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HAVE YOU
GOT WHAT
IT TAKES

BY ROBIN GINSBURG

More Than The Eye Can See

Generally, when one thinks of esthetic dentistry, or cosmetic dentistry, as it is popularly called, the image of a dashing and debonair hero or a sultry siren flashing their pearly whites for a closeup shot comes to mind. However, depending on your source of information, cosmetic dentistry covers a wide spectrum of procedures, from the removal of stains on the enamel of a tooth to reconstruction of part of a jaw that has been removed because of cancer surgery.

New methods and materials are continuously being discovered, but various examples of cosmetic techniques can be traced back in history thousands of years. Replacement of teeth was evident in Egypt, where teeth encircled with gold were found in the place of missing molars. Etruscans widely used human as well as animal teeth for needed replacements. Documentation going back 4000 years in Japan refers to "Ohaguro," a custom of tooth staining. And, replacing of teeth was specified (for women only) in the Talmudic Law of the ancient Hebrews.

From those ancient times, valid documentation wasn't evident again until around 1928, when Dr. Charles L. Pincus began working with makeup artists at some of the major studios in Hollywood. They wanted to find a way to improve the photogenic appearance of the stars, because they were finding that spaces in the teeth, stains, or twisted teeth photographed dark or completely black. The makeup artists also wanted some kind of "appliance" that would actually alter the visual appearance of the performer, e.g. for Frankenstein and Dracula characterizations. Finally, these appliances had to be effective without hampering speech or being a constant source of irritation.

Pincus developed the "false front" (now called Hollywood Facings), very thin porcelain covers to go over spaces or twisted teeth. These false fronts allowed for the creation of many illusions, making teeth look wider, thinner, smaller or larger. Many techniques used by dentists today were first tested in those Hollywood studios in the Twenties.

In the 70's, along with Dr. Pincus, Atlanta dentist Dr. Ronald E. Goldstein, author of *Change Your Smile*, started the American Academy of Esthetic Dentistry and helped develop an "esthetic approach" to dentistry using new techniques and materials in bonding, laminating, orthodontics, bleaching and crowning. Not many dentists at that time were receptive to this method of treatment, but with more and more people demanding these "cosmetic" changes, most dentists began including this type of approach in their practices.

Nowadays, dentists consider the cosmetic aspects of any procedure that is done. According to Dr. Wayne Suway, General Dentistry: "Whatever I do in dentistry, I do as an outlook to cosmetics; for example, with a crown — I try to match the shade and the form so that it is cosmetically pleasing. I try to look at the whole individual, the whole mouth and see what's needed."

Chairman of the Department of Graduate Prosthodontics at Emory University, states that "all dentists, in everything they do, should consider esthetics. The mouth, other than the eyes, is the most expressive organ in the body."

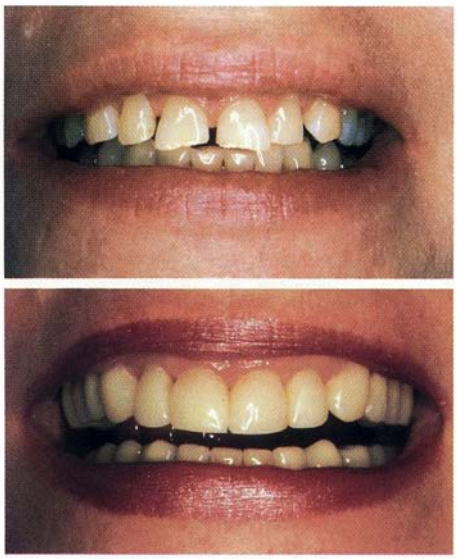
As materials and techniques in cosmetic dentistry become more sophisticated, the patient and the dentist have many options. For a strictly cosmetic procedure, "beauty is in the eye of the beholder."

may look at a space between his or her front teeth as unacceptable, while another may consider it a part of his/her personality, or even capitalize on it as did actress/model Lauren Hutton. It is very important for patient and dentist to work closely together to assure that the end results are the desired results.

