What is a veneer?
Resolving the confusion

About 20 years ago, direct resin veneers were introduced to a suspicious and doubting profession. To the surprise of many, these veneers proved themselves able to be placed successfully, improving the color of discolored teeth and straightening slightly malpositioned teeth. While many of the early direct resin veneers that I placed have lasted 20 years and were successful technically, the resin-based composites of the time produced color and smoothness that were only minimally acceptable. Today, after significant improvements in resin-based composite materials, dentists can place direct resin-based composite veneers that have nearly perfect contour, smoothness and color.1

A few years after the advent of direct resin veneers, the technique of bonding indirectly made ceramic veneers to acid-etched tooth enamel surfaces was introduced. Because the indirect technique is easier and requires less clinical time, it is by far the most popular veneering technique. The majority of practitioners prefer to prepare teeth at one appointment, have laboratory technicians make the veneer restorations and seat the restorations at a second appointment.2

There is confusion about the definition of a veneer restoration. In practice, veneer restorations vary from a small amount of directly placed resin-based composite on the facial surface of teeth to a restoration placed over teeth grossly cut, deeply into dentin, with only a small strip of enamel remaining on the lingual surface of the tooth.

Confusion even exists about the name of these restorations. Both direct and indirect veneer restorations have been called “veneer,” “laminate,” “laminate veneers” or just “composite restorations.” After reading formal definitions of the words, I suggest that these restorations most appropriately are called “veneers.” Checking your dictionary probably will verify that “veneer” is the correct terminology. (The phrase “laminate veneers” seems to be a redundancy analogous to the term “car automobile.”)

In this article, I will discuss the currently popular types of veneers, make suggestions about situations in which each type is most appropriate and encourage the ethical use of veneers.

Types of Veneers

Direct resin-based composite. In my opinion, direct resin-based composite veneers should be used far more often because they require only minimal or no tooth-structure removal, and the colors and blending of the restorative material with the tooth can match almost any tooth color and contour. The resin-based composites, or RBCs, available today have excellent smoothness, strength and color, and they are relatively easy to use. However, some dentists strongly prefer to have the veneers made in the laboratory, and it is not likely that their opinions will change.

Nevertheless, for those practi-
tioners who will place them, direct RBC veneers are indicated when teeth need restoration of small-to-moderate–sized carious lesions, accompanied by mild discoloration or malpositioning, or when there are no carious lesions but a need to cover mild discoloration or to correct slight-to-moderate tooth malpositioning.

Direct RBC veneers require artistic ability and dexterity, but they are not accompanied by a laboratory bill, and the dentist is in total control of the clinical procedure. Often, this type of veneer is indicated rather than more extensive veneers because of the lower cost to the patient and the potentially excellent esthetic result. When teeth are severely discolored, or correction of significant tooth malpositioning will be accomplished by veneers instead of orthodontic treatment, more extensive indirect placement veneers are indicated.

**Indirect ceramic veneers without tooth structure removal.** One of the earliest suggestions regarding indirect ceramic veneers indicated that teeth could receive veneers without anesthetic or removal of tooth structure. In some situations, this type of veneer can be successful. It should be obvious that these veneers should not be placed on teeth in labial or buccal version or on teeth that are large and highly contoured, because the combination of the facially oriented or large teeth and the thickness of the veneers creates an unsightly “buck-toothed” appearance. This technique certainly is less traumatic and more reversible for patients than are more extensive veneer procedures, and it is a simple and less time-consuming procedure for dentists when compared with the technique required for laboratory-made veneers.

Currently, placement of “stock” indirect ceramic veneers, without cutting tooth structure, is being advertised and popularized. When good judgment is used about when to accomplish the technique, the resultant “stock” veneers can be strong, long-lasting and esthetically acceptable. However, this technique cannot be adapted successfully to many teeth.

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**Indirect ceramic or resin-based composite veneers with minimal tooth preparation.** The technique of placing fired-ceramic veneers over teeth with minimal tooth reduction (up to about 1 millimeter) has dominated veneer procedures for about 15 years. Pressed-ceramic veneers often are used, but they require reduction of more tooth structure. Indirect resin-based composite veneers have been used minimally for several reasons: dentists’ ability to place direct resin-based composite themselves; the difficulty in bonding laboratory-made, fully cured resin-based composite veneers to acid-etched tooth structure; and the color unpredictability and difficulty of color correction at seating.

