Study Protocol

# CLINICAL EVALUATION OF THE VISION PERFORMANCE OF TECNIS EYHANCE™ INTRAOCULAR LENSES WITH TECNIS SIMPLICITY™ AS COMPARED TO TECNIS® 1-PIECE INTRAOCULAR LENSES

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# CLINICAL EVALUATION OF THE VISION PERFORMANCE OF TECNIS EYHANCE<sup>™</sup> INTRAOCULAR LENSES WITH TECNIS SIMPLICITY<sup>™</sup> AS COMPARED TO TECNIS<sup>®</sup> 1-PIECE INTRAOCULAR LENSES

# PROTOCOL NUMBER: EMON-101-EHCE

SPONSOR: Johnson & Johnson Surgical Vision, Inc. 31 Technology Drive, Suite 200 Irvine, California 92618 (949) 581-5799

## **Investigator Agreement**

As an Investigator, I agree to:

- Implement and conduct this study diligently and in strict compliance with this agreement; the protocol; Good Clinical Practices; 21CFR812, ISO 14155:2011 and all other applicable FDA regulations; conditions of approval imposed by the reviewing Institutional Review Board (IRB), FDA or other regulatory authorities; and all other applicable laws and regulations.
- Supervise all testing of the device where human subjects are involved.
- Ensure that the requirements for obtaining informed consent are met.
- Obtain authorization for use/disclosure of health information (e.g., HIPAA authorization or equivalent).
- Maintain all information supplied by Johnson & Johnson Surgical Vision in confidence and, when this information is submitted to an independent IRB or any other group, it will be submitted with a designation that the material is confidential.

# I have read this protocol in its entirety and I agree to all aspects.

Investigator Printed Name	Signature	Date
Sub-Investigator Printed Name	Signature	Date

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Sub-Investigator Printed Name	Signature	Date
Sub-Investigator Printed Name	Signature	Date
Sub-Investigator Printed Name	Signature	Date

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# PERSONNEL AND FACILITIES SPONSOR:

Johnson & Johnson Surgical Vision, Inc. (JJSV) 31 Technology Drive, Suite 200 Irvine, CA 92618

# SPONSOR PERSONNEL: **EMERGENCY TELEPHONE NUMBERS:**









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1. SYNOPSIS PROTOCOL:	Clinical Evaluation of the Vision Performance of TECNIS Eyhance <sup>™</sup> Intraocular Lens With TECNIS Simplicity <sup>™</sup> as Compared to TECNIS <sup>®</sup> 1-Piece Intraocular Lens Protocol Number: <b>EMON-101-EHCE</b>
STUDY TREATMENTS:	<u>Test Lens</u> TECNIS Eyhance Intraocular Lens with TECNIS Simplicity <sup>™</sup> Model DIB00
	<u>Control Lens</u> TECNIS 1-Piece Intraocular Lens Model ZCB00 (daisywheel) and DCB00 (preloaded)
STUDY OBJECTIVE:	The purpose of this clinical study is to compare the clinical outcomes for subjects bilaterally implanted with TECNIS Eyhance Intraocular Lenses to those bilaterally implanted with TECNIS 1-piece Intraocular Lenses.
CLINICAL HYPOTHESIS:	The mean best-corrected distance visual acuity of the TECNIS Eyhance Intraocular Lens group will be non- inferior to that of the control. In addition, the TECNIS Eyhance Intraocular lens group will demonstrate better distance-corrected intermediate visual acuity compared to the control.
OVERALL STUDY DESIGN: Structure:	Prospective, multicenter, bilateral, randomized, -masked, 6-month study.
Number of Sites:	Up to 15 sites in the US
Duration:	6 months postoperative
Administration:	Surgeons will perform routine, small-incision, cataract surgery and use validated implantation systems for lens implantation. Refractive target

outcomes will be emmetropia (closest to plano<br/>spherical equivalent) for first and second eyes.Visit Schedule:All subjects will be bilaterally implanted with a study<br/>lens model; the second eye is to be implanted within<br/>1 month of the first-eye surgery.

There are five scheduled study visits: Preoperative for both eyes examined together; Operative visits for each eye; and 1-month and 6-month visits

# STUDY POPULATION CHARACTERISTICS:

Condition:Bilateral cataracts with otherwise-healthy eyes

Number of Subjects:Approximately 220 subjects (110 test, 110 control)<br/>will be enrolled, allowing approximately 10% for<br/>screening failures and loss to follow-up, to achieve at<br/>least 100 evaluable subjects in the test or control<br/>group at 6 months.

