Visual outcomes of the AcrySof® Vivity intraocular lens in patients with high ocular axial length

An investigator-initiated clinical trial

1. TITLE PAGE

Protocol Number:	JW-21-001
Amendment Number	Version 2.0
IRB / ERC	Advarra IRB 6940 Columbia Gateway Drive, Suite 110 Columbia, MD 21046
Sponsor Name & Address:	James J. Wiens, MD, FRCSC 306-400 St. Mary Avenue Winnipeg Manitoba R3C 4K5 ***(funding only, this is an investigator-initiated study IIT # 67136385)*** Alcon Vision, LLC 6201 South Freeway, Fort Worth, TX 76134-2099, USA
Test Articles:	AcrySof® Vivity Intraocular lens
Investigator:	James J. Wiens, MD, FRCSC

2 . INVESTIGATOR AGREEMENT

I confirm that I have read and that I understand this protocol entitled "Visual outcomes of the AcrySof® Vivity intraocular lens in patients with high ocular axial length", and understand the use of the study products. I agree to conduct this study in accordance with the requirements of this protocol and also protect the rights, safety, privacy, and well-being of study subjects in accordance with the following:

- The ethical principles that have their origin in the Declaration of Helsinki.
- All applicable laws and regulations, including, without limitation, data privacy laws and regulations.
- Regulatory requirements for reporting serious adverse events defined in Section 13 of this protocol.

Signature of Investigator (Date)

Investigator Name (print or type)

Investigator's Title

Name of Facility

Location of Facility (City)

3. GENERAL INFORMATION

Objective	To assess the visual outcomes and quality of vision of patients receiving the AcrySof® Vivity Intraocular lens (IOL), when implanted in eyes with high ocular axial length (≥24.5mm), after uneventful cataract surgery. The Vivity IOL provides good refractive and visual outcomes at 3 months in subjects with long axial lengths in both eyes when combined with advanced power calculation formulae and intraoperative aberrometry (ORA).
Test Article(s)	AcrySof® Vivity Intraocular lens
Control Article(s)	None.
Sample size	40 eyes of 20 subjects
Study Population	Subjects presenting for cataract surgery who are interested in reducing their dependence on spectacles at all distances, and who are appropriate candidates for extended depth of focus (EDOF) lens implantation.
Number of sites	One
Study Design	Prospective, non-randomized, single-arm study.
Masking	None
Variables	Primary: Binocular uncorrected visual acuities at distance (6m), intermediate (66cm), and near (40 cm), 3 months postoperatively. Secondary: • Percentage of eyes with absolute prediction error ≤ 0.5D at 3 months postoperatively. • Monocular and binocular best-distance-corrected visual acuities at distance (6m), intermediate (66 cm), and near (40 cm), 3 months postoperatively.

	• Manifest refraction (residual spherical equivalent refraction, residual sphere, and residual astigmatism), 3-months postoperatively. • Questionnaire for visual disturbance scores (QUVID). • Patient satisfaction questionnaire scores (IOLSAT). • Binocular distance corrected low contrast visual acuity (25% contrast) at distance (6m).
Duration / Follow-up	Preoperative to 3 months postoperative

The study will be registered with clinicaltrials.gov.

The study will be conducted in compliance with the protocol, GCP and applicable regulatory requirements

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5. INTRODUCTION

Previous studies have shown that the AcrySof® Vivity IOL (Alcon Vision, LLC, Fort Worth, Texas, USA) provides good visual outcomes for patients at distance, intermediate and near;[2] the overall satisfaction rate with the lens is high.[2] This study aims to report on visual outcomes and patient reported visual disturbances and spectacle independence of the Vivity IOL in eyes with high axial length undergoing cataract surgery. Currently, there is no data on the visual outcomes of the Vivity IOL in patients with 'long eyes' (≥24.5mm).

6. OBJECTIVE(S)

The objective is to assess the visual outcomes and quality of vision of patients receiving the AcrySof® Vivity Intraocular lens (IOL), when implanted in eyes with high ocular axial length (≥24.5mm), after uneventful cataract surgery.

7. SUBJECTS

7.1. Subject Population

Eligible test subjects will be presenting for cataract surgery who are interested in a reduced dependence on spectacles for near, intermediate, and distance vision, who have axial length ≥24.5mm in both eyes, and who are considered appropriate candidates for extended depth of focus (EDOF) lens implantation. Target refraction will be -0.25 D in all eyes.

