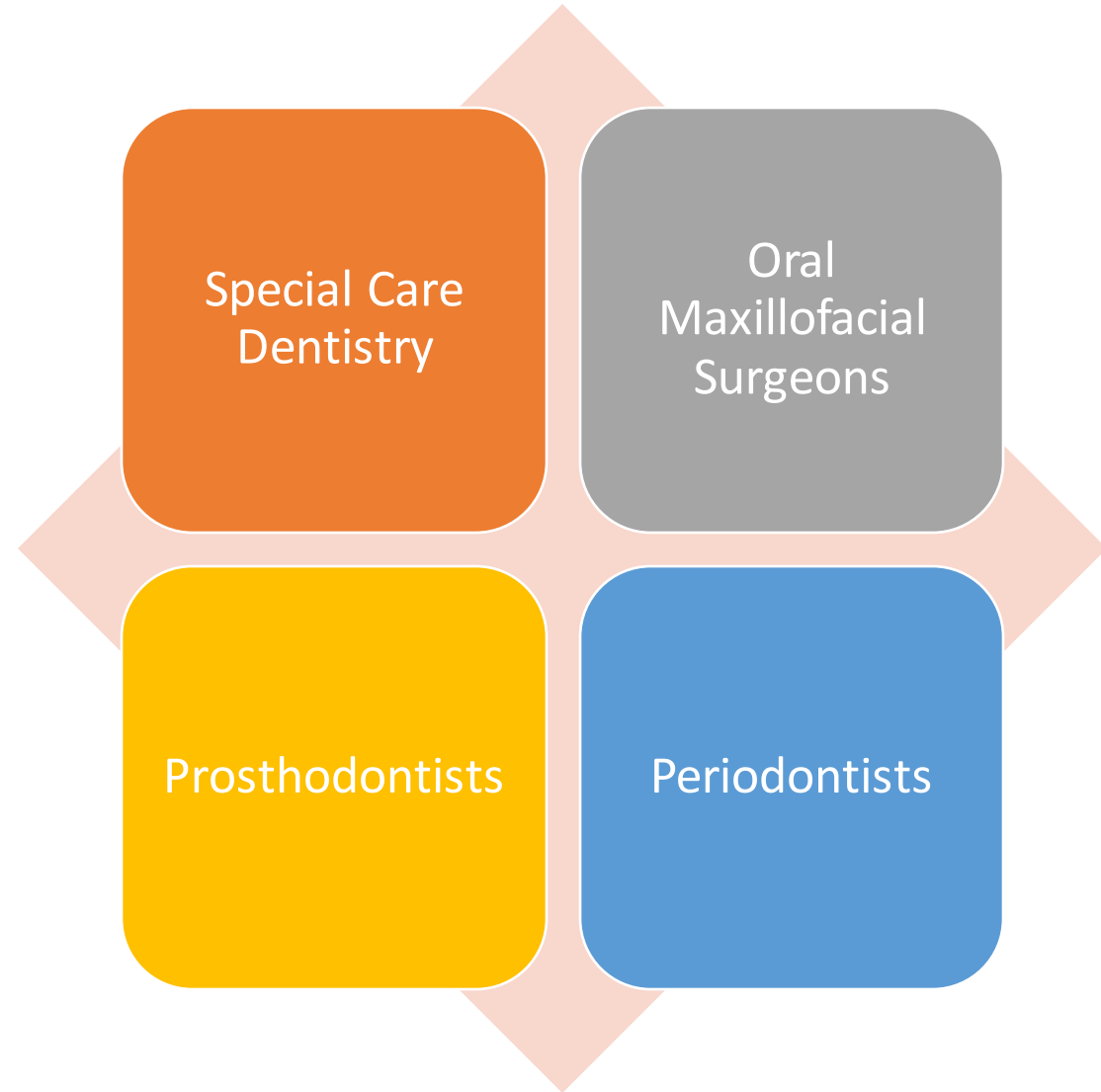
**BE AWARE**

**TAKE NOTICE**

Dental  
multidisciplinary  
team



Dental  
multidisciplinary  
team



# Dental care

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Regular reviews with the  
dentist



# Dental care

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DRINK FREQUENT SMALL SIPS  
OF PLAIN WATER



