

Talking with Patients

Bonded Bridges

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WHAT IS IT?

Dental bridges are prostheses used to replace missing teeth. *Bonded* bridges are more conservative of sound tooth structure than are traditional fixed bridges because the replacement tooth is joined to the supporting teeth on each side without the need for the teeth to be substantially prepared (ground) first. Bonded bridges benefit from adhesive dentistry techniques: the surfaces to be bonded are acid-etched to create microscopic retentive features and are bonded to one another using an adhesive resin material. The two most common types of bonded bridges used today are the *Maryland* bridge and the *Carolina* bridge, named for the universities where they were first introduced. In the Maryland bridge, the replacement tooth (or teeth) consists of porcelain fused to metal with thin metal wings that extend and are bonded to the back of the adjacent teeth with an adhesive resin cement. Some conservative tooth preparation is required for this design. The Carolina bridge uses a metal-free, custom-made porcelain tooth that is bonded to the adjacent teeth with an adhesive resin cement. No tooth preparation is needed for this type of bridge, but it is not as strong as a Maryland bridge.

ADVANTAGES

- Conservative of tooth structure (primarily with Carolina bridge design)
- Esthetic
- Lower cost
- Do not require surgery (as opposed to implant)

DISADVANTAGES

- Not as strong as conventional bridge or implant; may come loose more easily
- Do not work well in short teeth
- May not be as esthetic as implants

WHEN IS IT NEEDED?

Bonded bridges are needed when a single tooth is congenitally missing or lost owing to trauma, caries, or periodontal disease, and the teeth adjacent to the space are sound and have no crowns (caps) or large fillings. Because the metal structure provides additional strength to the Maryland bridge design, these bridges can be used for replacing both front and back missing teeth. Carolina bridges, being more esthetic, are often the best choice of bonded bridge for

missing single front teeth but are considered less permanent.

Alternative treatments for replacing missing teeth include dental implants, conventional fixed bridges, and removable partial dentures. Dental implants, although a good treatment alternative for many patients, are not always feasible. (Dental implants were presented in the *Journal of Esthetic and Restorative Dentistry* Talking with Patients, Volume 13, Number 4.) Conventional fixed



A bonded Carolina bridge was used to replace a congenitally missing front tooth; A, Frontal view of missing tooth; B, Porcelain Carolina bridge replacing the missing tooth.

bridges should be considered when the teeth adjacent to the space already have caps or large fillings, and removable partial dentures can be used when multiple teeth are missing. Overlapping indications exist for all these options. Your dentist can guide you as to which option is best for you.

CONCLUSIONS

Bonded bridges are used to replace missing teeth by bonding a porcelain tooth to the natural teeth adjacent to the space. Bonded bridges can be metal supported (Maryland bridge) or metal free (Carolina bridge). Because bonded bridges are not as strong as conventional

bridges or implants, they should be used mainly to replace front teeth in patients that have a normal bite.

The preceding photographs show a bonded Carolina bridge used to replace a congenitally missing front tooth.

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