A total of 40 eyes of 20 subjects at one site will be enrolled. Both eyes of a subject must be enrolled. Subjects must meet the inclusion criteria. Prior to enrollment, subjects will be provided information on the study and asked to sign a patient information and consent form to participate. The patient information and consent form will be approved by an appropriate ethics committee.

7.2. Inclusion Criteria

Subjects are eligible for the study if they meet the following criteria:

Note: Ocular criteria must be met in both eyes.

- Undergoing uncomplicated bilateral cataract surgery with IOL implantation.
- Gender: Males and Females.
- Age: 50 years or older.
- Willing and able to provide written informed consent for participation in the study.
- Willing and able to comply with scheduled visits and other study procedures.
- Motivated for greater degree of spectacle independence vs monofocal IOL.
- Axial length ≥24.5mm in both eyes.

- Planned cataract removal by femtosecond laser.

7.3. Exclusion Criteria

If any of the following exclusion criteria are applicable to the subject or either eye, the subject should not be enrolled in the study.

- Ocular comorbidity that might hamper postoperative visual acuity.
- Previous refractive surgery.
- Irregular corneal astigmatism.
- Evidence of keratoconus as per Pentacam.
- Expected post-op VA worse than 20/25 (Snellen).
- Refractive lens exchange.
- Difficulties comprehending written or spoken English language.
- Patients with physical or intellectual disability (e.g. Down's Syndrome, Parkinson's Disease; unable to fixate).
- Clinically significant or severe ocular surface disease that would affect study measurements based on the investigator's opinion.
- Axial length <24.5mm.
- Evidence of macular pathology as per optical coherence tomography examination.

The principal investigator reserves the right to declare a patient ineligible or non-evaluable based on medical evidence that indicates they are unsuitable for the trial.

Pregnancy has a known effect on the stability of refractions and visual acuity. As such, subjects who become pregnant during the study will not be discontinued but their data may be excluded from analyses of effectiveness.

8. STUDY DESIGN

8.1. Study Design

This study is a single-arm unmasked clinical evaluation study of binocular uncorrected visual acuity at distance (6m), intermediate (66cm) and near (40cm), when implanted in eyes with high ocular axial length (≥24.5mm), after successful bilateral cataract surgery. Subjects will be assessed preoperatively, operatively, and at 1 day, 1 week, 1 month, and 3 months postoperatively. Clinical evaluations will include administration of a visual disturbance questionnaire (QUVID) and a satisfaction questionnaire (IOLSAT), as well as measurement of binocular and monocular visual acuities and manifest refraction.

The primary outcome measure will be the binocular uncorrected visual acuities at distance (6m), intermediate (66cm), and near (40cm), 3 months postoperatively.

Secondary outcome measures are as follows:

- Percentage of eyes with absolute prediction error ≤ 0.5D at 3 months postoperatively.
- Monocular and binocular best-distance-corrected visual acuities at distance (6m), intermediate (66 cm), and near (40 cm), 3 months postoperatively.
- Manifest refraction (residual spherical equivalent refraction, residual sphere, and residual astigmatism), 3-months postoperatively.
- Questionnaire for visual disturbance scores (QUVID).
- Patient satisfaction questionnaire scores (IOLSAT).
- Binocular distance corrected low contrast visual acuity (25% contrast) at distance (6m).

8.2. Methods Used to Minimize Bias

As a single-arm study there is no expected bias. Patient selection will be based on the patient's interest and the surgeon's opinion as to whether they are a suitable candidate for EDOF IOL implantation.

The measurement of visual acuity will be conducted in a systematic fashion to minimize bias. Individuals conducting visual acuity measures will be instructed to perform the same testing in the same fashion for all subjects, with the same level of encouragement to subjects. Questionnaire instructions will be provided to all patients in a similar manner.

All data collection will be completed through provided Case Report Forms (CRFs) or computer files generated by automated test equipment. All site personnel involved in the study will be trained in regard to conducting study-specific procedures.

9. STUDY PROCEDURE

9.1. Informed Consent / Subject enrollment

No subject will be enrolled into the study who does not meet the inclusion/exclusion criteria and does not sign the current approved informed consent document. The original signed informed consent documents will be maintained by the investigator as a permanent part of the subject's medical records. A signed copy will be provided to the subject.