Subtle changes can be easily achieved: a smile can be "softened" by rounding the angles of the teeth slightly; a wide face can be made to look narrower by simply narrowing the teeth; a thin face can be given a wider look by squaring the teeth. Dr. Goldstein says that some people want a "sexy smile." One way that Goldstein helps make a woman look sexier is to sharpen cuspids with a small space inserted to achieve the look of a tigress.

If there is a functional problem, that must be treated first. Dr. Charles Smith, Chairman of the Department of Orthodontics at Emory University, states the necessity of starting with the functional cause, because "if you just build the facade, it will eventually cave in again."

will only do cosmetics if the rest of the mouth is healthy. "Why should I do something now that when I look at it in two years is going to fail, because the person has no intention of caring for his or her teeth in the interim?" What can be achieved in the realm of cosmetic dentistry is almost endless, but the bottom line is what the individual wants achieved.



This 51-year-old woman was aged beyond her years because of advanced tooth wear and a collapsed bite. The bite was corrected with full crowns on all the back teeth. The front teeth were bonded with composite resin to lengthen and help create a younger smile line.

COMPOSITE RESIN BONDING is painting a tooth-colored material directly onto the tooth. This technique, developed by Drs. Buonocore (pronounced bone-a-core) and Bowen using various types of plastics and other materials, can be used to alleviate stains on teeth, to repair chipped teeth, fill in spaces or change the shape of a tooth. The technique is fairly simple and painless — the enamel is prepared with a solution which produces microscopic pores to which the bonding material adheres. "A good aspect of bonding," says Dr. Crawford, "is that it is a very conservative technique; you are not reducing the tooth structure and not cutting away enamel."

a doctor to put on a plastic that was reinforced, that looked good, that looked like a tooth, and it was immediate. It made

PHOTOS COURTESY OF DR. RONALD E. GOLDSTEIN, D.D.S.

a lot more people want to do this procedure, because you could change the shape of a tooth, repair broken and deformed teeth, change the color of a tooth all without anesthetic and all with one appointment." Dr. Suway explains that "when a person is going to get a tooth or teeth bonded, a 'study mold' can be made of their mouth and the portion to be bonded is waxed, so the person sees what the results will look like before the procedure is done."

Another advantage of bonding is that it can be completely reversible — painless and without damage to the tooth. New materials have been developed that are harder and longer-lasting. "Bonding lasts about five to eight years," states Dr. Crawford, "but the new materials may last ten years; they haven't been out long enough yet to know." Manufacturers are working on materials that can withstand water, heat and cold, biting forces of thousands of pounds per square inch and be esthetically pleasing.

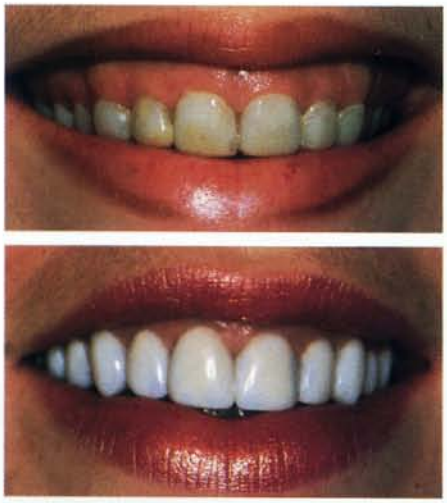
An area of caution dealing with bonding is the gum tissue. If not properly smoothed off, it can cause the gums to become red and swollen, or worse yet, cause actual gum disease. Dr. Goldstein suggests certain cautions in caring for teeth that have been bonded, including not chewing ice, flossing teeth at least once daily (but pulling out the floss horizontally), having teeth cleaned three or four times a year, drinking a minimum amount of coffee, tea, colas and grape juice and avoiding directly biting down on hard or sticky foods.

