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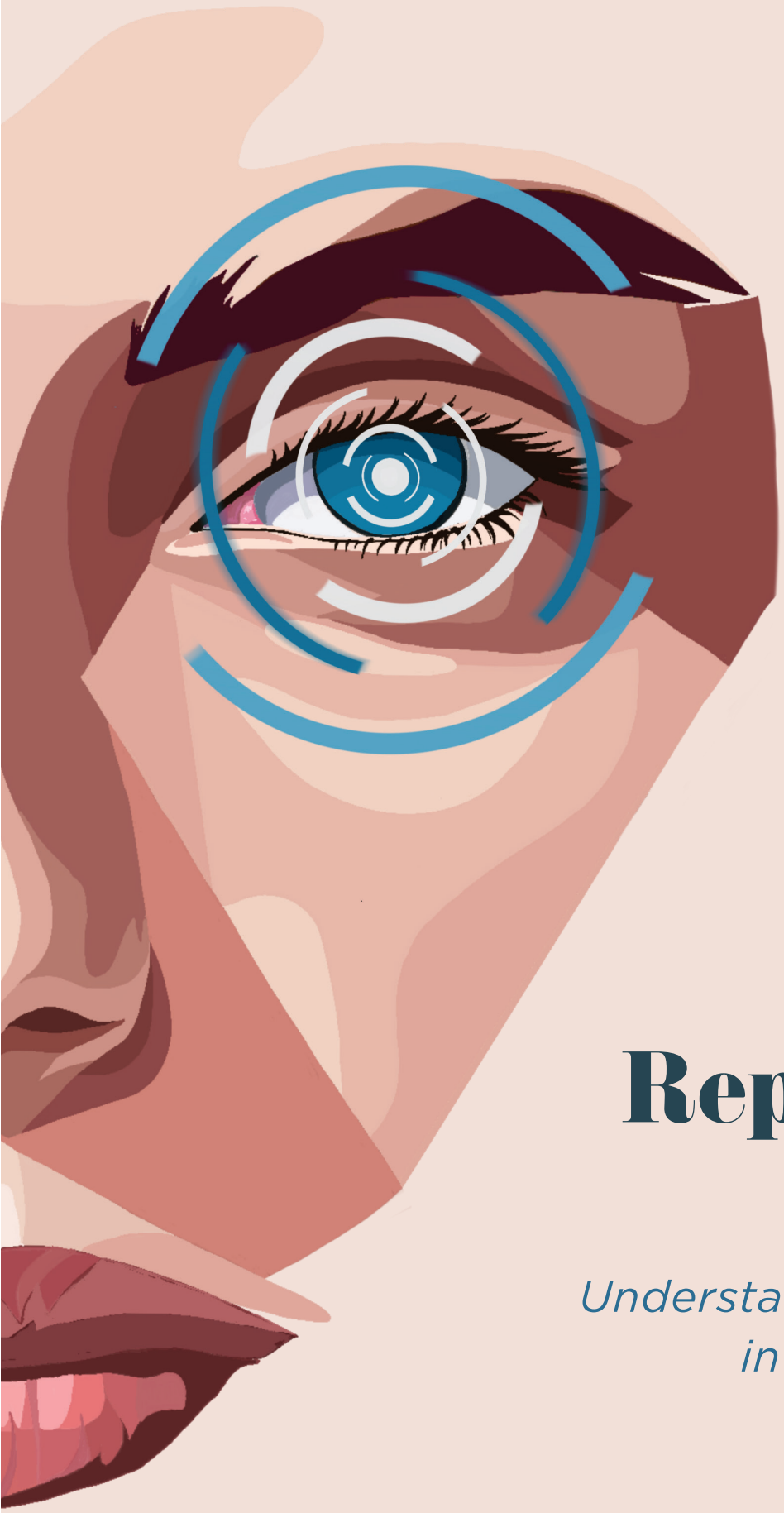

The Lens Replacement Journey

Understanding patient needs in today's new normal

Baseline Trends and Shifts in the Treatment of Refractive Surgery Patients

Surveys reveal four-year trends and impact of COVID-19 pandemic

By Thomas Kohnen MD, PhD, FEBO

To understand our patients' needs during the new normal imposed by COVID-19, it helps to take a look at current trends and how the pandemic has impacted practices.