Among 15 sites, each should enroll approximately 15 subjects, and no site may enroll more than 25% of the enrollment total.

# Inclusion Criteria (all study criteria apply to each study eye):

- Minimum 22 years of age
- Bilateral cataracts for which posterior chamber IOL implantation has been planned
- Preoperative best corrected distance visual acuity (BCDVA) of 20/40 Snellen or worse with or without a glare source
- Potential for postoperative best corrected visual acuity of 20/30 Snellen or better
- Corneal astigmatism parameters:
  - Normal corneal topography and no irregular corneal astigmatism
  - Postoperative astigmatism can be surgically managed to be less than 1 D in each eye
- Clear intraocular media other than cataract in each eye
- Availability, willingness, ability, and sufficient cognitive awareness to comply with examination procedures and study visits
- Signed informed consent and HIPAA authorization or equivalent documentation necessary to comply with applicable privacy laws pertaining to medical treatment in the governing countries

• Ability to understand and respond to a questionnaire in English

## Exclusion Criteria (all study criteria apply to each study eye):

- Any conditions or circumstances, including those specified in the TECNIS Eyhance<sup>™</sup> IOL Directions for Use, that, in the opinion of the investigator, may increase risk over benefit or result in an adverse event during the study.
- Inability to focus or fixate for prolonged periods of time (e.g., due to strabismus, nystagmus, etc.) for study testing
- Concurrent participation or participation within 60 days prior to preoperative visit in any other clinical trial
- Desire for monovision correction

## **EVALUATION CRITERIA:**

The purpose of this clinical study is to compare the clinical outcomes for subjects bilaterally implanted with the TECNIS Eyhance Intraocular Lenses to those bilaterally implanted with TECNIS 1-piece Intraocular Lenses.

All primary and secondary endpoints will be evaluated at 6 months unless otherwise specified. Details of the planned statistical analysis for each endpoint are provided in the statistical analysis section of this clinical protocol.

## Primary Effectiveness Endpoint

## Mean Best-corrected Distance Visual Acuity (BCDVA)

Monocular first eyes in the test group will demonstrate distance (far) visual acuity that is comparable to that of the control group. This endpoint will support that the test lens provides far vision that is comparable to that of a standard monofocal

Mean (logMAR) monocular BCDVA at 4 meters under photopic conditions for first eyes in the test vs. control lens groups at 6 months.

Success Criteria: The mean monocular BCDVA for first eyes in the test lens group will be statistically non-inferior to that of the control lens group by a 0.1 logMAR margin.

## Secondary Effectiveness Endpoints

Mean Distance-corrected intermediate Visual Acuity at 66 cm (DCVA66)

Monocular first eyes in the test group will demonstrate better visual acuity at 66 cm than those in the control group. This endpoint will support that the test lens provides better intermediate vision than a standard monofocal.

Mean (logMAR) monocular DCVA66 under photopic conditions for first eyes at 6 months.

Success Criteria: Statistically significant improvement in mean DCIVA at 66 cm (logMAR) in test lens group vs. the control lens group.

## Safety Endpoints

- Rate of secondary surgical interventions (first eyes) related to optical properties of the lens
- Rate of SPE-related adverse events (first eyes) vs. ISO SPE rates
- Rate of monocular (first eyes) BCDVA
   vs. ISO SPE
   rates

## **OTHER ENDPOINTS**



## DATA ANALYSIS:

The investigational IOL Model ICB00 will be compared to the control IOL Model ZCB00. The 6-month postoperative visit is the key analysis time point for all endpoints, although all data will be reviewed at other time points when assessed.



All data will be reported by IOL group.

# STUDY VISITS AND PROCEDURES:

Patient qualification as a study subject will be assessed at the preoperative visit according to the inclusion/exclusion criteria. The Informed Consent Document and Authorization for Use/Disclosure of Health Information form (HIPAA authorization) must be signed by any patients who agree to participate in the study prior to undergoing any study-specific procedures. Each subject will receive lenses from the same lens group in both eyes: either Eyhance lenses (Model DIB00) or control lenses (Models ZCB00/DCB00 [preloaded format]).



Key preoperative data include ocular health and history, visual acuities, manifest refraction, keratometry, biomicroscopic slit-lamp findings, ocular symptoms, and biometry. The operative visit will include standard procedures for cataract surgery and IOL implantation. Key postoperative data collection includes monocular and binocular uncorrected and distance-corrected visual acuities, defocus curve, slit-lamp findings, non-directed visual symptoms, questionnaires, and adverse events.