BLEACHING. Treating the tooth with a chemical bleaching agent to remove stains or discolorations. Bleaching is an attractive treatment for several reasons. First of all, it is the least expensive method of stain removal. It is usually painless (for adults); there is no tooth reduction and results are relatively rapid. Bleaching usually requires from three to ten treatments and the effects are cumulative. Bleaching is effective in about three out of four cases.

The teeth to be bleached are isolated via rubber dams. An oxidizing agent is applied, and the dentist activates the process by using heat or a combination of light and heat. Ten to twelve teeth can be bleached during a single appointment. Ironically, teeth with root canals are more easily bleached than a "living" tooth. A common method is to reopen the canal, place a bleaching solution into it and reseal it with a temporary filling. This process is repeated until satisfactory results are reached.

Bleaching is not effective for darker stains, particularly tetracycline stains. Similarly, white spots on teeth are extremely difficult to match, and bleaching does not bring the desired results. Another problem that may occur is called a "ribbon effect," which is the result of different shades on a tooth's surface bleaching out into various bands of colorations.

Costs average from $75 to $250 per treatment.



Before her teeth were bonded to improve the color, "gum raising" or cosmetic periodontal surgery was done so less tissue showed when she smiled.

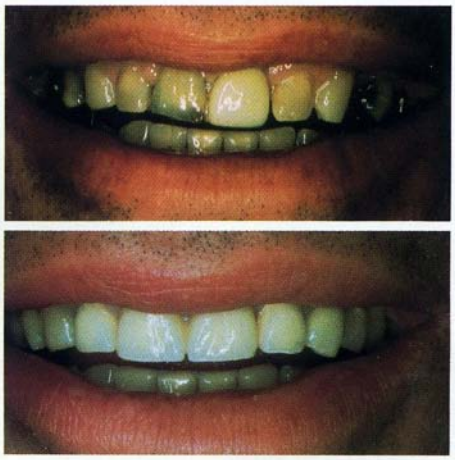
LAMINATE VENEERS. Similar in concept to a false fingernail, a very thin layer of porcelain, glass or plastic is formed in the laboratory and then bonded to the tooth. The tooth and the inside of the laminate material are etched with acid and put together with a composite resin cement, making the tooth even stronger than before. Veneers are used as a treatment for stains that are too dark for bonding. Tetracycline stains are good candidates for veneering, porcelain seeming to be the material of choice. If a number of stained teeth are going to be covered with veneers, it is essential that all the veneers be prepared at the same time, so that you have a consistency of colors for the most natural looking results.

Sometimes the choice of whether to veneer or not to veneer is a judgment call. "To use porcelain veneers," says Dr. Crawford, "you have to prepare the teeth

halfway in the enamel or more to get bonding strengths, to not have the teeth 'overbulk.' When you do that, you can't return to the tooth by taking the veneer off. It is less conservative than what we want to do."

Dr. Goldstein says: "An offshoot of porcelain veneers can be done in the back of the mouth, where they're called porcelain inlays or porcelain onlays. They're made in the laboratory and then bonded to the teeth, almost the same way as a silver filling is prepared." With the esthetically pleasing nature of porcelain, the fact that it's very strong, doesn't discolor and doesn't chip easily, Dr. Goldstein goes on to say: "Cosmetic dentistry is changing from direct fillings to indirect porcelain inlays."

The cost of laminate veneers, as well as porcelain inlays and onlays, is more expensive than composite resin bonding and varies with each dentist.



All upper teeth were either crowned or bridged to restore proper tooth form and lighter color. The front two teeth were lengthened with crowns, creating a more youthful look. Slight staining was done between the front teeth to make them look like natural crowns. Opaque, whitish areas were placed on the bottom edges of the front teeth to create "highlights" for better light reflection.

