



CATARACT SURGERY

Patients should hear about all options.



**BY RUDY M.M.A. NUIJTS,
MD, PhD**

Cataract surgery is constantly changing. Forty years ago, surgeons used intracapsular cataract extraction (ICCE) techniques that required a 180° corneal section and meant weeks of recuperation for the patient.

Patients were left aphakic and were encumbered by thick spectacles postoperatively. In the 1980s, IOLs began to enter ophthalmic practice, and extracapsular cataract extraction techniques were developed. Kelman's revolutionary innovation of phacoemulsification eventually allowed surgeons to remove a cataract through a 3-mm incision, only to then have to widen the incision to accommodate implanting a rigid PMMA IOL. The advent of foldable IOL materials finally eliminated the need for a large incision, and, in the past several decades, cataract surgery has increasingly become an outpatient procedure with rapid visual recovery. Today, cataract surgery is often considered a refractive surgical procedure.

When we see patients today with signs of a developing cataract, they may be aware of all, little, or none of this history. They may have heard tales from an older relative who had ICCE followed by bed rest for a week with his or her head immobilized in sandbags. Then again, they may have researched the latest premium IOL technologies and come in with strong opinions about what procedure and lens they desire.

Today's ophthalmologist must be prepared to cope with either scenario and many other gradations in between. We must properly educate each patient about the benefits and risks of modern cataract surgery, set appropriate expectations, and help each patient choose the solution that is right for him or her. Further, we must perform due diligence to answer all of our patients' questions accurately and in language that they can easily follow. As examples, the accompanying sidebar lists the top five questions that I am asked by patients, followed by my typical answers and an example of an answer found on the first page of results from a Google search of the same question.

ALL THE OPTIONS

Many countries have national guidelines for providing information to cataract patients. The national guidelines

for the Netherlands, published by the Netherlands Ophthalmological Society, specify that we must share with every patient all options that are available today in cataract surgery. We must make them aware of the existence of premium IOLs, including toric and multifocal IOLs, and explain the advantages, drawbacks, indications, and contraindications for each of these options.

This takes time, and it would not be possible for the surgeon to lay out all of this information for every patient. Therefore, in our department we have created a one-stop shopping model for patient evaluation and education. Every patient who comes in for a cataract evaluation is seen by a team that includes an optometrist, a resident in ophthalmology, and a supervising ophthalmologist. Each patient is evaluated and examined by the team, and, when all the diagnostics are complete, then the IOL and other surgical options are discussed with them. We have manufacturers' brochures for each IOL technology, and we also point patients to our customized brochures, our website, and other resources for further reading on their own.

Once patients have been fully evaluated and educated, we share in the decision-making process with them. In this way, by sharing evaluation and education duties with the optometrist and resident, the surgeon's chair time for each patient is minimized, and patient flow is maximized.

A CONSERVATIVE APPROACH

Our practice is not aggressive in the upsale of multifocal IOLs as compared to some other ophthalmic practices. That is to say, if patients are happy with their reading glasses, we do not make an effort to convert them to multifocal IOL patients. We make them aware of the option, but the initiative to opt for the premium solution must come from the patient him- or herself.

For patients with astigmatism, on the other hand, we take more initiative to suggest the benefits of toric IOLs. We explain that reduction or elimination of their astigmatism will result in better uncorrected vision postoperatively, and that is a benefit that everyone should take into consideration.

There is considerable research indicating that toric IOLs can be beneficial for patients.¹⁻³ There is debate, however,

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QUESTION NO. 1: IS IT POSSIBLE FOR ME TO NEVER WEAR GLASSES AGAIN?

Dr. Nuijts: If we implant a standard IOL in your eye (or a toric IOL for patients with astigmatism), and if we make all our measurements and calculations correctly, there is a good chance you will not need glasses for distance. However, you will still need reading glasses to see things up close. If you are really interested in reducing your need for glasses altogether, we need to discuss multifocal IOLs.

