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Internal contacts are best for severe shortsightedness, study shows

The procedure provides better eyesight with less chance of vision loss. For those whose eyes aren't that bad, laser surgery is the best option.

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Flashy lasers get much of the attention in vision-correcting surgery, but they can't fix severe shortsightedness. For those wearing the thickest glasses, a newer procedure provides better eyesight with less risk of vision loss, according to a recent study.

In this alternative procedure, surgeons insert a new lens inside the eye, behind the colored iris. It's like a contact lens that sits inside the eye. In a May 12 review by the nonprofit Cochrane Collaboration, which analyzes healthcare data, the authors reported that internal contacts make people in the middle-to-high range of shortsightedness happier with their vision than does Lasik.

Laser eye surgery has been practiced in the U.S. for decades. The new-lens alternative, called phakic intraocular lens or insertable collamer lens, has been approved by the U.S. Food and Drug Administration since 2004. Laser surgery is most appropriate for people with mild nearsightedness, doctors say, and the insertable lenses are the best fit for people with very high prescriptions.

What is uncertain is what's ideal for people in the middle. "It's somewhat down to surgeon preference," says study author Allon Barsam, an ophthalmologist at Moorfields Eye Hospital in London.

In a Lasik procedure, doctors use a laser to shave off part of the cornea — the outermost lens — reshaping it so it focuses light properly. But the worse a person's vision, the more the doctors must remove, and there is only so much cornea to work with. Surgeons cannot perform Lasik if a person's vision is very bad or if the cornea is particularly thin.

Internal contacts are getting more popular, says Brian Boxer Wachler, a Los Angeles eye surgeon, as doctors get better at weeding out who isn't a good candidate for Lasik and steer those patients toward the alternative.

For insertable contacts, doctors make a 3-millimeter incision in the eye. They insert the artificial lens through the pupil opening, tucking the lens behind the iris. There it works much like glasses or contacts, realigning the light hitting the eye. Another version, less common in the U.S., sits closer to the front of the eye and attaches to the iris with tiny clips.

The internal lens, approximately 1 centimeter in length, feels much like a soft contact lens, Boxer Wachler says. He compares the new lens to a dental filling; you don't feel it or notice it's there.

The lens lasts a lifetime but can be replaced or removed if it causes problems. This contrasts with Lasik, an irreversible procedure.

The newer procedure is more expensive than Lasik. Boxer Wachler says that high-quality Lasik runs between $2,900 and $3,700 per eye and that getting internal lenses would add $1,200 to $1,500 per eye to that price tag.

"I was kind of skeptical," says Laura Love, 30, when she first heard about internal contact lenses. "I didn't know anyone who'd had it done."

Love, volunteer coordinator at Pacific Crossroads Church in Los Angeles, has such thin corneas that Lasik was not an option for her, and, having developed an allergy to her regular external contacts, she didn't want to wear glasses for the rest of her life. After researching the procedure, she decided to have internal lenses implanted at Boxer Wachler's clinic last year.

"It was not painful — it's a little bit frightening because somebody's operating on your eye," Love says. But it's worth it, she adds. "My vision is so much better. I feel like I have high-def vision."

Eye doctors measure a person's vision in terms of diopters. For someone with vision of -7 diopters or better, Lasik provides excellent results, Barsam says. For -13 diopters or worse — getting into the range of Coke-bottle glasses — internal contacts are the best option.

It's the middle ground, between -8 and -12 diopters, that is in question, Barsom says. He and his colleague, Bruce Allan, also an ophthalmologist at Moorfields Eye Hospital, compiled data from three separate studies that compared laser surgery with internal contacts. These studies covered 132 people and 228 eyes in total. They addressed both midlevel and severe nearsightedness, ranging from -6 to -20 diopters.

One year after the surgery, people in each procedure group had the same chance of normal, 20/20 vision. However, people who had the lenses reported better satisfaction with their vision than those who'd had Lasik.

Those with the internal contacts saw contrasts better and suffered less of the nighttime glare that is common with Lasik. The internal lenses also were less risky to a person's vision; more people in the laser group lost some vision as a result of the procedure.

Any surgery carries potential hazards. Lasik can cause persistent dry eyes. The internal-contacts procedure carries a small risk that during surgery the new lens could brush against the body's natural lens, causing a vision-clouding cataract.

Infection is also a concern. With internal lenses, there is theoretically more risk of infection inside the eye, since the surgery cuts deeper. However, Barsam says, he has never heard of a case of infection for internal lens implantation (his study was too small to find such rare side effects). Cataract surgery carries an infection risk of approximately 1 in 2,000, he says, and he anticipates it would be even lower for internal contacts, because inserting them is a less involved procedure.

Overall, Barsam and Allan concluded that internal contacts might be a safe alternative to Lasik for people with low- to mid-range shortsightedness. However, Barsam noted that there is little known yet about the long-term effects and rarer side effects of internal lenses, since they are newer.

Boxer Wachler says the results are so good that he feels comfortable using the lenses for people with midlevel nearsightedness in the -7 to -10 diopter range. The lenses have been used for many years in Europe, he noted, where they have proved quite safe.

"I don't really anticipate there to be any surprises that we don't know about this lens," he says.

However, both he and Barsam stress that Lasik still is the way to go for people with mild vision problems.

"For lower prescriptions, the advantage [of internal contacts] disappears," Boxer Wachler says.