CROWNS. Popularly called a cap, it is a protective cover for the tooth, usually made of plastic, porcelain, metal or a combination of porcelain and metal. Crowning is used when there isn't sufficient tooth structure left for bonding and usually for a fractured back tooth, as a treatment for a severely decayed tooth, to replace a deformed tooth or sometimes as a solution for correcting crowded teeth. In situations of choice, crowns are often used as a last resort, because they are completely irreversible and are the most expensive

cosmetic solution. Yet, a properly made crown is often the most esthetic and strongest choice of all techniques.

Although a metal crown is the strongest, it is almost never used today. Porcelain, bonded to metal crowns, is used frequently. In the case of a high lipline, where there is a chance of metal showing, a porcelain butt joint is used, which is a crown with a metal interior completely surrounded by porcelain. If done correctly, the crown will duplicate the shape of the natural tooth as closely as possible.

Recent discoveries in materials have made a non-metal crown viable. "The new ceramics are so strong that they're suitable for 95 percent of the population in the back of the mouth," says Dr. Goldstein. "New reinforced porcelains are strong; they're usually made up of aluminum crystals or aluminous porcelain." Dr. Goldstein continues: "There are new high strength porcelains that are so strong, they can chew in the back of the mouth without metal backing." The second and newest innovation in crowns consists of those made of cast glass. The glass is baked for hours until it becomes frosted, a procedure called ceraming. When the glass is in the frosted state, it is able to take on color. Another new material being used is hydroxylapatite, or enamel crystals, which is actually an artificial enamel. It acts in the same way as cast glass when heated and wears like enamel.

The biting restrictions mentioned for bonded teeth should be adhered to for crowns, as well. It is also important to significantly reduce the amount of sugar consumed in order to prevent the cement that holds the crown in place from washing away due to decay. Besides professional cleanings three or four times annually, a yearly fluoride treatment is essential. The average life of a crown is from five to fifteen years, depending on your care.

Cost of crowns range from approximately $350 to $1500 per tooth.

ORTHODONTICS. The use of braces and other devices to correct tooth positions. Although the longest treatment by far (6 to 24 months), it preserves the natural teeth and is the most permanent solution. If a problem with bite is involved, an orthodontic treatment should always be favored, since it corrects the cause of the problem. According to Dr. Charles Smith: "In the last

few years we're seeing much more adult orthodontics." Over twenty percent of all orthodontic patients are adults.

Clear plastic braces are being utilized in addition to the traditional metal type. Known as "invisible braces," they are mounted either to the front or the back of the teeth. Plastic brackets have an innate quality of rapidly discoloring; therefore, they must be changed every few months. Also, because they are a softer material than metal, they're not as effective in torque control and ultimately take longer in the realignment of teeth.

Lingual braces (plastic braces placed on the inside of the teeth) have the same torque and treatment time problems as with plastic braces placed on the front of the teeth. In addition, there is a problem with gum irritation, and they present difficult access for the orthodontists.

Dr. Smith says: "Porcelain braces are now available, although they are expensive. They look nice and the porcelain is hard enough to put torque and angulationas in metal braces, and they don't change color."

In addition to porcelain braces, there have been newly designed metal brackets that are less bulky and more comfortable to wear. Manufacturers are also working on new arch wires (the wires that run across the teeth) that are less conspicuous.

Conscientious cleaning of teeth and of spaces underneath the braces is imperative. A water-powered device is helpful in this cleaning process, and regularly scheduled checkups during the treatment time are a must.

Cost of orthodontic treatment varies from about $1500 to $3500, depending on the number of teeth involved and the type of therapy chosen.

PROSTHODONTICS. Restoration of missing structures — teeth, parts of a missing jaw, an eye or an ear. Appliances are made for the missing structures. The largest percentage of prosthodontic patients come in for crowns, bridges and dentures. "People tend to forget, when they talk about esthetics in dentistry, that in America today, almost one in every four people over the age of 55 has no teeth at all, and at age 65 that number doubles," states Dr. Di Pietro. "When we talk about esthetics, it's attempting to put all one's skill into adding to an elderly person's beauty, charm, dignity." sf