# 2. BACKGROUND/INTRODUCTION

Cataract surgery is one of the most commonly performed surgeries worldwide. Current clinical options, while effective, include the choice of monofocal or multifocal lenses.<sup>1</sup> With standard monofocal lenses, the patient's vision is in focus at only one distance (near, intermediate, or distance). Patients implanted with standard monofocal lenses often require glasses after surgery to improve their near and/or intermediate vision.



# 3. CLINICAL HYPOTHESIS

The mean best-corrected distance visual acuity of the TECNIS Eyhance Intraocular Lens group will be non-inferior to that of the control lens. In addition, the TECNIS Eyhance Intraocular lens group will demonstrate better distance-corrected intermediate visual acuity compared to the control.

# 4. STUDY DESIGN

This study is a 6-month, prospective, multicenter, bilateral, randomized subject- and evaluator-masked, clinical investigation of the TECNIS Eyhance IOL versus the TECNIS 1-piece IOL.

The study will be conducted at up to 15 sites in the U.S.A and will enroll approximately 220 subjects to achieve approximately 200 randomized and bilaterally implanted subjects, resulting in approximately 100 evaluable subjects in each lens group at 6

months. Subjects are to be implanted with the same IOL in both eyes: TECNIS Eyhance IOL or the TECNIS 1-Piece IOL. The eye implanted first will be considered the primary study eye.

## 5. ACRONYMS

The following acronyms are used throughout this document:

- AE: adverse event
- BCDVA: best-corrected distance visual acuity
- UCDVA: uncorrected distance visual acuity
- UCVA: uncorrected visual acuity
- DCVA: distance-corrected visual acuity
- D: Diopters
- •

## 6. STUDY OBJECTIVES AND ENDPOINTS

This study will compare the clinical outcomes for subjects bilaterally implanted with the TECNIS Eyhance Intraocular Lenses to those bilaterally implanted with TECNIS 1-piece Intraocular Lenses at 6 months postoperative.

## 6.1 PRIMARY EFFECTIVENESS ENDPOINT

# Mean Best-corrected Distance Visual Acuity (BCDVA)

Monocular first eyes in the test group will demonstrate distance (far) visual acuity that is comparable to that of the control group. This endpoint will support that the test lens provides far vision that is comparable to that of a standard monofocal

Mean (logMAR) monocular BCDVA at 4 meters under photopic conditions for first eyes in the test vs. control lens groups at 6 months.

Success Criteria: The mean monocular BCDVA for first eyes in the test group at 6 months will be statistically non-inferior to that of the control by a 0.1 logMAR margin.

# 6.2 SECONDARY EFFECTIVENESS ENDPOINTS

Mean Distance-corrected Intermediate Visual Acuity at 66 cm (DCVA66)

Monocular first eyes in the test group will demonstrate better visual acuity at 66 cm than those in the control group. This endpoint will support that the test lens provides better intermediate vision than a standard monofocal.

Mean (logMAR) monocular DCVA66 under photopic conditions for first eyes in the investigational vs control lens group at 6 months.

Success Criteria: Statistically significant improvement in mean DCIVA at 66 cm (logMAR) in test lens group vs. the control lens group at 6 months.

## 6.3 SAFETY ENDPOINTS

- Rate of secondary surgical interventions (first eyes) related to optical properties of the lens
- Rate of SPE-related adverse events (first eyes) vs. ISO SPE rates
- Rate of monocular (first eyes) BCDVA
   vs. ISO SPE
   rate

# 6.4 OTHER ENDPOINTS



# 7. STUDY PRODUCTS

# 7.1 INTRAOCULAR LENSES

# **TECNIS Eyhance IOL**

The TECNIS Eyhance IOL is a posterior chamber, 1-piece, aspheric, refractive, acrylic, foldable IOL designed for placement in the capsular bag (**Figure 1**). The lens has a refractive optic design with an aspheric anterior surface to slightly extend the depth of focus.



FIGURE 1: Drawing and Photograph of a TECNIS Eyhance IOL



# **INDICATION**

The TECNIS Eyhance IOL is indicated for the visual correction of aphakia in adults in whom a cataractous lens has been removed by phacoemulsification. The lens is intended to be placed in the capsular bag.

# **TECNIS 1-Piece IOL**,

The JJSV TECNIS 1-Piece IOL, Model ZCB00 (**Figure 2**) has been approved and marketed for many years. This IOL is a single-piece, acrylic, monofocal IOL with a modified prolate (aspheric) design on the anterior optic surface to reduce spherical aberration. The TECNIS 1-Piece IOL is also commercially available in a preloaded configuration in the TECNIS Simplicity Delivery System, collectively designated as

Model DCB00. Either Model DCB00 or ZCB00 may be used as the control lens in this study.