9.2. Visits and Examinations

Subjects will participate in seven study visits, one eye per visit for bilateral surgery. Visits will include an uptake visit, two operative visits, and 5 total postoperative visits (Visit numbers 1-6 below). The visit schedule, complete with window and associated

CRF forms, are displayed in Table 9.2-1. Details of each study visit, including testing to be conducted, are provided below.

Table 9.2-1. Visit Schedule

Visit Number	Visit Name	Visit Window	CRF Number
1	Preoperative	-60 to 0 days from surgery	1
2,2a	Operative	0 from surgery	2,2a
3,3a	1 Day Postoperative	1-2 days postoperative*	3,3a
4	1 Week Postoperative	7 (±2) days postoperative**	4
5	1 Month Postoperative	30 (±10) days postoperative**	5
6	3 Months Postoperative	90 (±20) days postoperative**	6

* relative to the operative eye
** relative to the date the last eye is operated on

9.2.1. Preoperative

At the preoperative exam, subjects will be consented, qualified for the study (compared with inclusion/exclusion criteria), and assigned a study ID/subject number. Subject numbers will be assigned sequentially at each site in the order of enrollment. Pre-operative qualification should take place no more than 60 days prior to surgery.

A medical history will be taken and exams will include the tests described below:

- manifest refraction,
- visual acuity

In addition, all site-specific, routine, usual standard of care preoperative measures should be undertaken. Data obtained from examinations within 24 months of consent are acceptable.

Measurements should be made as described in section 9.3 below.

9.2.2. Operative (Surgery)

All subjects will undergo cataract surgery with implantation of the Vivity IOL. The surgeon's usual standard of care with regard to treatment and medication will be used for all study subjects. Surgery planning and IOL power calculation will be performed using the surgeon's preferred method preoperatively and remeasured with the Optiwave Refractive Analysis (ORA) system intraoperatively, with an

initial a-constant provided by Alcon. The implanted lens power will be based on which assessment the surgeon is most confident with.

Surgical findings will be recorded and any adverse events/serious adverse events (AEs/ SAEs) occurring during surgery will be noted at this visit. Any other problems during surgery and comments regarding surgery will be documented.

Any subject whose surgery is not completed successfully will be documented in the appropriate case report form. These subjects will be monitored for safety but clinical performance data may be excluded from the analysis.

9.2.3. Postoperative 1 Day

All routine, usual standard of care postoperative measures should be undertaken. In addition, the subject will undergo VA testing in accordance with the specifications below (Section 9.3). Adverse events will be monitored.

9.2.4. Postoperative 1 Week

All routine, usual standard of care postoperative measures should be undertaken. In addition, the subject will undergo a manifest refraction and VA testing (Section 9.3). Any device deficiencies or adverse events will be monitored.

9.2.5. Postoperative 1 Month

All routine, usual standard of care postoperative measures should be undertaken. In addition, the subject will undergo a manifest refraction and VA testing (Section 9.3). Any device deficiencies or adverse events will be monitored.

9.2.6. Postoperative 3 Months

All routine, usual standard of care postoperative measures should be undertaken. In addition, the subject will undergo a manifest refraction, VA testing and complete the QUVID and IOLSAT questionnaires (Section 9.3). Any device deficiencies or adverse events will be monitored.

9.2.7. Exit Procedures

In the event of premature exit from the study, all study related examinations should be completed where possible. The Exit CRF should be completed, noting that the subject did not complete the study and the reason for premature study exit. If no premature exit from the study occurs, the Exit CRF should be completed at the end of Visit 6 (Postoperative 3 Months).

9.3. Study Methods and Measurements

All routine testing and basic eye examinations should be carried out at each study visit. Abnormalities should be recorded in the CRF "Comment" section. Specific study examination procedures are outlined below.

9.3.1. Manifest Refraction

Perform a manifest refraction with a high contrast logMAR chart under photopic lighting conditions (>85 cd/m^2). Document refraction results with sphere, cylinder and axis readings. If uncorrected visual acuity is not improved by manifest refraction, use zero for sphere and cylinder and draw a line through the blank for the axis.

Note: Each subject should be manually refracted to his/her best correction by an ophthalmologist, optometrist, or a skilled technician using a phoropter or trial lenses.

