

## Consent to a Canine Exposure

You have been informed that you will need a unilateral or bilateral canine exposure as part of your orthodontic treatment.

### What is a canine exposure?

During growth and development of the teeth, one of the last few teeth to erupt in the jaws between the age of 11-13 is the upper canines (maxillary canines). The upper canines are guided into position by the upper lateral incisor. For various reasons which are not always clear, the maxillary canines become stuck (impacted) in the upper jaw. We suspect this to be the case after having cleared space for the maxillary canines to erupt into, and despite this, there does not appear to be significant vertical movement of the canine over 6 months. The reasons could be manifold:



- Inadequate jaw size and crowding of teeth
- Delayed tooth formation
- Malformation of tooth
- Thick fibrous tissue overlying
- A thick plate of bone around the maxillary canine
- A primary failure of eruption

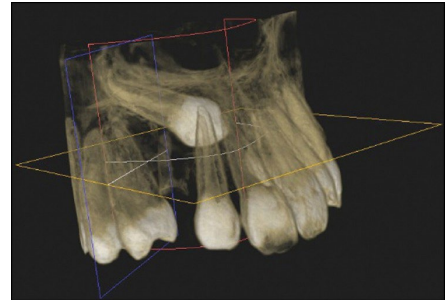
Under these circumstances and with your permission, we elect to perform an exposure of the canine, where we lift the gum, identify the obstruction and remove this. At the same time, we seek to dry the field and bond a meshed pad with a gold chain to the canine tooth. We can then trail this gold chain to the brace and apply some gentle traction. The maxillary canine/s can then be gently lifted and made to erupt by light forces.

Where it is possible to fully expose the canine, the procedure is called an 'open exposure'.

Sometimes the canine is deeply buried. Whereas we can clear the tissues around the top of this tooth, it still remains buried but a gold meshed pad is bonded onto the tooth surface underneath the gum and the gold chain trails outside the gum with the canine covered. This is called a 'closed exposure'.

## How is the procedure carried out?

Some children will find the prospect of minor surgery too daunting to have this procedure completed in the dental chair and will seek referral to hospital to be put to the sleep with general anaesthesia (GA). GA is not without its own risks and as such we encourage children to have this procedure completed under local anaesthesia. The canine position is first assessed with a conventional X ray, or a 3D X-ray called a cone beam computerised tomogram (CBCT) scan. This will help the surgeon plan surgery.



On the day of surgery, and after the local anaesthesia has worked you should not feel any pain or discomfort from any surgical manipulation of the area numbed.

Local anaesthesia involves injection with a very fine needle which is inserted ever so gently after which you will feel no pain or discomfort. A flap of gum is incised with a scalpel over the canine to reveal this tooth. We then use a small spoon shaped instrument to gently clear the bone around the crown of this tooth. Sometimes, it becomes necessary to remove hard tissue with a drill or a laser to clear the path of eruption for the impacted maxillary canine. After the surface is revealed a gold-plated mesh with a gold chain is attached. The gum is then stitched back around the gold chain with a suture material that is resorbable. The gold chain can then be tied into the brace and light force application will usually result in exposure of this tooth.



Sometimes a pack made of gauze and an antiseptic, known as 'whitehead's varnish' may be stitched into position to prevent the gum growing over the maxillary canine.

## Advantages of canine exposure, and risks of no treatment

The maxillary canine possesses the longest roots and is an excellent tooth to take the sideways pressure of the bite. If this tooth is not in the correct position, other teeth with shorter roots pick up some of the bite load and this can result in mobility and fracture of teeth and tooth wear. If the maxillary canine is not exposed and carefully directed into the correct position, there is every possibility that slow eruption in the direction of adjacent teeth will occur. In this instance the maxillary canine may cause resorption and subsequent loss of other teeth – sometimes the front teeth.

## Limitations and complications of treatment

It is possible that despite an exposure of the maxillary canine this tooth does not respond to light force traction. In this instance there is every possibility that the maxillary canine has become ankylosed (joined with the bone). In this instance we may find other teeth being pulled in the direction of the canine. When this occurs, the traction is stopped immediately, and the

maxillary canine then needs to be removed to enable closure of the space. The orthodontic treatment plan will need to be modified in favour of allowing premolar/s to come forwards and occupy the canine space/s.

It is vitally important that you provide the surgeon with full details of your medical history as this might impact on surgery by causing an increased chance of bleeding, infection and breakdown of bone. You must particularly inform the surgeon if you have diabetes or any conditions that may affect bone healing such as use of bisphosphonates.

Other complications of treatment include:

- Gum recession around the corrected canine or adjacent teeth (this may be correctable by a gum graft which will be a chargeable procedure)
- Discoloration of the canine
- Damaging the canine or adjacent teeth when clearing the path of hard tissue to facilitate active eruption of this tooth
- Nerve injury resulting in altered sensation, numbness, loss of vitality of the impacted tooth or adjacent teeth and subsequent infection and pain or altered feeling in the face
- Separation of the meshed-pad and gold chain which results in repeat surgery
- Rarely, a difficult exposure may result in an opening to the sinus, or nasal cavity and this can result in a chronically discharging infection called a 'fistula'. Such a complication requires hospital treatment
- Allergy to drugs and local anaesthetic

### **Post-operative considerations**

This minor surgical procedure can result in pain, swelling, bleeding, infection, bruising, delayed healing, scarring, and possible damage to adjacent teeth. Surgery does involve some incisions (cuts) around the gum. This will result in temporary difficulty in opening the mouth and chewing. After surgery you are advised to rinse the area with hot salt water, and chlorhexidine rinse to decontaminate the site and minimise the chance of infection. It is important to follow up this procedure with the surgeon.

### **No warranty or guarantee**

No guarantee, warranty or assurance has been given that the proposed treatment will be successful although there is a high probability of success.

### **Clinical Photographs**

We may take photographs of stages of treatment as part of your clinical records, and this may be used with your additional individual specific consent to scientific documentation, teaching and research.

I confirm that I have read and understood the information contained within this guide, and I have had the opportunity to ask questions. I feel that I understand the risks, benefits and limitations of the procedures described, and I understand that no promises or guarantees of the proposed outcome can be made. By signing this form, I am providing my explicit consent to render necessary treatment to assist my dental condition.

Name of Patient \_\_\_\_\_

Date of Birth \_\_\_\_\_

Patient signature \_\_\_\_\_ Dated \_\_\_\_\_

Parent/Guardian/  
Legal Representative \_\_\_\_\_ Dated \_\_\_\_\_