

## Crowns – Making the Tooth Whole Again!

When a tooth has fractured substantially, has had a number of large fillings or is showing crack lines, it may be appropriate to comprehensively restore it with a crown as there is not enough good tooth structure remaining to support a very large filling. A crown is commonly called a cap. As a cap fits over your head, you can think of a crown as a hat for your tooth. The crown covers all surfaces of the tooth it restores, providing full 360 degree coverage around the tooth just like the metal rings that hold the wooden planks on a wine barrel together. This makes the damaged tooth strong again and offers protection when chewing and prevention from fracturing.

At the first appointment, the tooth is first reshaped to form a foundation for the crown to attach to, called a core, and an impression is taken of this. A plastic temporary crown is placed to cover the prepared tooth while a Dental Technician makes the final crown using the impression in a Dental Laboratory. Usually 2 weeks later, the final crown is ready to be cemented onto the tooth at a second appointment.



**Before**



**After**

**Very worn, discoloured upper front teeth with large fillings are restored with all-porcelain crowns**

Traditionally, crowns were made from metals such as gold for strength. This resulted in long-lasting crowns which were very durable during function. However, like amalgam fillings, the silver or gold colour of metallic crowns became less and less acceptable aesthetically. To make them look more tooth-like, a layer of porcelain can be added onto the metal crown to form what is known as porcelain fused to metal (PFM) crowns or veneered crowns. This combined the tooth-like aesthetics of porcelain with the strength of the underlying metal. However, being made of 2 layers, these crowns necessitate more tooth preparation to give room for the additional layer of porcelain and there is a risk of porcelain fracturing away from the underlying metal over time.

## All-Porcelain Crowns – Perfect Combination of Aesthetics and Strength

Recent advances in porcelain strength technology has allowed crowns to be made without any metal at all, commonly known as all-ceramic crowns, all-porcelain crowns or non-metallic crowns. Because porcelain is inherently weaker than metal, these all-ceramic crowns were initially only suitable for front teeth where aesthetic demands are extremely important but there is less need for maximum strength unlike back teeth areas where chewing forces are much greater. Newer high strength porcelains such as Alumina and Zirconia have resulted in all-ceramic crowns that are strong for back teeth as well. However, there is a slight compromise in aesthetics with these materials, resulting in crowns that look a little more opaque than what a real tooth should look like. Currently, all-ceramic crowns made with Lithium Disilicate such as e.max provide the best of both worlds - great aesthetics combined with strength suitable in both front and back teeth areas.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

### **An upper right front tooth with a fracture near the gum is restored with an all-porcelain crown**

At Central Brisbane Dental, we always work with trusted Australian Dental Technicians and Dental Laboratories to make crowns that best suit the needs of the tooth it restores in terms of aesthetics and strength.

**Central Brisbane Dental**

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