9.3.2. Visual Acuity (VA)

To obtain logMAR VA, ask subjects to begin reading the chart at the smallest row where all letters are easily distinguishable. Have subjects continue to read rows with smaller letters and encourage subjects to guess at all letters in a line if at least one correct response was given on the previous row. Request subjects read rows until no letters on a row are read correctly or until all letters on a row are too indistinguishable to even be guessed.

While the subject is reading the chart, record the number of letters on each line read incorrectly by the subject. The last line from which the subject read at least one letter correctly is recorded as the baseline logMAR VA. The actual logMAR VA is calculated using the baseline logMAR VA line and the number of letters read incorrectly. This VA should be recorded as the best-corrected monocular visual acuity at distance.

It is sufficient to record the uncorrected VA at distance only for the 1-day visit.

Postoperatively conduct testing uncorrected at all visits. In addition, conduct testing with the manifest distance refraction in place at 1 week, 1 month, and 3 months post-operatively.

Distance VA

Measure distance visual acuity using a high contrast logMAR ETDRS chart under photopic lighting (>85 cd/m2) at a distance of 6 m.

Intermediate VA

Have the subject view an appropriately-scaled high-contrast logMAR ETDRS Visual Acuity Chart at 66 cm. Visual acuity determined with the chart will be recorded and scored.

Near VA
Conduct near testing with an appropriately-scaled logMAR ETDRS Visual Acuity Chart at 40 cm. Visual acuity determined with the chart will be recorded and scored.

Low Contrast Distance VA
Measure distance visual acuity using a low contrast (25%) logMAR ETDRS chart under photopic lighting (>85 cd/m2) at a distance of 6 m.

9.3.3 Questionnaires
The patient satisfaction (IOLSAT) questionnaire and the visual disturbance (QUVID) questionnaire, related to quality of vision, will be administered to subjects at the 3-month visit. The administrator should ensure the subjects understand the nature of the questions but should not interpret them for the subject.

9.4. Unscheduled Visits

Unscheduled exams may be conducted at the discretion of the Investigator with all relevant information from the exam recorded in the source documents and on the Unscheduled Visit pages within the CRF booklet.

9.5. Discontinued Subjects

Discontinued subjects are those who do not have an exit visit or who come into the office to be exited prior to the scheduled final study visit. Subjects may be discontinued from the study at any time if, in the opinion of the investigator, their continued participation in the study poses a risk to their health. The reasons for discontinuation include:

a. Adverse event;
b. Lost to follow-up;
c. Subject decision unrelated to an adverse event;
d. Protocol violation;
e. Treatment failure;
f. Other.

To ensure the safety of all subjects who discontinue prior to Visit 6, investigators should assess each subject and, if necessary, advise them of any therapies and/or medical procedures that might be needed to maintain their health. Any changes in medical health and/or use of concomitant medications should also be captured.

10. ANALYSIS PLAN

10.1. Analysis Data Sets

All subjects who are enrolled in the study will be evaluated for safety. Efficacy analyses will be performed based on data from those eyes where uncomplicated cataract surgery with Vivity IOL implantation was completed.

10.2. Statistical Methodology

A summary of the data will be prepared for all measurement time points. Summaries of the changes observed between the 1 month and 3 month post-operative visits will also be summarized.

For variables measured on a continuous scale, these summaries will include the sample size, as well as the mean, standard deviation, median, minimum, and maximum. For variables measured on a categorical scale, summaries will provide the number and percentage of subjects who provided each score (or change in scores). These summaries will be provided for all eyes completing the study.

10.2.1. Within-treatment Changes

For variables measured on a continuous scale, the statistical significance of within-treatment changes between time points will be investigated using paired t-tests. For variables measured on an ordinal categorical scale, the Wilcoxon signed-rank test will be employed.

10.3. General Statistical Considerations

The statistical analyses will be performed using R, version 4.0.3 or higher. Any statistical tests of hypotheses will employ a level of significance of alpha=0.05.

11. SAMPLE SIZE JUSTIFICATION

The distribution of axial length ≥24.5mm in the older population of is ~17%.[3] As a result, recruitment for qualifying candidates will be limited due to this natural population distribution. It is expected that 20 patients (40 eyes) will provide sufficient data to characterize the clinical performance of the lens. When the sample size is 20, a two-sided 95% confidence interval for a single mean will extend 0.05 from the observed mean, assuming that the standard deviation is known to be 0.1 logMAR and the confidence interval is based on the t-statistic.

