



## **Regular thorough dental checks and minimum interventive dentistry**

### **Preventive health education....**

Preventive dental health education varies from area to area and between different communities throughout Australia. Education is probably one of the most important factors in preventing so many medical and dental diseases including heart disease, lung disease, diabetes and stroke. Dental disease should also be included in this list because, like a number of medical conditions, both dental decay and gum disease can be completely prevented if we all took every available bit of advice offered by dental healthcare teams. Sadly such a situation does not exist today and consequently many patients continue to suffer from preventable diseases (medical and dental) some of which can have fatal consequences.

### **The link between dental and general health....**

In the last 15 years it has become increasingly clear that there is a relationship between gum disease and several medical conditions including coronary artery disease, strokes, renal disease, diabetes, low birth weight babies and premature birth. It appears that there is a common inflammatory mechanism that accounts for these links.

It is becoming increasingly clear that the health of the oral tissues is intimately related to a person's general health and therefore the importance of having regular and thorough examinations of not only the teeth, but the supporting structures (gum and bone), the jaws, facial muscles and the lymph nodes around the head and neck region, cannot be over-emphasised.

### **The importance of a thorough dental examination....**

Dental examinations vary considerably in their thoroughness. A purely visual examination of the mouth may well be adequate for a patient who has no natural teeth remaining and wears complete dentures. The only aim of the examination in this situation is to identify any damage to the dentures and any unusual soft tissue appearances, including pigmented areas of soft tissue, lumps, bumps and ulcers. This is necessary to ensure that any oral cancers are identified at the earliest possible stage in their development; ideally before they spread to local lymph nodes and beyond.

### **A quick dental check is no longer adequate....**

Patients need careful examination and this should involve the following:

- *Visual examination.* This must be conducted in good lighting and after drying the tissues being examined including both soft tissues and teeth.
- *X-ray examination.* This method of examination is important to detect decay in the teeth at the very earliest possible stage. This stage represents only demineralisation of the outer enamel with no involvement of the underlying dentine and no cavity formation. Lesions detected at this very early stage are treated by a minimally invasive approach including the use of remineralising agents, improved plaque control, reduction of the frequency of sugar intake, and the use of sugar-free gum to encourage salivary flow to wash away sugar residues after eating. Later stages of decay once the lesion reaches the junction of the enamel and the dentine spread quickly along the junction and a cavity forms. Once this happens a fillings must be placed after first removing the softened dentine.
- *Periodontal examination.* The gums should appear pale pink and be free of inflammation. However the inflammation may be limited to the deep surface of the gum facing the tooth surface. This can only be identified by gently probing the space between the tooth and the gum, called the gingival crevice or pocket, and if probed gently with a round-ended probe, inflammation is identified by the slow ooze of blood from the crevice within a short time after removing the probe. Gums that bleed on probing are affected by either Gingivitis (only affects the soft gum tissues) or Periodontitis (a destructive process leading to bone loss). In both cases, treatment will be offered to resolve the inflammation and return the gums to health. Failure to carry out a gum examination will leave patients with undiagnosed gum disease that will continued to destroy the bone supporting the teeth. Late diagnosis will result in the loss of teeth that could have been saved, had the correct examination been performed at each dental examination.



### **Modern approach to dental care means more teeth in old age....**

Modern advances in dental techniques and dental materials enable dentists to restore and retain natural teeth for a lifetime and more people are now entering old age still with their own natural teeth, or at least with a significant number of their own teeth.

### **Many benefits of keeping natural teeth....**

By retaining natural teeth into old age, people retain an improved ability to eat well obtaining better nutrition. It was often a problem for elderly people to maintain a healthy nutritious diet if they had lost their teeth. Complete upper and lower dentures often severely limited their options when choosing foods to eat. It also caused embarrassment when eating out in company. With poor diets, their general health often suffered. A further benefit of keeping the teeth is that people also then retain the bone that supports those teeth. This bone therefore continues to support the facial soft tissues maintaining facial shape and provides the support necessary for the lips and cheeks avoiding the “fallen-in” appearance we often associated with old people in the past. The result is a younger appearance and improved self-confidence.