Clinical Trends

The 2019 ESCRS Clinical Trends Survey, with 2,100 respondents, reported a 6% increase in the number of cataract procedures involving toric intraocular lenses (IOLs) (7 to 13%) since 2016.[1] Meanwhile, presbyopia-correcting IOL procedures have increased from 7 to 9%.

When survey participants were asked about their main concerns preventing them from performing more presbyopia-correcting procedures, 61% responded that patient cost was the main reason (Figure 1). Other concerns included night-time vision quality (44%) and loss of contrast visual acuity (36%).

When they were asked about the main barriers to performing any or additional toric IOL procedures, costs to the patient or clinic (61%) and access to technology (32%) were the top two reasons (Figure 2). If cost were not an issue, 52% of cataract patients with clinically significant astigmatism would receive a toric IOL, but only 13% currently receive them.

"Ophthalmologists are finding new ways to practise in the COVID-19 era"

Practice Patterns

ESCRS performed a COVID-19 Practice Patterns Survey in April 2020, with more than 1,300 responses.[2] It was repeated in September 2020, with approximately 100 responses.

The average percentage of physical consultations increased during that time from 17 to 72%. The percentage performing cataract surgery increased from 9 to 73%, and the average percentage of normal surgical volume increased from 14 to 61%. The percentage who were satisfied with the availability of personal protective equipment at their clinic or hospital increased from 41 to 61%.

When asked how COVID-19 has or will change their practice behavior, 37% reported in April that they did not plan to make any changes, whereas only 19% had the same response in September. Four percent of April respondents would initiate or increase the frequency of simultaneous, same-day bilateral cataract surgery vs. 13% of September respondents. In April, 41% planned to decrease the frequency of physical postoperative examinations vs. 37% in September. Of April respondents, 45% incorporated or will incorporate phone/video consulting routinely vs. 31% of September respondents.

The top measures used to protect staff were reduced working hours, working in separate teams, self-isolation and dismissal of some staff members. The top measures patients were asked to take included hand disinfection, physical distancing and masks.

Practice Trends

Ophthalmologists are finding new ways to practise in the COVID-19 era. Recent surveys reflect shifts in the treatment of cataract and refractive surgery patients.

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What do you consider to be your biggest concerns against performing presbyopia-correcting IOL procedures in your practice?

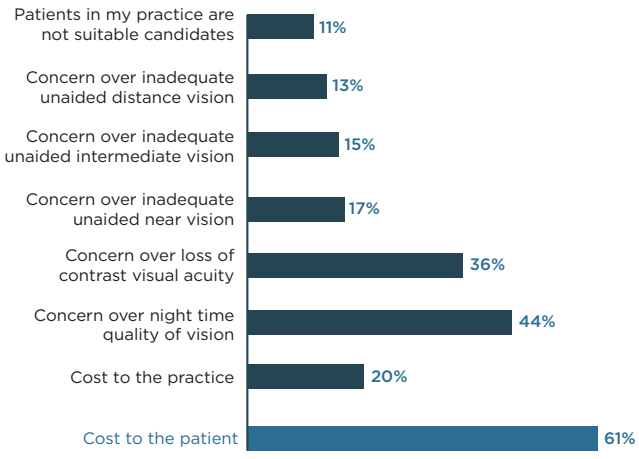


Fig 1. The 2019 ESCRS Clinical Trends Survey revealed that patient cost is a major concern regarding presbyopia-correcting IOLs.