12. CONFIDENTIALITY/PUBLICATION OF THE STUDY

The existence of this Study is confidential and should not be discussed with persons outside of the Study. Results will be submitted for publication and presentation at national and/or international meetings. A manuscript will be submitted to peer-review journals for publication but there is no guarantee of acceptance.

All study data will be collected on appropriate Case Report Forms (CRFs). No protected health information will be included on the forms. CRFs will be retained in the patient's file for a minimum period of 3 years. Collected information will only be used for purposes of this study and no information will be sold to third parties. The following people will have access to your study records:

- Study Doctor and staff involved with the study
- Study Monitor or Auditor

- Sponsor Company or Research Institution
- Review boards or accrediting agencies
- Other State or Federal Regulatory Agencies

The de-identified (anonymized) data may be shared with other researchers for future analysis.

13. QUALITY COMPLAINTS AND ADVERSE EVENTS

All subjects will be monitored for adverse events over the course of the study. A place to record any adverse event is included on each case report form.

13.1. General Information

An Adverse Event (AE) is any untoward medical occurrence in a subject who is administered. a study treatment regardless of whether or not the event has a causal relationship with the treatment. An AE, therefore, can be any unfavorable or unintended sign (including an abnormal laboratory finding), symptom, or disease temporally associated with the study treatment, whether or not related to the treatment. In clinical studies, an AE can include an untoward medical occurrence occurring at any time, including run-in or washout periods, even if no study treatment has been administered.

13.2. Monitoring for Adverse Events

At each visit, after the subject has had the opportunity to spontaneously mention any problems, the Investigator should inquire about AEs by asking if the patient has any problems.

13.3. Procedures for Recording and Reporting AEs and SAEs

Subsequent to signing an informed consent form, all untoward medical occurrences that occur during the course of the study must be documented on an Adverse Event Form (AEF). A separate AEF must be filled out for each event. When possible, signs and symptoms indicating a common underlying pathology should be documented as one comprehensive event. For each recorded event, the AE documentation must include the onset date, outcome, resolution date (if event is resolved), intensity (i.e., severity), any action with study treatment taken as a result of the event, and an assessment of the adverse event’s relationship to the study treatment.

Nonserious Adverse Events

A nonserious AE is defined as any untoward change in a subject's medical health that does not meet serious criteria noted below (e.g., is not life-threatening, does not require hospitalization, does not prolong a current hospitalization, is not disabling, etc.). All adverse events must be reported regardless of whether or not they are related to the study treatment.

For nonserious adverse events, an AEF containing all available information will be collected on a routine basis and submitted to the Medical Monitor at the close of the study.

Serious Adverse Events

A serious adverse event (SAE) is defined as any adverse experience that meets any of the following criteria:

- Results in death.
- Is life-threatening.
  NOTE: Life-threatening means that the subject was at immediate risk of death from the reaction as it occurred; i.e., it does not include a reaction which hypothetically might have caused death had it occurred in a more severe form.
- Requires inpatient hospitalization or prolongation of existing hospitalization.
  NOTE: In general, hospitalization signifies that the individual remained at the hospital or emergency ward for observation and/or treatment (usually involving an overnight stay) that would not have been appropriate in the physician's office or an out-patient setting. Complications that occur during hospitalization are AEs. If a complication prolongs hospitalization or fulfills any other serious criteria, the event is serious. When in doubt as to whether "hospitalization" occurred, the event should be considered serious.
- Results in persistent or significant disability/incapacity. Disability is defined as a substantial disruption of a person's ability to conduct normal life functions.
  NOTE: The term disability means a substantial disruption of a person's ability to conduct normal life functions. This definition is not intended to include experiences of relatively minor medical significance such as uncomplicated headache, nausea, vomiting, diarrhea, influenza, or accidental trauma (e.g., sprained ankle) which may interfere or prevent everyday life functions but do not constitute a substantial disruption.
- Is an important medical event. An important medical event is an event that may not result in death, be life-threatening, or require hospitalization but may be considered an SAE when, based upon appropriate medical judgment, it may jeopardize the subject and may require medical or surgical intervention to prevent one of the outcomes listed in the definitions for SAEs. Examples of such medical events include allergic bronchospasm requiring intensive treatment in an emergency room or at home, blood dyscrasias or convulsions that do not result in subject hospitalization, or the development of drug dependency or drug abuse.
  All available information on a serious adverse event(s) and any other associated AE, if applicable, must be forwarded to the study coordinator for forwarding to the Medical Monitor immediately (i.e., within one working day of the Investigator's or site's knowledge of the event) as follows:
  - In studies utilizing EDC (electronic data capture), all available information for the SAE and any associated AE(s) must be entered immediately into the EDC system.
  - Additional information for any applicable event is to be reported as soon as it becomes available.

