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## **Look, Ma, No Novocaine**

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Imagine having a tooth filled without the rrrrrroar of the drill.

Unclench those jaws, open those palms, and prepare to have a cavity repaired without a shot of novocaine. Some Western New York dentists are using an air abrasion instrument that acts like a precise miniature sandblaster to remove dental decay. With the air abrasion system, the only thing that touches the tooth is a stream of tiny alpha alumina particles. The dentist uses a hand piece that shoots air containing the microscopically fine powder. The powder is then removed through a vacuum device.

Alpha alumina is a substance long used in medicine as a binder for pills and in toothpastes. The system generates no heat or vibration, as a drill would.

"I couldn't feel anything. It was just like air," Barbara, 14, of Amherst, said during a recent office visit. "It didn't bother me," she added, though she did have to wear goggles as part of the procedure.

"Due to the widespread use of fluoridation, there is a lower incidence of decay in young adults who may not even require a filling until the age of 25 to 30," said Amherst dentist Dr. Robert Yetto.

"Their needs are in small areas that require repair. This air abrasion system allows us to treat areas when they are small. Unlike drilling a specific geometric shape, I can restore areas and conserve more of the tooth structure."

Conventional drilling requires the dentist to drill a hole of a specific size and shape to accommodate fillings. But now, with bonded materials, dentists no longer have to wait until a cavity grows to a certain size.

"Bonded work is much stronger," explained Yetto. "In the last two years, the advent of flowable composites allows us to fill in a very deep narrow crevice without worrying about air pockets. It's more comfortable for the patient."

Dr. Fred McIntyre, clinical professor of restorative dentistry at the University at Buffalo School of Dental Medicine, explains that "these bonded materials have been improving tremendously over the past 20 years. The tooth-colored restorative material actually strengthens the tooth and wears similarly to the tooth over time."

What's one of the biggest benefits to this procedure? "Preventing dental phobias before they start," said Dr. Bernard J. Kolber, of the Buffalo Dental Group. "I treated three areas in the mouth of a 4-year-old child who literally smiled through the entire procedure."

"Patients always used to comment to me, 'If it wasn't for the noise of the drill, Doc, I'd be OK,' " said Kolber. But now with the gentle humming of air, patients' fears are eased.

"This air abrasion treatment is pain-free. Much of the discomfort with the drill comes from the heat and vibration. It's great for treating young children."

Most patients require no anesthetic for the procedure. Their time in the chair is lessened without waiting for the effects of a shot of novocaine, and patients appreciate leaving the dentist without a numb lip.

The fee for the procedure is the same as for standard drilling.

Air abrasion can be used to remove dental decay, erase stains and repair porcelain bridgework, but it can't remove metal fillings from teeth that require further repair.

"Even when we use air abrasion in tooth preparation, there may be occasion to use the high-speed drill to do a final shaping of the bonded materials and to use the slow-speed drill for a final polishing," said Yetto.

But "chances are, in the next century, there will be a group of people who may never need a shot or hear the whine of a drill."