What do you consider to be your biggest barriers to performing any/additional toric IOL procedures in your practice?

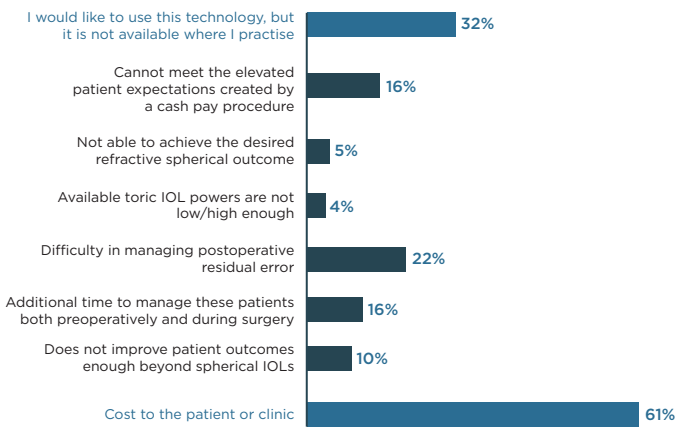


Fig 2. The 2019 ESCRS Clinical Trends Survey showed that patient costs and access to technology are the main obstacles to implanting more toric IOLs.

Key Sustained Practice Improvements Implemented in Today's New Normal

The COVID-19 pandemic has offered opportunities to explore new practices

Arthur Cummings, MD, FRCSEd

Without a doubt, COVID-19 required many rapid changes in our practice. Although we can dwell on the negatives, in this article I would like to focus on the positive changes we introduced during the pandemic, which we plan to continue. Some of these modifications we had never considered or did not have time to explore or implement them.

Exploring the New Patient Visit

Cataract or refractive surgery patients often learn about our clinic by visiting our website and then calling our office. The staff member requests information from the patient, including contact details, and schedules a virtual appointment.

What happens next is where the changes have occurred. Instead of spending 20 minutes on the phone gathering extensive information, the process below ensues.

A staff member emails patients the following: a list of specific steps they will follow from their initial virtual visit through the final consultation; a dry eye management leaflet, explaining the condition and what patients need to do to optimise their tears; and a refractive surgery booklet, introducing how the practice works, the team and what patients can expect during their workup and through the entire process until the postoperative period.

Patients then complete a medical history form online that asks about their reasons for surgery, their personal medical history, data protection and COVID status. After this is completed, the electronic medical records system sends a text message with potential appointment dates and times. The patient chooses a time slot on their mobile phone and submits it and then receives an email with a link to a virtual consultation.

This process reduces the number of necessary in-office visits and increases the efficiency of physical office visits. It helps create a safer environment for patients, staff and physicians.

During the virtual consultation, patients speak with a technician or optometrist who asks about their needs and desires and then describes options, ensuring that the patient understands the dry eye regimen, and provides details and a video demonstrating what they can expect at the clinic for their in-person visit.

When the patient arrives at the clinic, staff members perform scans and tests, the optometrists perform a refraction and discuss possibilities and the consultant examines the patients and advises the most appropriate surgical options.

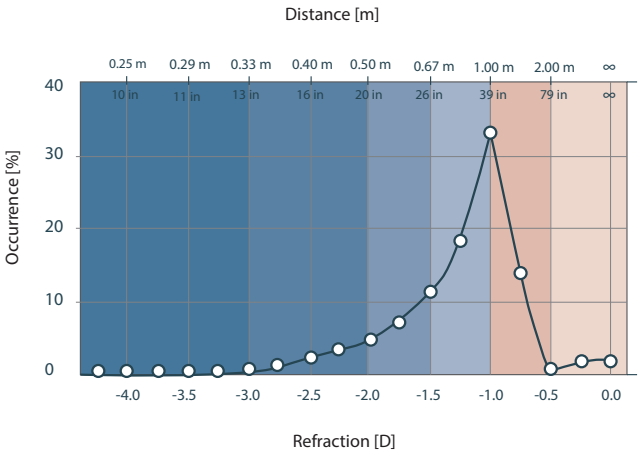
Remote Data Acquisition

We ask patients to wear a visual behaviour monitor that attaches to their glasses and obtains data about their visual behaviour at work and home. The visual behaviour monitor allows us to make much better decisions about the most appropriate choices for patients' visual needs.[1]

For example, in one patient (Figure 3) the device collected data for five days. The patient's defocus curve indicated that they spent 50% of their time using intermediate vision and 25% of their time in indoor lighting.