In addition to the reporting of serious adverse events to the study Medical Monitor, the SAE must be reported to the IRB / IEC according to their requirements.

The investigator must document all adverse device events (serious and nonserious but related) and all serious adverse events (related and unrelated) on the Adverse Device Effect and Serious Adverse Event Form. Any device quality complaints will also be documented.

- **Both the Quality Complaint Form and the Adverse Device Effect and Serious Adverse Event Form must be e-mailed immediately to the study coordinator (Lori Groening) at studycoordinator@imageplus.ca.**
- **Additional relevant information is to be reported as soon as it becomes available.**

Study coordinator contact information is provided below.

Table 13.3.-1:
Contact Information for Study

Study Staff	Business Phone	e-mail	24-hour Office Phone
Lori Groening	204-943-1520	studycoordinator@imageplus.ca	204-943-1520
Val Klassen	204-943-1520	val.imageplus@gmail.com	204-943-1520

Further, depending upon the nature of the adverse event (serious or nonserious) or quality complaint being reported, the study sponsor may request copies of applicable portions of the subject's medical records. The investigator must also report all adverse events and quality complaints according to the relevant IRB requirements.

12.3.1 Intensity and Causality Assessments

For every adverse event and quality complaint, the investigator must assess the causality as Related or Not Related to the medical device under investigation. An assessment of causality will also be performed by the Medical Monitor utilizing the same definitions, as shown below:

Causality

Related — An adverse event or quality complaint classified as related may be either definitely related or possibly related where a direct cause and effect relationship with the medical device has not been demonstrated, but there is a reasonable possibility that the adverse

event or quality complaint was caused by the medical device.

Not Related — An adverse event or quality complaint classified as not related may either be definitely unrelated or simply unlikely to be related (i.e., there are other more likely causes for the adverse event or quality complaint).

Where appropriate, the investigator must assess the intensity (severity) of the adverse event as mild, moderate, or severe based on medical judgment with consideration of any subjective symptom(s), as defined below:

Intensity (Severity)

Mild — An adverse event is mild if the subject is aware of but can easily tolerate the sign or symptom.

Moderate — An adverse event is moderate if the sign or symptom results in discomfort significant enough to cause interference with the subject's usual activities.

Severe — An adverse event is severe if the sign or symptom is incapacitating and results in the subject's inability to work or engage in their usual activities.

The investigator must document any action taken (i.e., medication, intervention, or treatment plan) and outcome of the adverse event or quality complaint when applicable.

13.4. Follow-Up of Adverse Events and Quality Complaints

The investigator is responsible for adequate and safe medical care of subjects during the study and for ensuring that appropriate medical care and relevant follow-up procedures are maintained after the study. Any additional data from these follow-up procedures must be documented and available to the study coordinator who, with the Medical Monitor, will determine when the data need to be documented on the CRFs.

13.5. Safety Analyses

The type, severity, duration and frequency of reported ocular adverse events will be tabulated. Adverse events will also be summarized for events that were considered treatment-related.

14. GCP, ICH and ETHICAL CONSIDERATIONS

This study will be conducted in compliance with Good Clinical Practices (GCPs), including International Harmonization (ICH) Guidelines, and in general, consistent with the 1996 version of the Declaration of Helsinki. In addition, all applicable local, state and federal requirements will be adhered to.

This study is to be conducted in accordance with Institutional Review Board regulations. The investigator will obtain appropriate IRB/ethics committee approval prior to initiating the study.

The study will be registered with clinicaltrials.gov.

14.1 Confidentiality

The data collected will be data typical for the procedure(s) when performed on eyes outside the study. Any data collected will become part of the patient's clinical record. The data will be subject to the same privacy and confidentiality as other data in the clinical record.

Only the principal investigator, research consultant, and clinic staff will have access to the data collected. All data shared outside the practice will be de-identified; patients' protected health information will not be available and will not be reported in any analyses or publications. No data will be sold to third parties. De-identified (anonymized) data may be used for future research.