FIGURE 2: Drawing and Illustration of a TECNIS 1-Piece IOL

# STORAGE AND DISTRIBUTION

All lenses will be obtained from the site's own inventory. All study lenses should be stored in the original packaging and kept in a dry place. Lenses should not be stored in direct sunlight or at temperatures greater than 45° C (113°F). Each lens is packaged in a lens tray and sealed in a peel-pouch. The lens is sterile as long as the package has not been opened or damaged and the shelf-life expiration date has not been exceeded.

The Principal Investigator is responsible for ensuring that the study-provided lenses are used only for subjects enrolled in this study.



# 7.2 IMPLANTATION SYSTEMS

# 8. STUDY POPULATION

All study subjects will be enrolled from the normal surgical cataract population at up to 15 sites in the U.S.A. Approximately 220 subjects will be enrolled to achieve

approximately 200 randomized and bilaterally implanted subjects, resulting in at least 200 evaluable subjects (a minimum of 100 in each test and control groups) at 6 months.

This study will include only subjects undergoing bilateral primary cataract extraction and IOL implantation and who meet all of the study inclusion and exclusion criteria in both eyes. All subjects who meet the eligibility criteria will be offered enrollment in the study.

# 8.1 INCLUSION CRITERIA (ALL STUDY CRITERIA APPLY TO EACH STUDY EYE)

- Minimum 22 years of age
- Bilateral cataracts for which posterior chamber IOL implantation has been planned
- Preoperative best corrected distance visual acuity (BCDVA) of 20/40 Snellen or worse with or without a glare source
- Potential for postoperative best corrected visual acuity of 20/30 Snellen or better
- Corneal astigmatism parameters:
  - Normal corneal topography and no irregular corneal astigmatism
  - Postoperative astigmatism can be surgically managed to be less than 1 D in each eye
- Clear intraocular media other than cataract in each eye
- Availability, willingness, ability, and sufficient cognitive awareness to comply with examination procedures and study visits
- Signed informed consent and HIPAA authorization or equivalent documentation necessary to comply with applicable privacy laws pertaining to medical treatment in the governing countries
- Ability to understand and respond to a questionnaire in English

# 8.2 EXCLUSION CRITERIA

 Any conditions or circumstances, including those specified in the TECNIS Eyhance<sup>™</sup> IOL Directions for Use, that, in the opinion of the investigator, may increase risk over benefit or result in an adverse event during the study.

- Inability to focus or fixate for prolonged periods of time (e.g., due to strabismus, nystagmus, etc.)
- Concurrent participation or participation within 60 days prior to preoperative visit in any other clinical trial
- Desire for monovision correction

# 9. INVESTIGATOR SELECTION

## 9.1 INVESTIGATOR QUALIFICATIONS

JJSV will select ophthalmic surgeons who have completed a residency in ophthalmology (or its documented equivalent) and are licensed to practice medicine and perform surgery at his/her investigative site. Each site will have one designated principal investigator; some sites may have additional implanting sub-investigators/surgeons.



# 9.2 INVESTIGATOR OBLIGATIONS

Investigators are required to fulfill the following obligations:

- Conduct the study in accordance with the relevant and current protocol. Investigator
  will make changes to a protocol only after notifying and obtaining approval from JJSV
  and the Institutional Review Board (IRB), except when necessary to protect the
  safety, rights, or welfare of subjects
- Personally, conduct and supervise the study
- Maintain a list of appropriately qualified persons to whom the investigator has delegated significant trial-related duties
- Be responsible for protecting the rights, safety, and welfare of subjects under the investigator's care and be responsible for the control and documentation of the devices under investigation
- Inform patients that the device(s) are being evaluated in this study are approved products and that study requirements relating to obtaining informed consent and IRB approval are met according to 21CFR50, 21CFR56, 21CFR812 and all other applicable laws and regulations
- Maintain confidentiality as required by HIPAA or similar laws and regulations
- Shall not obtain written informed consent from any subject to participate or allow any subject to participate before obtaining IRB approval
- Document in each subject's case history that informed consent was obtained prior to participation in the study as required by 21CFR812