Google hit No. 5: If you have cataracts, they cloud your vision. But if they progress to the point where you need surgery, here is some clarity: Recent advances may help you not only see better, but also stop wearing glasses. In the past, lens implants corrected nearsightedness or farsightedness. But even with them, you'd still need glasses to fine-tune your vision. Those days are gone for many patients.

During cataract surgery today, we often can place special lenses inside the eye that correct more than just nearsightedness and farsightedness. For example, multifocal lenses provide both distance and near vision simultaneously so you won't need to wear reading glasses. The technology does not work well for people who have strict visual needs, so ask if you are a candidate.

The newest—and perhaps most exciting—technology is a computer-guided laser we use during cataract surgery. This laser reshapes the curvature of the front surface of the eye to eliminate astigmatism. When we correct astigmatism, nearsightedness or farsightedness at the same time, we can get as close to ideal distance vision as possible without needing glasses.¹

1. <https://health.clevelandclinic.org/2015/08/can-cataract-surgery-free-you-from-glasses/>

QUESTION NO. 2: CAN MY CATARACT COME BACK?

Dr. Nuijts: You may have heard from some of your friends that they got a second cataract after their cataract surgery. That is not quite correct. Once your cataract is gone, it is

gone. However, when we take your cataract out, we will leave a thin membrane in place that helps to support the lens we implant. Often this membrane becomes cloudy, and we have to do a second procedure with a laser to clear away the membrane. This cloudy membrane is called posterior capsular opacification, but sometimes people call it a secondary cataract. That is what your friends were talking about.

Google hit No. 1: Because a cataract is a clouding or opacification of the natural lens, and cataract surgery entails removal of the natural lens, a cataract cannot come back after surgery. Fortunately, artificial lenses do not form cataracts.¹

1. <http://www.visionaware.org/info/your-eye-condition/ataracts/can-a-cataract-come-back/125>

QUESTION NO. 3: CAN I GO BLIND FROM SURGERY?

Dr. Nuijts: The risk of blindness from cataract surgery is very low. Cataract surgery is one of the safest surgical procedures. Dangerous infections can occur, but their incidence is lower than 0.1%.

Google hit No. 5: Rarely, your vision may be worse than it was before surgery. There's also a very small risk—around 1 in 1,000—of permanent damage to your eye, causing a loss of sight.

However, the majority of people have a good result from surgery and are happy with the improvement in their vision.¹

1. <http://www.nhs.uk/Conditions/Cataract-surgery/Pages/Risks.aspx>

QUESTION NO. 4: CAN I TAKE EYE DROPS TO GET RID OF MY CATARACT INSTEAD OF HAVING SURGERY?

Dr. Nuijts: No, there are no drops; there is only the surgical solution. Some researchers are working on that idea, and some day in the future we may have an anticataract drop, but there is nothing now that can help to eliminate your cataract other than surgery.

Google hit No. 1: The information available here will not be provided by an eye doctor. They are more interested in your money than saving your vision. ... Surgery is the only treatment offered by eye doctors. It involves making an incision into the cornea and removing the contents of the lens capsule. An artificial lens is then inserted. While most of these operations are successful, complications do occur, ranging from minor eye inflammation to devastating vision loss. ... Mark A. Babizhayev, PhD, a scientist based at the Moscow Helmholtz Research Institute for Eye Diseases in Russia, developed and patented eye drops in 1998 which contain the natural di-peptide N-acetylcarnosine (NAC) as its active ingredient. ... One drop is put into the eye twice daily. Within 15 to 30 minutes, the NAC passes through the cornea and the cataract begins to dissolve from the outside of the lens toward the center. There is some evidence that NAC is also beneficial in cases of glaucoma, presbyopia, and other disorders. ... The statistics in the human trials in Russia show that Can-C eye-drops, applied for 6-months (twice daily into the eye) in patients all suffering from senile cataract, had the following results:

- 88.9% had an improvement of glare sensitivity.
- 41.5% had an improvement of the transmissivity of the lens.
- 90% had an improvement in visual acuity.¹

1. <http://www.preventcataract.org>

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about where to set the threshold for indication for a toric IOL. That is, how much corneal astigmatism must a patient have before we recommend a toric IOL? Here, again, we tend to be on the conservative side. Some suggest a cutoff of 0.75 D cylinder, but we favor a cutoff of 1.25 D in with-the-rule and 0.75 D in against-the-rule astigmatism, placing the main incision at the 12-o'clock position.