15. STANDARD EVALUATION PROCEDURES

Table 15.1. Proposed Visits and Study Assessments

(visits are by patient, with both eyes tested)

Activity	Pre-operative	Operative	Postoperative			
	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
			1 Day	1 Week	1 Month	3 Months
Informed Consent	X					
Demographics	X					
General Information: Medical History	X					
Surgery		X				
Manifest refraction	X			X	X	X
Monocular uncorrected distance VA	X		X	X	X	X
Monocular best corrected distance VA	X			X	X	X
Monocular uncorrected and best distance-corrected intermediate VA				X	X	X
Monocular uncorrected and best distance-corrected near VA				X	X	X
Binocular uncorrected and best-corrected distance VA						X
Binocular uncorrected and best distance-corrected intermediate VA						X
Binocular uncorrected and best distance-corrected near VA						X
Binocular distance corrected low contrast VA						X
IOLSAT Patient Satisfaction Survey						X
QUVID Visual Disturbance questionnaire						X
Monitor for Adverse Events and Device Deficiencies		X	X	X	X	X
Complete Exit Form[1]						X

[1] Complete Exit Form upon termination of subject participation, or at Visit 6, whichever occurs first.

* To be performed if deemed necessary by the investigator

16. CONFIDENTIALITY

No protected health information (PHI), including the patient's name and date of birth, will be collected; to ensure this, no PHI information is permitted to be entered on any of the Case Report Forms (CRFs). Subjects will only be identified by subject IDs and identities will be removed at the initial visit so that there is no further need to protect or destroy the information. Collected information will only be used for purposes of this

study and no information will be sold to third parties. The non-PHI information collected may be used for future research, though there is currently no plan to do so.

17. FINANCIAL AND INSURANCE INFORMATION/STUDY RELATED INJURIES

Every effort to prevent study-related injury will be taken by the Study Doctor and staff. In the event a patient is injured as a direct result of the study while following the Study Doctor's instructions and the study requirements, the patient will be instructed to contact his or her doctor immediately. The Study Doctor is to treat the injured subject as needed for those injuries caused directly by this research study. In the event of injury or illness caused by or occurring during a subject's participation in this research study, all charges for medical care provided to the subject will be billed to his or her insurance company. The Study Doctor or Sponsor does not offer to cover the medical care costs for injuries or illnesses that are not caused directly by the research study. The Sponsor does not offer to provide any other compensation, unless specifically agreed to elsewhere in this document. This information will be provided to each study subject before the start of the study in the consent form.

18. STUDY ENDPOINT CRITERIA

18.1. Patient Completion of Study

If a study patient has completed the final visit (Visit 6) of the study, he/she is considered to have completed the study.

18.2. Patient Discontinuation

Each study patient may voluntarily discontinue the study at any time they choose. Study patients who cannot complete the study for administrative reasons (e.g., non-compliance, failure to meet visit schedule, etc.) will be discontinued from the study. Study patients discontinued during the enrollment phase (prior to surgery) of the study will be replaced.

18.3. Patient Termination

A study patient will be terminated if the study patient develops any severe adverse event that may be related to the study. A study patient will receive appropriate treatment at the discretion of the investigator. Notification of termination will be clearly documented. These study patients are considered to have completed the study and will not be replaced.

18.4. Study Termination

The investigator with appropriate notification may terminate the study. If, after clinical observations, the investigator feels that it may be unwise to continue the study, he may stop the study.

18.5. Study Completion

The study will be complete when all enrolled patients have completed Visit 6 or have been terminated from the study.

19. SUMMARY OF RISKS AND BENEFITS

19.1. Summary of risks

The risks with this study are similar to those for any patient electing for EDOF or multifocal IOLs.[4-7] There is no increased risk associated with the proposed study.

19.2. Summary of benefits

Studies of the Vivity multifocal IOL have demonstrated that patients are likely to have relatively better intermediate and near vision than patients electing to be implanted with a single-vision (monofocal) IOL.[2]

REFERENCES

1. Morlock R, Wirth RJ, Tally SR, Garufis C, Heichel CWD. Patient-Reported Spectacle Independence Questionnaire (PRSIQ): Development and Validation. Am J Ophthalmol. 2017 Jun;178:101-114.

2. McCabe C. Clinical Outcomes of a Novel Non-Diffractive Extended Vision IOL. International Society of Presbyopia; 2019; Paris, France.

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