### **The problem of keeping teeth for longer....**

Keeping teeth longer means they are exposed to the oral conditions liable to result in tooth decay and gum disease for many more years. Teeth also suffer from erosion from dietary acids and abrasion of dietary causes and from tooth against tooth contact and grinding. With the extra years of service that teeth provide nowadays, teeth may fracture from prolonged wear and often need filling or protecting from elements of the oral environment, such as acid reflux erosion often encountered in the later years. This can prove to be a challenge for dentists.

It is therefore important that teeth receive the smallest fillings possible throughout life so that the smallest amount of tooth substance is lost over the numerous occasions when fillings have to be replaced. This is one reason why minimally invasive dentistry is becoming so important and early detection of decay is a fundamental part of this modern approach to dental care, to try to prevent or delay the need for fillings.

### **Sticky fillings are best....**

Minimal removal of tooth structure goes hand in hand with the use of adhesive or sticky filling materials that chemically bond to the dentine and enamel of the tooth. There are a number of such materials nowadays that are both tooth coloured, and can be polished to a very high gloss reducing their attractiveness to plaque. These materials are favoured over the more conventional metal amalgam fillings that needed to engage undercut in the tooth cavity to stay in the tooth. Such fillings required the removal of greater amounts of sound tooth structure than today’s adhesive or sticky fillings. The minimisation of tooth damage by the dental drill is termed minimally invasive dentistry.

Preventive or minimally invasive dentistry is now the universally adopted approach to restoring teeth and thereby dentists try to retain as much tooth substance as possible for the future.

### **The stages of cavity development....**

When a cavity forms in a tooth, there are stages in its progression. First there is the development of a small white spot lesion that represents a small area of the enamel where the density of mineral just below the surface is reduced however there is no cavity at this stage. Next we see the progression from a white spot lesion to a brown lesion with further demineralisation of the enamel and a gradual increase in the depth of the lesion towards the dentine. Still there is no cavity formation. In both the white spot lesion and the brown lesion, remineralisation may be achieved by the use of materials that encourage remineralisation of the tooth.

Minimally invasive dentistry includes the use of remineralising agents that act by “*pumping*” mineral back into the demineralised zone of early decay. This is useful if applied before a true cavity forms. The “healed” early decay lesion, once remineralised, is even more resistant to the acid attack of the decay process than the original natural healthy tooth substance.



Once the decay reaches the junction between the outer enamel and the inner dentine, the decay spreads laterally widening the decay front as it tracks deeper into the tooth towards the pulp. After the decay passes the enamel-dentine junction the degree of demineralisation is so great that the dentine affected becomes soft and a cavity forms.

#### **A cavity is irreversible....**

Once a cavity forms, it cannot heal. The dentine has become softened and is infected by the bacteria that normally live in the dental plaque. These are the bacteria that eat the sugars in the mouth and convert them into acid that attacks the tooth. If the cavity is not treated, the area of the dentine softened by the decay process increases in size and eventually the decay process reaches the pulp in the centre of the tooth.

#### **Deep cavities lead to tooth abscesses....**

The bacterial products in the decayed dentine then cause an inflammatory reaction in the pulp tissue, a condition known as pulpitis. This may initially be a reversible process if the decay is treated, the infected dentine removed and the cavity filled. However, left for a relatively short time, this reversible inflammation may become irreversible and the pulp tissue will die, no matter what treatment is provided. The tissue then decomposes and an abscess results with the bacteria multiplying in the absence of any immune response. An infected tooth with an abscess can only be treated either by removing the tooth or by performing a root treatment, also known as a root filling or root canal therapy.

#### **Action now will improve your quality of life later....**

Understanding the requirements of a thorough dental examination will help you to gauge if you are receiving an appropriate level of care, and adequate in depth assessment of the health of all the tissues in your mouth, and not just the teeth. Today it is important that younger people are correctly examined for gum disease in particular. It is also important that early lesions of decay are treated in a preventive manner and not left until they get big enough to fill.

Feel free to discuss the options for treatment with your dentist. Discuss the findings of your X-rays with him or her and be part of the decision making process when treatment planning takes place to ensure that all the right things are done now, so that later in old age you will still be able to enjoy all the foods you enjoy now, and can eat, speak, smile and laugh in public without any concern or embarrassment. Do the right thing now and enjoy better quality of life in your later years.