Based on the defocus curve of intraocular lenses (IOLs), the lifestyle match index defaults to a generic monofocal in both eyes targeting emmetropia. In this case, that lens would have given the patient spectacle-free vision 5% of the time.[1]

Distribution of Viewing Distances



Distance vs Illumination Matrix

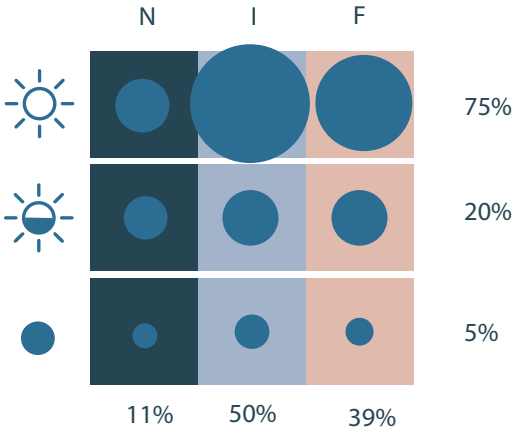


Fig 3. The distance distribution for this patient is 11% for near, 50% for intermediate, and 39% for distance vision. The illumination data shows that 75% is in bright light and 25% in indoor lighting.

The device ranks IOLs in order that will best suit the patient. In this patient it indicated that an extended depth of focus IOL at emmetropia in one eye and -0.5D in the non-dominant eye would add 91% functionality, and the patient would be free from glasses for almost everything except near vision within 0.5m. The next-best solution it recommended for this patient was monovision with a monofocal IOL, adding 87% functionality, and the patient just needed more near reading capability. The next was a trifocal IOL, providing 70% additional functionality, but it had a deficit at the 1.0m mark, which is the distance where this patient spent most of their time. Therefore, even if trifocal IOLs are frequently the most appropriate IOL to provide the most complete range of vision, they do not suit everyone best.

In another patient, the device collected data for a longer period of time. The lifestyle match index indicated the patient

would be free of glasses 32% of the time with the generic monofocal and would need glasses for near vision. The best option for spectacle-free vision was a trifocal IOL, providing a very broad range of vision and adding 50% functionality.

For each surgeon's version of the software, it does not include generic IOLs. It uses the actual IOLs that the surgeon uses.

I have not seen any other tool that allows us to so accurately and objectively consider patients' needs and objectively indicates which lenses best suit them.

"The visual behavior monitor allows us to make much better decisions about the most appropriate choices for patients' visual needs"

Additional Changes in Protocols

Although we have not performed bilateral surgery previously, with the pandemic, ophthalmologists are realising that for some patients doing both eyes at the same time is probably safer than asking the patient to return for a second surgery.[2-4]

However, before we can begin performing bilateral surgery, we need to be sure our supply chain in the hospital enables two completely separate procedures. If an infection occurred, there would not be a common source of infection. We are not currently performing bilateral procedures, but within Ireland I predict that it will become common within the next year or so.

New changes in our practice have had the following effects:

- Reduced the time and resources required for the initial enquiry.
- Kept phone lines clear, which allows more calls to be answered.
- Better informed our patients of their surgical options and COVID protocols via telemedicine visits.
- Allowed our staff to work from home.
- Allowed patients to complete their medical history forms and submit online from their phones or tablets and choose their preferred appointments outside the clinic's opening hours.
- Used telemedicine to reduce the amount of time our patients spend in the clinic.