Thin, laboratory-made ceramic veneers have composed the majority of veneers placed to date. Minimal tooth reduction, almost all in enamel and not extending into dentin, provides excellent retention of these thin ceramic veneers to acid-etched enamel. Properly made, etched ceramic placed over etched enamel simply does not come off. In cases of accidental breakage or subsequent dental caries, such veneers are extremely difficult to remove and must be cut from the acid-etched enamel.

When indirect ceramic veneers are placed on deeply cut teeth and bonded onto dentin surfaces, the retention of the dentin bonding is good at first. However, experienced veneer users know from clinical experience that many such veneers come off only months or years after cementation. After years of clinical experience, it is my opinion that veneers bonded to deeply cut dentin surfaces are far less successful and have shorter longevity than thin ceramic veneers placed on minimally cut acid-etched enamel.

Unfortunately, laboratory technicians prefer to make thick veneers, as it is easier for them to create adequate color in porcelain when the veneers are thick. As a result, technicians encourage dentists to prepare teeth deeply for veneers, often unaware of the clinical bonding and retention disadvantages of thick veneers placed on deeply cut dentin.3

Whenever possible, clinicians should avoid placing thick ceramic veneers bonded to deeply cut dentin surfaces to prevent postoperative tooth sensitivity and increase the veneers’ longevity. There are techniques that allow laboratory
technicians to make thin ceramic veneers that are beautiful, strong and long-lasting and that dentists can seat with confidence over properly acid-etched enamel surfaces. These thin veneers have predictable, long-lasting strength; have lifelike aesthetic qualities; are associated with almost nonexistent postoperative tooth sensitivity; and involve minimal trauma to and destruction of tooth structure.

**Indirect ceramic veneers placed over teeth prepared primarily into dentin.** In recent years, there has been an obvious trend to cut teeth deeply into dentin surfaces and to place thick, fired or pressed ceramic veneers. These veneers usually are beautiful because they are about the thickness of a ceramic crown, allowing incorporation of opaques and various colors and translucencies into the ceramic material. Usually, only a thin strip of enamel remains on the lingual surfaces of teeth prepared for these types of veneers.

Several well-known clinicians, some laboratories and a small number of practitioners have promoted this type of veneer to correct malpositioned teeth or alleged occlusion problems instead of accomplishing orthodontic treatment. Occasionally, dentists now are seeing in their practices or on nationally televised “makeover” programs mouths with such veneers on all or most of the teeth. Such treatment has been promoted to patients by proponents of this extreme veneer concept as being necessary to correct malocclusion, discoloration of teeth or temporomandibular joint dysfunction. Such radical therapy can improve oral esthetics for an unknown period, but the severe removal of tooth structure, the resultant postoperative tooth sensitivity, the enormous and unpredictable changes in occlusion and the frequent release of the veneer from dentin-bonded surfaces should give practitioners reason to consider orthodontics or less severe restorative treatment.

I strongly suggest that before agreeing to radical veneer therapy, patients should be educated about the availability of well-proven, long-lasting, alternative treatment concepts, such as orthodontic therapy, thin veneers bonded to enamel surfaces, tooth bleaching, minimally invasive tooth-colored inlays and onlays and occasional crowns, Class II resin-based composite restorations and minimal occlusal equilibration. Almost all of these conventional alternatives to extreme veneer therapy are less radical, more predictable and reversible, and less expensive for patients.

The patient’s motive to have radical veneer therapy usually is related to the desirable immediacy of the treatment, which often requires only a few appointments. However, in my opinion, the expense, tooth destruction and the questionable long-term service potential of this treatment are significant reasons for most patients to avoid this treatment.

When significant occlusal changes are indicated, or teeth have severe caries, crowns often are indicated instead of veneers.

**CONCLUSIONS**

There are several types of veneers used commonly in practice today. Fired or pressed-ceramic veneers are the most popular. Thin ceramic veneers bonded to acid-etched enamel are the most common, and they have been suggested as the most acceptable, predictable type of veneer. Direct resin-based composite veneers have been encouraged for the situations in which they are indicated. Thick ceramic veneers placed over deeply cut dentin surfaces have been discouraged because of the associated gross reduction of tooth structure, common postoperative tooth sensitivity, occasional deficiency in retention and unpredictable longevity.

Educational information on topics discussed by Dr. Christensen in this article is available through Practical Clinical Courses and can be obtained by calling 1-800-223-6569.