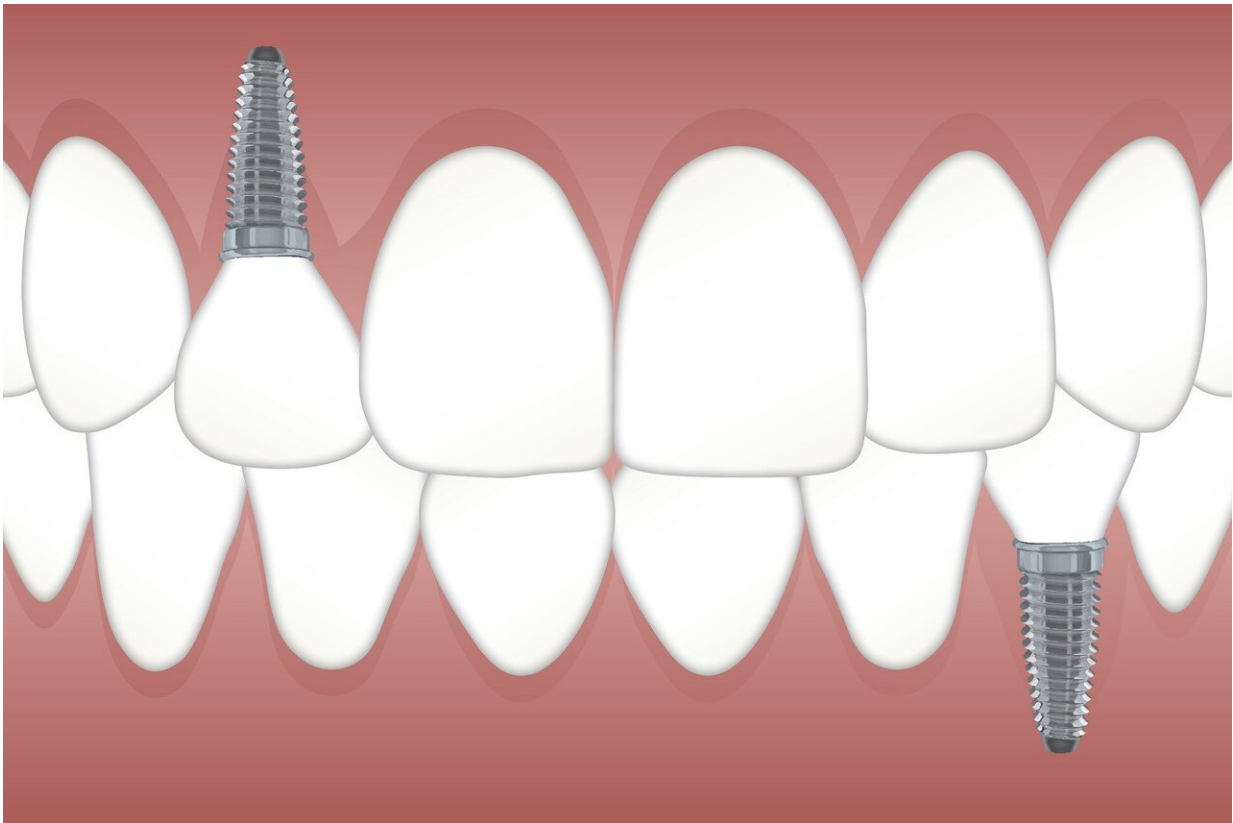


Patients reporting penicillin allergy less likely to have successful dental implants

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Dental implants are more than twice as likely to fail in people who report an allergy to penicillin and are given alternative antibiotics, compared to those given amoxicillin, a new study by researchers at NYU College of

Dentistry shows.

The study, published in *Clinical Implant Dentistry and Related Research*, is the first to examine the impact of prescribing antibiotics other than amoxicillin for dental implants.

Dental implants provide secure, long-term solutions for replacing missing or damaged teeth. A screw-like [implant](#) is surgically placed in the jawbone to act as a replacement tooth's root and anchor the artificial tooth. The bone then fuses to the implant over several months, integrating it into the jaw.

While dental implants are largely successful, a small proportion of implants fail when the jawbone does not properly integrate the implant. This can happen for a variety of reasons, including infection, smoking, or injury to the tooth. To reduce the chance of infection, many dental providers prescribe amoxicillin—an antibiotic in the penicillin family—prior to and following implant surgery. If a patient reports an [allergy](#) to penicillin, alternative antibiotics can be prescribed.

Previous studies have shown that patients with a penicillin allergy experience higher rates of dental implant failure but have not looked at which antibiotics were used. To understand the outcomes of taking different antibiotics, NYU College of Dentistry researchers reviewed the charts of patients who received dental implants, documenting which antibiotics were given and whether their dental implant was successful or failed.

The sample included 838 patients—434 who reported having a penicillin allergy, as well as a random sample of 404 patients without the allergy. All patients without a penicillin allergy were given amoxicillin, while those who reported an allergy were given alternative antibiotics: clindamycin, azithromycin, ciprofloxacin, or metronidazole.

The researchers found that dental implants failed in 17.1% of patients who reported a penicillin allergy, compared to 8.4% of patients without an allergy. Patients who took certain antibiotics other than amoxicillin were much less likely to have successful dental implants; the failure rate for patients taking clindamycin was 19.9% and was 30.8% for azithromycin.

In addition, patients with an allergy to penicillin were more likely to experience earlier failure of their dental implant (less than 6 months) than those without an allergy (more than 12 months).

The reason why dental implants failed in patients with a [penicillin allergy](#) is unknown, the researchers write. It could be attributed to several factors, including reactions to the material used in implants or inefficacy of the alternative antibiotics.

However, research shows that penicillin allergies are overreported—90% of people who say they have penicillin allergies are not truly allergic to penicillin after testing. As a result, health experts recommend testing patients who report a [penicillin](#) allergy to confirm whether they are actually allergic.

"If a patient's actual allergy status is determined prior to [oral surgery](#), we may be able to achieve more favorable outcomes by prescribing amoxicillin to those without a true allergy," said Zahra Bagheri, DDS, clinical assistant professor in the Ashman Department of Periodontology and Implant Dentistry at NYU College of Dentistry and the study's lead author.

"Although a growing body of evidence—at the research level—demonstrates links between oral and systemic conditions, the population still needs to know—at the consumer level—just how connected oral conditions, like the success of [dental implants](#), are to

systemic conditions, like allergies," said Leena Palomo, DDS, chair of the Ashman Department of Periodontology and Implant Dentistry at NYU College of Dentistry. "This study highlights the importance of [patients](#) transmitting accurate, updated systemic health details to their dental care teams."

More information: Bagheri Zahra et al, Dental implant failure rates in patients with self-reported allergy to penicillin, *Clinical Implant Dentistry and Related Research* (2022). [DOI: 10.1111/cid.13082](https://doi.org/10.1111/cid.13082)

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