We have noticed that our patient age is getting younger, and in addition, we have seen an increased demand in the presbyopia age group for IOL procedures. Furthermore, our staff satisfaction has improved as we have enhanced our efficiency, and we have increased patient satisfaction during this journey.

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Effective Patient Conversations

Patient service opportunities continue to expand during the pandemic

Francesco Carones, MD

Despite the challenges of the COVID-19 pandemic, we are expanding the ways we educate and connect with our patients both in the clinic and beyond. We now have more opportunities to showcase our services for current and potential patients.

Connecting with Patients

We began offering a series of patient webinars during the pandemic lockdown in which our doctors discuss important issues in eye health. Topics have included dysfunctional lens syndrome and cataracts, when to bring children to the ophthalmologist, COVID-19 safety measures and others. We have continued the webinars, publicising them on our website. They are a very efficient way to reach out to patients and attract interest in lens replacements. We also offer web consultations for preoperative patient education and some follow-up appointments. In addition, we provided house calls for patients who could not leave their homes and we will continue to offer this service.

Patient Flow

Our new clinic optimises patient flow and physical distancing[1,2]. There are many touchpoints during a patient's journey (Figure 4). After watching a webinar, patients may call to schedule an appointment. After the call, we email or mail information before their first visit. We call patients to confirm the appointment, remind them of COVID-19 precautions and make sure they have read the information we sent them.

Fig 4. Touchpoints during the patient journey.

After patients check in at the reception desk, they meet the technician. In our practice, technicians have a very important role not only in obtaining measurements and performing diagnostics, but also in building rapport with patients before they see the ophthalmologist. Technicians learn what the patient is seeking from surgery and explain what to expect from surgery. During this process, we want the patient to feel like the entire team is working together to help them achieve the best outcome.

The technician begins by administering a lifestyle questionnaire, engaging patients in a discussion about their work, interests and how they spend their time. As the technician performs the diagnostic tests, he or she discusses cataracts, their impact and surgical options. Tests include biometry and K readings, ocular surface workup, corneal tests, aberrometry, anterior segment optical coherence tomography (OCT), assessment of the endothelium, posterior segment OCT and a retinal examination.

As technicians perform the assessments, they educate the patient, focusing on the conversation rather than the test results. They explain exactly what they see on the screen and help patients understand that each measure has a specific function. The technician performs the refraction, tests eye dominance and talks with patients about their expectations.

Presbyopia-correcting intraocular lenses (IOLs) are the standard in our practice, and many patients are interested in these lenses. However, we downgrade when premium IOLs cannot be used or are not desired. The technician explains potential choices and makes sure the patient understands the lens options, including the benefits and disadvantages to help the patient make an informed decision. The patient signs forms explaining potential compromises associated with the selected lens technology.

As the patient's pupils are dilating, the technician continues to provide information about cataracts and explains the steps in the surgical procedure. Our technicians use multimedia tools to describe procedures to the patient.

As the patient's pupils continue to dilate, I speak with the technicians, listen to their feedback about the patient's desires and expectations and review the diagnostic test findings. I do not make a decision on the type of presbyopia-correcting IOL before meeting with the patient.

I have found that it is very efficient to have the technician educate patients. Patients are comfortable speaking with our technicians, and I believe the technicians can obtain more information regarding their lifestyles and interests.

In our practice, we personally hand off each patient to the next staff member, so the technician introduces the patient to me. When I meet with patients, I interview them, perform the examination, and discuss range of vision vs. quality of vision, which are the most important factors that they need to understand to choose the best compromise.

I explain the advantages of presbyopia-correcting IOLs, such as spectacle independence, as well as the disadvantages.

