Crowns – information for patients

What is a crown and why is it necessary?
A crown, or “cap”, is an artificial restoration that fits over the remaining part of a prepared tooth, making it strong and giving it the shape of a natural tooth.

Crowns are an ideal way to repair teeth that have been broken, or have been weakened by decay or a very large filling. A crown could be used for a number of other reasons, for example:

- you may have a discoloured filling and would like to improve the appearance of the tooth
- you may have had a root filling and need a crown to protect what is left of the tooth
- it may help to hold a bridge or denture firmly in place.

Alternatives
If your dentist recommends a crown it is because they do not feel that a regular filling will provide the best long term protection for the tooth. It may be possible to provide an inlay or onlay instead – these are “fillings” that are made by the laboratory to fit your tooth and fill the cavity in it. Less tooth structure needs to be removed but they provide less protection to the walls of the tooth.

How long does the treatment take?
You will need to have at least two visits. At the first visit, your dental team will prepare the tooth, take the impressions, make a note of the shade of your tooth (if necessary), and fit the temporary crown. At the second visit, your dentist will fit the permanent crown. There will usually be about 2 weeks between appointments.

Stage 1 – preparing the tooth
The dentist will give you a local anaesthetic and the preparation work should feel no different from a filling. If the tooth does not have a nerve, and a post crown is being prepared, then you may not need a local anaesthetic.

The dentist will prepare the tooth to the ideal shape for the crown. This will involve removing a layer of the outer surface, leaving a strong inner core. The amount of the tooth removed depends on the type of crown chosen, but will be done as conservatively as possible.

Once the tooth is shaped, the dentist will take an impression (mould) of the prepared tooth, one of the opposite jaw and possibly another to show the way you bite together. The impressions will then be given to a dental technician, along with any other information they need.

In root-filled teeth it may be necessary to insert a post into the tooth root before placing a crown. A post gives support and helps the crown to stay in place. The surface of the tooth may be removed down to the level of the gum.

A post can be made of prefabricated stainless steel which the dentist can fit directly into the root canal and then build up around to make a strong “core”, or a custom-made post and core can be constructed by a dental technician to accurately fit the

shape of the prepared root canal. The post and core is placed into the root canal and cemented in position, ready for the crown to be attached.

A temporary crown will be made so that you can use the tooth while you wait for the crown to be made. This crown may be more noticeable but is only temporary. You should avoid eating foods that contain strong colours such as curry, berries and red wine as these can stain the temporary crown – the permanent crown will not be affected. It is important that you contact the practice if the temporary crown comes out as it prevents movement of the teeth either side.

After preparation, the tooth can sometimes feel very sensitive to temperature, especially cold. This will ease once the permanent crown is placed.

Stage 2 – fitting the crown
Before cementing the crown, the dentist will show you how it looks in a mirror. It is vital to say at this stage if there is something you are not happy with, as it can be resolved before the crown is cemented permanently. When you and your dentist are happy with the fit and appearance of the new crown, it will be fixed in place with special dental cement or adhesive. The cement forms a seal to hold the crown in place.

How will the crown look and feel?
Crowns can be made of a variety of different materials and new materials are continually being introduced. Some of the most popular options are listed below:

Porcelain bonded to metal: a metal base (either precious or non-precious metal) is made and then porcelain is applied in layers over it.
Porcelain: these crowns are made entirely out of porcelain and are not as strong as bonded crowns, but they can look very natural and are most often used for front teeth.
All-ceramic: this modern technique offers a metal-free alternative which can give the strength of a bonded crown and the appearance of a porcelain crown. It is suitable for use in all areas of the mouth.
Metal-alloy crowns: gold is one of the oldest filling materials. Today it is used with other metal alloys to increase its strength, which makes it very hardwearing. These crowns are silver or gold in colour.

If a tooth-coloured crown is chosen, the crown will be made to match your other teeth as closely as possible. The shade of the surrounding teeth will be recorded, to make sure that the colour looks natural and matches those teeth.

Because the shape of the crown will be slightly different from the shape of your tooth before it was crowned, you may be aware of it at first. Within a few days it should feel fine, and you will not notice it. The crown may need some adjustment if your bite does not feel comfortable, and if this is the case, you should ask your dentist to check and adjust it. Rarely, patients have reported muscle soreness or tenderness of the jaw joints (TMJ).

Risks and complications

How long your crown lasts depends on how well you look after it. Properly cared for crowns should last for many years. Your dentist will be able to tell you how long your crown may be expected to last.Although all care and diligence is exercised when

preparing teeth for crowns, there are no promises or guarantees of anticipated results or the longevity of the crown.

Prior to preparing the tooth for a crown, the dentist will take an x-ray to ensure the tooth is healthy and strong enough to support a crown. This allows any other necessary treatment to be carried out before the crown is fitted. An x-ray will show decay, infection at the base of the root, and some fractures, but is unable to show hairline cracks.

A local anaesthetic will be used during the preparation of the tooth. In rare instances patients may have a reaction to the anaesthetic. There may be swelling, jaw muscle tenderness or even numbness of the tongue, teeth, lips, jaws and/or facial tissues which is usually temporary, or, rarely, permanent. You may need to hold your mouth open for long periods of time during the treatment. This may leave your jaw feeling sore or stiff and may make it difficult to open wide for a few days. This will ease with time.

Following preparation of the tooth, you may experience mild to severe sensitivity. This may be for only a short period of time or for longer. If it persists, please contact the practice so the dentist can review it for you.

Although a crown can make a tooth stronger by replacing missing tooth structure, there are still risks to the tooth. Risks include:

- the nerve of the tooth can die off due to the extent of previous decay or trauma, or the extent of dental work required to restore the tooth – this would result in the need for root canal treatment or extraction of the tooth
- prolonged/severe sensitivity may also require root canal treatment

Crowns can chip or break. Many factors could contribute to this such as chewing excessively hard foods, changes in biting forces, traumatic blows to the mouth etc. Unobservable cracks may develop in the crown due to these factors, but the breakage may not become apparent until later. Breakage or chipping due to defective materials seldom occurs, but if it does so, it would be soon after fitting. This would be covered by the laboratory's manufacturing guarantee.

After a porcelain+metal crown has been fitted, you may notice dark lines appearing along the gum edge. This is the metal lining of the crown and may become visible as gums recede. This can sometime be covered over with a cosmetic filling, but you may need to consider a new crown.

Your tooth can still be affected by dental decay so it is important to keep the crown just as clean as you would your natural teeth. The crown itself cannot decay, but decay can start where the edge of the crown joins the tooth. Brush last thing at

night and at least one other time during the day with a fluoride toothpaste, and clean in between your teeth with

‘interdental' brushes or floss. If decay does occur, you may require further treatment on the
tooth, a new crown, or possibly extraction.

It is your responsibility to seek advice from the dentist should you experience any problems.

By undergoing the treatment, you accept the risks mentioned above, possible unsuccessful results or failure of the crown.