REGULAR TOOTHBRUSHING  
WITH FLUORIDE TOOTHPASTE



AVOID SUGARY AND ACIDIC  
FOODS



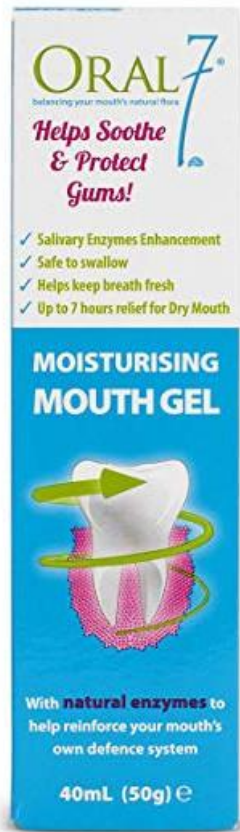
# Dental care

## High fluoride therapy

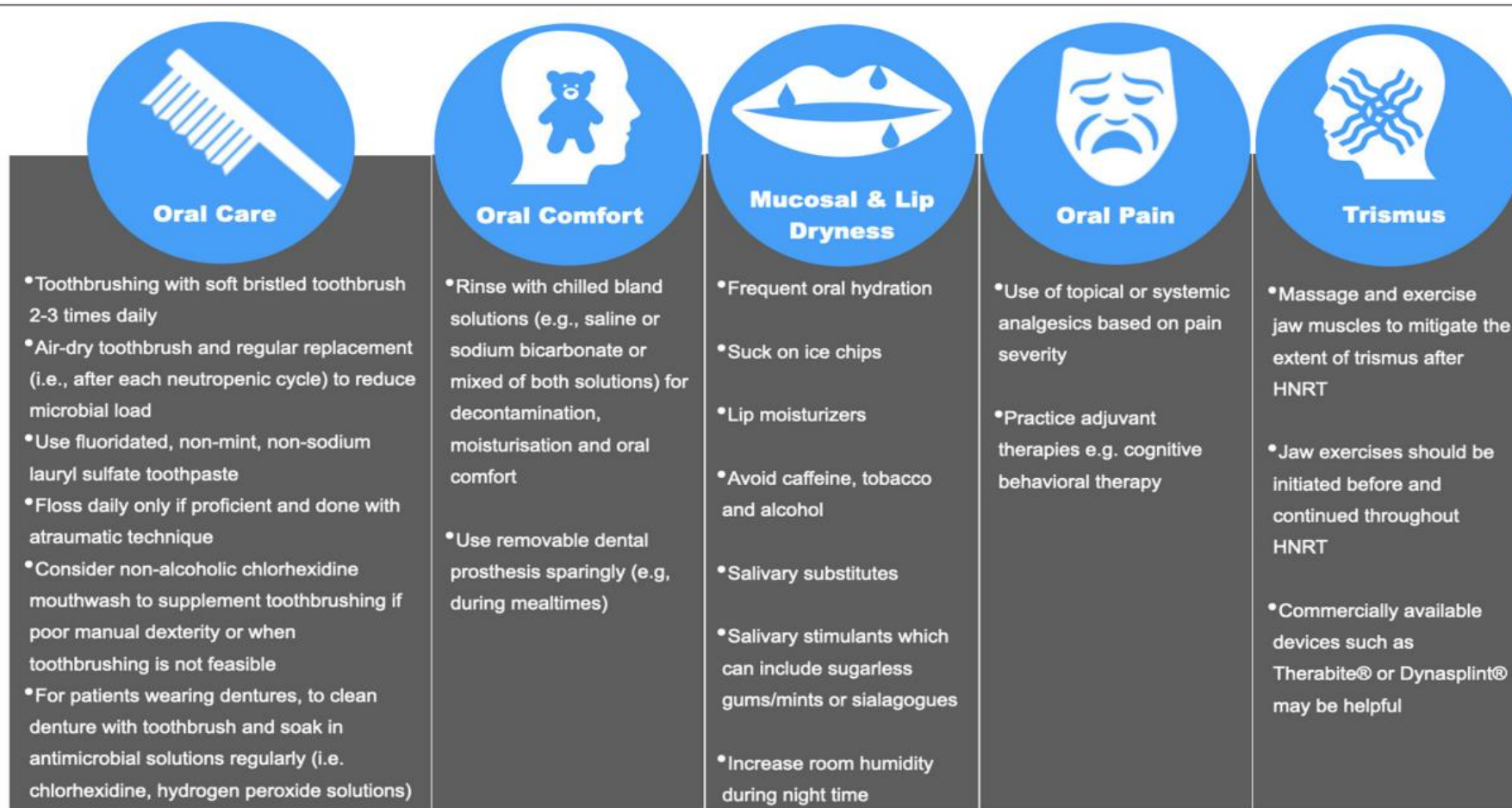


# Dental care

# Salivary substitutes



# In the long run



**FIGURE 1** | Oral care instructions during and after anti-neoplastic therapy [54, 63, 92–101].

# References

1. Chronopoulos, A., Zarra, T., Ehrenfeld, M., & Otto, S. (2018). Osteoradionecrosis of the jaws: definition, epidemiology, staging and clinical and radiological findings. A concise review. *International dental journal*, *68*(1), 22-30.
2. Gupta, N., Pal, M., Rawat, S., Grewal, M. S., Garg, H., Chauhan, D., ... & Devnani, B. (2015). Radiation-induced dental caries, prevention and treatment-A systematic review. *National journal of maxillofacial surgery*, *6*(2), 160.
3. Peterson, D. E. (2006). New strategies for management of oral mucositis in cancer patients. *The journal of supportive oncology*, *4*(2 Suppl 1), 9-13.
4. Sroussi, H. Y., Epstein, J. B., Bensadoun, R. J., Saunders, D. P., Lalla, R. V., Migliorati, C. A., ... & Zumsteg, Z. S. (2017). Common oral complications of head and neck cancer radiation therapy: mucositis, infections, saliva change, fibrosis, sensory dysfunctions, dental caries, periodontal disease, and osteoradionecrosis. *Cancer medicine*, *6*(12), 2918-2931.
5. Yong, C. W., Robinson, A., & Hong, C. (2022). Dental Evaluation Prior to Cancer Therapy. *Frontiers in Oral Health*, *3*, 876941.