I ask patients which compromise they prefer. They either need to compromise on the range of vision or quality of vision. I explain the IOL categories, counsel the patient and provide my final recommendation. For patients who seek spectacle independence, I describe our full range of presbyopia-correcting IOLs, such as trifocal or continuous-range-of-vision IOLs.

"Technicians have a very important role not only in obtaining measurements and performing diagnostics, but also in building rapport with patients before they see the ophthalmologist"

If patients want spectacle independence without photopic phenomena, I am most likely to advise an extended depth of focus IOL. I recommend premium monofocal IOLs for those who are not very interested in spectacle independence or have contraindications for presbyopia-correcting IOLs.

We schedule procedures in a timely fashion and provide take-home information. Since the arrival of the pandemic,

we also use digital technology to connect with the patient after their appointment to answer questions that arise and finalise the plan for surgery. Overall, we see patients have become much more interested in virtual meeting capabilities.

Staff Roles

Each person within the team plays a specific role. The staff are trained to operate a successful refractive cataract practice, including performing diagnostic assessments, educating and counselling patients, understanding patients' needs and offering support and empathy.

The physician gathers the diagnostic data, feedback regarding patient expectations and other information to choose the specific IOL that will be implanted. Although technicians are involved throughout the process, the ophthalmologist makes the final decision.

Conclusion

Ultimately, the ophthalmologist needs to properly train staff on patient interaction during diagnostic assessments and IOL technologies and evaluate how they perform. Although the ophthalmologist makes the final decision, the patient should feel like everyone in the practice has a high level of competence.

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Educating Patients About Refractive IOLs in Today's New Normal

Ten rules guide patient education regarding presbyopia-correcting IOLs

Detlev R.H. Breyer, MD

Ophthalmologists need a new multifocal intraocular lens (IOL) strategy.

International studies have shown that patient satisfaction with multifocal IOLs is greater than 90%, patients have a better quality of life and more than 90% of patients recommend multifocal IOLs to their friends.

I have had a positive experience with these lenses, needing to explant only two multifocal IOLs in 10 years.

With lens technology advances, we have a variety of presbyopia-correcting IOLs to suit individual patients' needs. Patients desire spectacle independence, leading more ophthalmologists to implant multifocal IOLs.

Addressing Challenges

There is a multifocal IOL dilemma. The international explantation rate is only 1-to-5%, but multifocal IOLs are still the most common cause for explantations.

Therefore, some surgeons prefer not to implant multifocal IOLs. They believe it is a costly investment for preoperative diagnostics, staffing, postoperative fine-tuning and ongoing education regarding lens advances. Ophthalmologists also often fear that their patients will be unhappy with their visual outcomes, especially with photopic phenomena.

Evidence-Based Decisions

The reason for patient dissatisfaction may be a patient-IOL mismatch or surgeons may not know how to manage complications.

Surgeons need to take a customised approach to surgical planning, lens selection and procedures for each patient. My colleagues and I recently published an article reviewing multifocal and extended depth of focus IOLs to help surgeons select the best lens for each patient.[1]

We developed the Duesseldorf miLens® Strategy, based on evidence-based medicine from our own studies, our research network with the University of Heidelberg, other research and daily clinical practice involving thousands of cases during the past 10 years.

"Surgeons need to take a customised approach to surgical planning, lens selection, and procedures for each patient"

We created 10 rules:

Rule 1: Determine the Patient's Visual Needs and Wishes

We need to understand patients' needs. We should not push them. We describe the advantages and disadvantages of multifocal IOLs, including visual side effects such as halo and glare. We must document this discussion with patients' signatures.

We explain that there are different lens options, but presbyopic patients who desire spectacle independence will never be entirely free of glasses. Diffractive trifocal IOLs provide the most spectacle independence, and we show patients what the optics look like. We explain that they will have haloes and glare when driving at night for one-to-three months after surgery, and we show them what their vision will look like as they neuroadapt (Figure 5). In very rare cases, patients have more severe photopic phenomena. We counsel patients that if they slightly think they cannot tolerate such phenomena, they might not be good candidates for this IOL. On the other hand, the advantage of trifocal IOLs is that they will even be able to read small print.

