

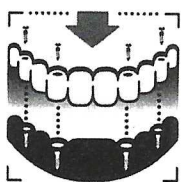
# JAW-DROPPING BREAKTHROUGHS

**The latest techniques dentists use to manage missing teeth**

BY NICOLE PAJER

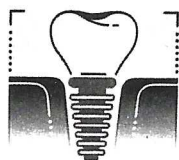
**A**re you missing any teeth? It's nothing to be ashamed of: Nearly 14 percent of adults 65 or older have lost *most* of their teeth.

The main culprit is periodontal disease. In its severe form, this can cause the tissue that supports your teeth, like bones and gums, to deteriorate. The results aren't just unflattering; living without a full set of choppers can affect your ability to properly chew your food and prevent your digestive system from extracting all of the nutrients that food has to offer. But thanks to modern advances in dentistry, you can choose from multiple options for tooth replacement that go beyond the single-tooth implants, partials and dentures of decades past.



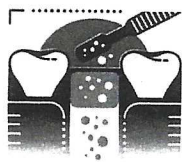
## LESS EXPENSIVE IMPLANTS

For patients who want to replace their dentures with something fixed or nonremovable, the All-on-4 implant is a popular choice. This gives people who are missing all their teeth on at least one jaw the opportunity to get fitted with dental implants. With the All-on-4, four implants are drilled into the arch of the mouth and anchored to the bone. Then a full fixed denture or bridge is screwed into the heads of the implants. Anchoring the dentures in place allows you to eat, drink, smile, laugh and shout without the fear of your teeth slipping out, as some traditional dentures do. "All-on-4 implants are less invasive and cheaper than traditional implants and are a step up from having a removable denture in your mouth," says dentist Rob Raimondi, cofounder of One Manhattan Dental.



## CERAMIC IMPLANTS

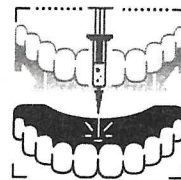
For years, titanium implants have been the gold standard of dental implants. "But in the last 12 years, we have started using metal-free alternatives," says Joe Willardsen, a Las Vegas-based cosmetic dentist with True Dentistry. These ceramic materials can be a particularly good option for patients with titanium or metal hypersensitivity. But their advantages are broader than that, says Willardsen; they can be healthier options for your gums and also more aesthetically pleasing. "You don't get any gray metal showing through the gum tissue," he explains. "That can happen with a traditional implant."



## NEW OPTIONS FOR DAMAGED JAWS

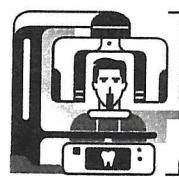
In the past, a lack of bone could keep patients from being able to get dental implants. But new technology has overcome that issue. "Nowadays, we're taking donor bone, cadaver bone or even bovine bone, and grafting that into place using almost like a titanium cage to keep it in

place and let it fuse with your existing bone to gain more height and more substance," Willardsen says. This allows for enough bone to place an implant.



## FASTER HEALING

After dental surgery, like having implants installed, your mouth has a lot of healing to do. Some surgeons are now injecting a patient's platelet-rich plasma (PRP) into the site they are working on to assist with healing. So a surgeon will numb you, take some blood, spin it in a centrifuge in the lab to extract PRP cells, then inject that into your mouth. "The theory is that mixing the bone graft or injecting this into the area will help it heal faster," Raimondi says. Research is still conflicted on whether this benefits the healing process, but "some patients have great results," he adds.



## COMPUTERIZED MOUTH MAPPING

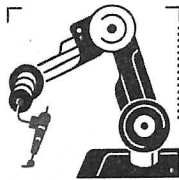
When it comes to placing implants, accuracy is everything. Now many dental offices are obtaining 3D cone beam computed tomography (CBCT). This scanning technology uses a cone-shaped X-ray beam to help dentists map out the implanting process. "An old X-ray wouldn't tell you the bone density or exactly where to place the implant," Willardsen says. "But with this technology, it'll tell me the exact angle to put the implant, where the thickest, best-quality bone is, and how to avoid any nerves." This scanner also informs dentists what brand of implant to use, as well as the diameter and length. "You are essentially doing the surgery on a computer before you even meet the patient, which is pretty cool," Willardsen says. It also helps reduce failure and complications, he notes.

## WHAT TO DO IF YOU CAN'T AFFORD A DENTIST

In a 2022 survey, 43 percent of adults admitted to avoiding the dentist due to the price tag attached. If your finances are keeping you out of the dentist's chair, try these steps.

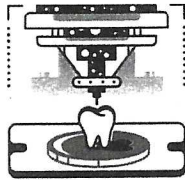
- 1. Don't brush right after meals.** Whenever you eat, the mouth becomes acidic; you can damage your enamel if you don't wait about an hour to brush.
- 2. Ask your dentist for a discount.** No insurance? Some dentists will offer discounted treatments for cash. Also ask if their office offers any payment plans.
- 3. Check your Medicare and Medicaid benefits.** Coverage varies by state. Some offer none, while others provide limited, extensive or emergency plans.
- 4. Try a dental school.** Dental students provide low-cost dental services under the supervision of professors, which is convenient but may take longer to complete.
- 5. Go to a public dental clinic.** Many cities, like Nashville and Atlanta, have free clinics run by government grants, charities or nonprofits that provide all types of care.





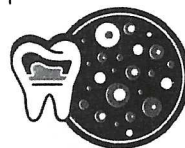
### **SURGICAL ROBOTS**

Dental robotics first came onto the scene in the early 2000s and will soon be a staple in many dental offices. In May, a group of graduate students at New York University College of Dentistry became the first U.S. students to perform a dental implant surgery with the assistance of a computer-guided robotic arm. Placing dental implants into their correct spot requires extreme precision. This is something that a robot can help to perfect. "The robotic machine today is so spot-on. No errors. If the patient happens to move, it moves with the patient," says periodontist Robert Pick, a spokesperson for the American Dental Association.



### **3D-PRINTED DENTURES**

From medical instruments to prosthetics, 3D printers can print just about anything these days: A group of researchers at Northwestern University even restored the fertility of some infertile mice with 3D-printed ovaries! Now they're doing 3D-printed dental implants. The benefits include faster manufacturing time and potentially greater accuracy. They can also give patients a chance to test out new teeth before having them permanently installed, Raimondi says. "We do temporary veneers, crowns or implant restorations so that patients can wear those to try out. Once we are at a place where we're happy with everything, we can then take an optical impression of these temporaries and then 3D print or mill the actual solution to exactly match it," he adds.



### **STEM CELL TEETH**

In the future, you may be able to grow your own replacement teeth. Researchers are currently experimenting with stem cell implants in the lab. "This approach has only been tested on animals; implementing the same procedure on humans could take a number of years," explains Nina Izhaky, a dentist with Manhattan's Tribeca Dental Studio. In the meantime, mouthwashes and toothpastes that contain fluoride can help support remineralization. ■

*Nicole Pajer writes about health for The New York Times, Woman's Day and other publications.*