

## Oral care and cancer treatment

### Introduction

*Sadly, cancer affects more and more families these days and while treatment appears to be improving, it is still a condition that needs considerable further research and often requires aggressive treatment involving a combination of radiotherapy, surgery and/or chemotherapy.*

*Both chemotherapy and radiotherapy have very significant impacts on a patient's general health, and on their oral health in particular. It is recommended that all cancer patients be seen by a dentist experienced with patients undergoing cancer therapy before their cancer treatment starts. Depending on the type and site of cancer treatment planned, it may be possible to provide dental care that will prevent severe oral complications later.*

*It is very important to have that first conversation with a dentist and to ask for information so that the implications of a cancer diagnosis and cancer treatment are fully understood by the patient, particularly regarding primary and secondary effects on oral health.*

### Good oral home care is fundamental

It is obvious that good oral care at home is more important than ever to make sure the mouth remains healthy, particularly when it may be exposed to changes such as reduced saliva, poorer quality saliva and inflamed irritated oral soft tissues along with a reduced effectiveness of the body's immune system.

The cytotoxic drugs (*drugs that kill cancer cells*) generally kill the cells that turn over fastest. However, the damaging effects of these drugs also have a negative impact on other healthy cells in the body and one of these effects is a reduction in the effectiveness of the glands producing secretions. This includes the salivary glands producing saliva and those producing tears (lacrimal glands).

The effect on salivary glands is to reduce the quantity and quality of salivary secretions. This leads to a dry mouth and irritated and often sore oral soft tissues, known as oral mucositis (inflammation of the oral mucous membranes). The lacrimal glands (tear glands) may also become less efficient at producing tears so that the eyes may feel dry and sandy. Other mucous membranes that may become sore and dry include the vaginal mucosa.

Of course radiation therapy is also commonly used to treat cancer and in the case of head and neck cancer, the beam of radiation can negatively impact salivary glands and result in a dry mouth and other local effects. The potential side effects of all cancer treatment should be carefully discussed with your oncology team.



### **First have a dental check**

It is sensible before you start cancer treatment to get a **dentist** to examine your mouth to make sure that you have no decay in any teeth and to assess your mouth for gum inflammation, and recession that has exposed the root surface of any teeth that can be particularly susceptible to decay.

### **Dry mouth-related dental decay**

If you suffer a dry mouth as a result of the cancer treatment, you are very likely to experience a far more rapid progression of dental decay and the formation of new decay due to the absence of an effective barrier to infection. The saliva reduction leads to less efficient oral cleansing, less efficient clearance of sugar residues from the mouth after eating and an increase in the numbers of decay-causing bacteria with a change to a more acidic environment in the mouth. All this contributes to further decay. Saliva normally has an antibacterial effect but with reduced secretion, your resistance to bacterial infection in the mouth will also be reduced.

In a dry mouth there is going to be a change in the health of the oral soft tissues that may become irritated, sore, inflamed; a condition known as mucositis. If you have to wear a denture, you may find this impossible, as the rubbing can be very painful on inflamed soft tissues. You may also suffer from oral ulcers, infections and require urgent dental examination and treatment.

### **A dental hygienist can be a great support**

During your cancer treatment and afterwards, it will be important to arrange for the assistance of a **dental hygienist** who can help you to do all the right things to try to prevent dental problems and to strengthen the teeth against possible decay.

### **Strengthening teeth with remineralisation and fluoride**

Using a combination of Tooth Mousse Plus containing Casein Phospho-peptide-Amorphous Calcium Phosphate and Fluoride, a re-mineralising tooth cream, and either Stannous Fluoride or Sodium Fluoride (Fluoride mouth washes) will provide the best protection to the teeth against either dry-mouth induced decay or post-radiation therapy decay. This should be discussed with either your dentist or your dental hygienist to offer you the best protection for your mouth as you go through the cancer treatment.

### **Medications may help**

The use of certain medications may assist to avoid or treat complications associated with a disturbed oral environment. Anti-fungal medications (Nystatin and Miconazole) can help if you suffer from thrush, or cracking and weeping of a sore lesion at the corners of your mouth known as angular cheilitis.