Fig 5. Patients are shown examples of photopic phenomena.

If the patient is deterred by potential photopic phenomena, we describe our Duesseldorf Formula, a customised blended vision technique based on the patient's visual requirements with EDOF IOLs. One eye is treated for far and intermediate vision, and the other eye for intermediate and near vision; they will have less photopic phenomena. We explain that it will take one-to-three months for them to neuroadapt. With the Duesseldorf Formula, they usually will only be able to read newspaper and book print. We show them the difference in print sizes.

Rule 2: Establish a Standardised Preoperative Protocol

The miLens Strategy preoperative protocol is more extensive than the protocol for general cataract surgery. Because this is refractive surgery, we need the latest diagnostics. We need to diagnose and treat dry eye, obtain aberrometry measurements and perform dynamic pupillometry and other tests.

Rule 3: Obtain a Visual History and Psychological Assessment

It is important to take patients' visual history and psychological assessment very seriously. We need to know what their most important visual distance is without glasses. Does the patient have special visual needs for work, sports, night-time driving or other activities? How well would the patient tolerate photopic phenomena?

When assessing patients' personalities, we ask patients whether they are pragmatic generalists or dogmatic perfectionists.[2] Trifocal IOLs are not the best choice for dogmatic perfectionists.

Rule 4: Obtain Informed Consent and Ensure Shared Decision-Making

When obtaining informed consent, we emphasise the disadvantages of the lens. This is a lifetime decision that patients need to live with, so they need to know all of the disadvantages. We must also share uncomfortable facts, such as the cost of touch-up procedures. We always under-promise and over-perform. We provide an individualised informed consent and document this information with the patient's signature.

Shared decision-making is very important, especially when implanting multifocal IOLs. I stress with patients that their quality of vision will never be the same as it was at 18, so as not to raise excessive expectations.

Rule 5: Use charts and have patients demonstrate proof of learning

Visuals are mandatory to help patients understand how they will see. Then we ask them questions to be sure they understand what they will experience after surgery, such as: What will you be able to see without glasses after surgery? What are the visual disadvantages and challenges?

Rule 6: Engage the Refractive Manager/Complete the Checklist

Next, patients see our refractive manager. Our employees are well educated and knowledgeable and attend international conferences. They are trained by video analysis, taping my dialogue with patients about IOL selection. They work in a quiet and separate environment with a positive interior design, which is very important. Patients are more comfortable asking the refractive manager questions than the physician.

After the refractive manager completes the checklist with the patient, this is also documented with the patient's signature.

Rule 7: Provide Brochures and Publications

Before patients leave, we give them informational materials, our own and other publications and brochures and a business card providing continuous contact information.

Rule 8: Implement Latest Surgical Techniques

The latest surgical techniques are critical when implanting multifocal IOLs. The surgeon must be experienced in multifocal IOL surgery and able to handle intraoperative and postoperative complications. An experienced refractive surgeon is also needed to perform all refractive touch-up procedures.

Rule 9: Establish Standardised Follow-Up

It is very important to see every patient one week, one month and three months after surgery. Because it takes three months for them to neuroadapt, we can reassure them during this period and determine whether the procedure was successful. Without this follow-up, patients may not return if they are dissatisfied, when a touch-up may have easily corrected any residual error and fulfilled their visual needs completely.

Rule 10: Manage Complaints

Especially with multifocal IOL surgery, it is very important to have a strategy to manage patients who are dissatisfied. The LEAP (listen, empathise, apologise and problem solving) strategy is very simple. Understand that patients' needs are real and serious, and make sure to see every patient until he or she is happy.

Conclusion

If we follow these 10 rules, I believe we can implant many more multifocal IOLs or extended depth of focus IOLs.

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