INFORMED CONSENT

The cataract surgery guidelines for the Netherlands mandate a thorough informed consent. Most of the information we must present to every patient is focused on standard cataract surgery, and additional sections cover the safety and prospective benefits of premium and toric IOLs.

Standard cataract surgery. We describe the procedure and the potential complications such as endophthalmitis, persistent macular edema, and other possible sequelae. We explain that there must be a period of 2 weeks from the first cataract surgery to the second, and the first eye must be evaluated before we proceed with surgery in the second eye.

Premium IOLs. With respect to multifocal IOLs, we outline the potential unwanted optical effects such as halos and starbursts, although we explain that these are a problem for only a small percentage of patients, whereas most adapt well to these photic phenomena. We explain that good lighting is necessary for reading tasks because of the potential reduction in contrast sensitivity with multifocal lenses. We inform patients that, in the worst-case scenario, if these visual

QUESTION NO. 5: DOES MY CATARACT HAVE TO BE RIPE BEFORE YOU CAN DO SURGERY?

Dr. Nuijts: Thirty or 40 years ago, often patients waited until they were blind or almost blind before having cataract surgery. That was because the procedure used to be much more traumatic than it is today. It is no longer necessary to wait for a cataract to become mature, and today we can do safe surgery at a much earlier point, before you lose too much of your vision.

Google hit No. 2: It's true that people used to have to wait until their cataracts hardened, or ripened, before they could get cataract surgery. The operation involved removing the lens more or less intact through a fairly large incision in the eyeball. The results were better if the lens was solid, so it wouldn't fall apart as the surgeon extracted it. But since the early 1990s, most cataracts have been removed by breaking up the lens into small pieces and then suctioning them out. Doing the surgery this way means that the lens doesn't need to be hard to be removed. In fact, it's more difficult to suction out the chunky pieces of a hardened lens. So now cataract surgery can be based on how much the cataract is affecting a person's vision, not on whether it is ripe.¹

1. <http://www.health.harvard.edu/diseases-and-conditions/do-ataracts-need-to-be-ripe-for-surgery>

complaints are severe, we may have to explant the lens. We also note that, if there is residual refractive error after multifocal IOL implantation, it can be addressed with a laser touch-up procedure.

Toric IOLs. We explain that, in the event of a misalignment of the axis of cylinder, we may have to do a second procedure in a limited number of patients to realign the lens.

Our national guidelines also require informed consent not related to the surgical procedure itself, such as certain information about financing and the hospital. We also have to share with the patient information on alternative treatments. ■

1. Kessel L, Andresen J, Tendal B, Ergaard D, Flesner P, Hjortdal J. Toric intraocular lenses in the correction of astigmatism during cataract surgery: A systematic review and meta-analysis. *Ophthalmology*. 2016;123(2):275-286.
2. Visser N, Beckers HJ, Bauer NJ, Gast SI, Zijlmans BL, Berenschot TT, et al. Toric vs aspherical control intraocular lenses in patients with cataract and corneal astigmatism: a randomized clinical trial. *JAMA Ophthalmol*. 2014;132(12):1462-1468.
3. Visser N, Bauer NJ, Nuijts RM. Toric intraocular lenses: historical overview, patient selection, IOL calculation, surgical techniques, clinical outcomes, and complications. *J Cataract Refract Surg*. 2013;39(4):624-637.

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