The use of regular water to sip and some dry mouth products like artificial saliva, and the Biotene range of products all have some benefit in keeping the mouth more comfortable and retaining moisture. Other helpful hints include the avoidance of tea, coffee and alcohol all of which have the tendency to dry out the mouth and reduce your water content.

Mouthwashes containing *Chlorhexidine* may assist in preventing oral infection and the use of Difflam – C, a numbing mouthwash that also contains the antibacterial “*Chlorhexidine*” can be effective at helping reduce the discomfort associated with oral ulcers.

### **Hyperbaric oxygen therapy**

In some cases the use of hyperbaric oxygen therapy may also assist in supporting the salivary glands to perform to an improved level despite the effects of either cytotoxic drugs or radiation therapy. This needs to be discussed with your oncologist and the medical officer running the hyperbaric chamber.

### **Other oral changes during cancer therapy**

There are several other side effects of cancer treatment that affect the mouth. You may find changes in your *taste sensation*, *bleeding* from the oral tissues that may indicate a depletion in the number of circulating platelets, and it is possible to have some progressive *fibrous tissue formation* resulting from radiation therapy in the area of the jaw joints that can lead to a *reduced ability to open the mouth* very wide, making access for home plaque control more difficult and making the provision of dental treatment far more difficult too.

### **Radiation therapy has oral side-effects**

Exposure of the body's cells to ionising radiation has certain effects on those cells, largely damaging effects, that result in cell death. Those cells dividing fastest are most affected by radiation but even normal cells that reproduce at a far lower rate are also affected to a lesser degree. These lesser effects include inflammation, reddening of tissues, fibrosis and formation of scar-like tissue causing tissue shrinkage and tissue distortion. Furthermore, the blood vessels within the field of ionising radiation can become partially or completely blocked by fibrous tissue and this results in a poorer blood supply to the local tissues leading to less efficient cellular activity.

The poorer blood supply can leave the tissues more susceptible to infection, irritation, ulceration, and general soreness. In the mouth it can also alter the perception of taste. The nerves can be affected by the ionising radiation and this can result in pain from within the irradiated tissues.

The fibrous tissue formation and local soft tissue distortion can lead to changes in the temporomandibular joint and associated muscles if they are within the zone of irradiation leading to a limitation of mouth opening and even distortion of the soft

tissues around the mouth causing a reduction in the size of the oral aperture that can make dentistry very difficult to provide.

### **Difficulty wearing dentures**

Patients who have missing teeth and who need to wear dentures and suffer from cancer requiring chemotherapy may find that their denture wearing becomes more difficult and more uncomfortable. This is largely associated with a reduction in the quality and quantity of saliva along with inflamed and irritated soft tissues within the mouth. This can be a very difficult problem to treat but there are ways and the problem if it arises, must be discussed with a suitable dentist who can offer appropriate therapy.

### **Summary**

If you have recently been diagnosed with cancer, it may be just the time to seek dental support to prevent additional problems arising that can be prevented to a large extent or at least minimised.

A short list of useful actions would include:

- Early dental check before cancer treatment starts
- good oral hygiene, ideally using a high frequency vibrating brush (>32,000 brush strokes per minute – *Philips Sonicare brushes*)
- Good plaque control between teeth including the use of floss and/or *Piksters*,
- regular consumption of water throughout the day 1.5-3L per day depending on lifestyle, activity and climate,
- avoiding alcohol, tea and coffee that can lead to fluid loss,
- regular use of fluoride toothpaste and mouthwash
- use of a remineralising cream (*ToothMousse Plus*) to “heal” early decay and protect exposed root surfaces from decay,
- a healthy diet,
- avoiding tobacco-smoking or the use of other tobacco products,
- avoiding the use of e-cigarettes as the effects of the chemicals are still not fully understood
- dental and oral hygiene support,
- avoid eating lollies,
- reduce sugar intake generally (both quantity and frequency),
- maximise saliva production by chewing sugar-free gum regularly but especially after mealtimes
- neutralise the plaque-produced acids in the mouth by eating a neutralising food (such a cheese)
- and cleaning of the teeth after every eating occasion, including between the teeth.