Ask Dr. Huff....

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Q: Why have my teeth started coming out of my dentures?

A: Dentures are usually made of multiple types of materials. The pink part of the denture is called the denture base. Many types of materials have been used throughout the history of dentistry to make denture bases, including wood, metal, rubber, resin, and acrylic. All of these materials have benefits and shortcomings. Acrylic has proved itself to be very durable and functional through the accepted lifespan of a denture, which the American College of Prosthodontists suggests is 5-7 years. Denture teeth, which are usually made of reinforced acrylic or porcelain, are held into the denture bases through metal pins or holes, called diatorics. Although acrylic bonds chemically to acrylic, the bond between the teeth and the base is weak and unreliable because the types of acrylic used are different.

Denture teeth are usually set individually in wax by a dental technician so that the dentist can verify the bite and how the dentures will look before final processing. Sometimes, dentists set the teeth themselves, depending on their individual skills and preferences. Setting teeth in wax allows the dentist to move the teeth around to create a more natural and/or functional appearance to the dentures. Once the wax-up has been approved, the dental technician secures the denture teeth in position with stone, through a process called flasking. The denture is then heated under scalding water to melt away the wax pattern through a process called a boil-out. Finally, pink acrylic is flowed into the mold left by the wax and compressed around the denture teeth with hydraulic pressure and allowed to chemically cure. Once the acrylic is hard, the denture is removed from the flask, trimmed, and polished to create the denture that is returned to the dentist.

During the flasking process, there are times when the acrylic either does not adequately bond to the denture teeth or adapt adequately to the diatorics. Unfortunately, there is nothing that can be done to prevent this error from occuring occasionally. Oftentimes, failure of retention is obvious immediately, and the lab technician would simply repair the denture before returning it to the dentist. Rarely, however, failure of retention is not obvious for several months after the denture has been worn.

A much more common reason for teeth coming loose from denture bases has to do with the age of the denture itself. Remember, the average denture should probably be replaced every 5-7 years. Beyond that time, the acrylic begins to deteriorate and weaken. Since the retention of denture teeth comes from the small amount of acrylic that engages the diatorics and a weak chemical bond to acrylic denture teeth, denture teeth will begin falling out of the denture with time. Since porcelain denture teeth are held in by mechanical retention alone, they are much more likely than acrylic teeth to come loose as the denture ages.

Repairing the denture tooth can be accomplished predictably when the denture is new. Since the characteristics of acrylic change over time, the older a denture is when a fracture occurs or a tooth is lost, the less predictable the repair. The best plan for preventing denture failure is to see a dentist at least annually so that the fit, function, and appearance of the dentures and supporting tissues can be evaluated. As soon as is needed, the dentures should be relined or replaced.

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