- Report to JJSV and the reviewing IRB any adverse experiences that occur during the course of the study in accordance with applicable laws and regulations
- Maintain adequate and accurate records in accordance with applicable laws and regulations and make available all study documents and subject medical records for inspection by either JJSV, duly authorized regulatory agencies (e.g., FDA, PMDA, Health Canada, MOH, etc.) and/or the IRB
- Submit progress reports on the study to JJSV and the reviewing IRB at regular intervals, but no less often than yearly, as required by 21CFR812.150
- Ensure the IRB that is responsible for initial and continuing review of the study complies with applicable laws and regulations
- Report all changes in research activity and all unanticipated problems involving risks to patients to the IRB and JJSV
- Provide sufficient accurate financial information to JJSV to allow JJSV to submit complete and accurate certification or disclosure statements as required by 21CFR54. Promptly update this information if any relevant changes occur during the course of the investigation or for up to one year following completion of the study
- Comply with all other obligations of clinical investigators and requirements according to all applicable FDA regulations (e.g., 21CFR812), all other applicable laws and GCP standards (e.g., ISO 14155), and all conditions of approval imposed by the reviewing IRB
- Ensure that all associates, colleagues, and employees assisting in the conduct of the study are adequately informed about the protocol, their study-related duties and functions and agree to fulfill their obligations in meeting the above commitments.

Investigators shall provide adequate time and resources to conduct and report on the study. The Investigator, or delegate, shall notify JJSV of any change in the conduct of the study including changes in study personnel assigned to the study project, or maintenance of study records, etc.

# 9.3 INVESTIGATOR APPROVAL

It is the responsibility of the investigator to obtain prospective approval of the study protocol, protocol amendments or changes, informed consent forms and other relevant documents (e.g., advertisements) from the IRB. All correspondence with the IRB should be retained in the Investigator Study Files/Notebook. Copies of IRB submissions and approvals should be forwarded to JJSV. Study sites will obtain IRB approvals and fulfill any other site-specific regulatory requirements.



## 10. EXPERIMENTAL PLAN

## 10.1 OVERVIEW

This study will be conducted in accordance with U.S. Code of Federal Regulations, the Declaration of Helsinki, ISO 14155:2011 and all other applicable laws and regulations. The study will not begin until IRB approvals have been obtained.

This study will be a prospective, multicenter, bilateral, randomized, subject/evaluatormasked clinical investigation conducted at up to 15 sites. Approximately 220 subjects will be enrolled to achieve approximately 200 evaluable subjects (approximately 100 in each test and control groups) at 6 months. After informed consent is obtained and confirmation that all eligibility criteria are met, the eye(s) may be treated.





Key preoperative data include ocular health and history, visual acuities, manifest refraction, keratometry, topography, biomicroscopic slit-lamp findings, ocular symptoms, and biometry. The operative visit will include standard procedures for cataract surgery and IOL implantation. Key postoperative data collection includes monocular and binocular uncorrected and distance-corrected visual acuities,

adverse events. A chart summary of all examination procedures required at each study visit is provided in **Appendix A**. If needed, specific equipment necessary to perform the required procedures will be supplied for the duration of the study (**Appendix B**).

## 10.2 VISIT SCHEDULE

The study visit schedule for all study subjects is outlined in Table 2.

All subjects are intended to have bilateral cataract surgery

Subjects will be followed per standard of

care prior to the 1-month study visit. Unscheduled visits may be conducted as necessary at the discretion of the investigator for medically indicated follow-up.

VISIT	EYES EVALUATED	Ехам	VISIT WINDOW
1	Both Eyes	Preoperative Exam	
2	First Eye	Operative	days after preoperative exam
3	Second Eye	Operative	
4	Both Eyes	1 month	
5	Both Eyes	6 months <sup>a</sup>	

#### **TABLE 2: Visit Schedule**

# 10.3 PREOPERATIVE PROCEDURES

All subjects treated in the study must sign the current IRB-approved informed consent form and meet the eligibility criteria. The informed consent form <u>must</u> be signed before any study-specific examinations are performed, and <u>this must be documented in the source documents</u>. An Authorization for Use/Disclosure of Health Information Form (HIPAA authorization) or similar medical treatment privacy law documentation must also be signed.

If a test/exam is

required by the protocol but is not part of the routine testing the investigator performs for the cataract evaluation, that test/exam is considered to be study-specific and is not to be done until after the informed consent form has been signed by the subject. Following the informed consent process, completion of the preoperative study exam and determination that the subject meets all of the required entrance criteria (including lens power determination), the subject may be randomized and scheduled for surgery.

As the Informed Consent Form is signed at the beginning of the preoperative study exam, some subjects may not qualify after study-specific testing is performed. Subjects will be considered screen-failures if they do not qualify, or if they qualify but decide not to participate further in the study, or if they decide not to proceed with surgery. These subjects will be exited from the study.

Preoperative testing to be performed for each eye includes the following:

## POTENTIAL DISTANCE VISUAL ACUITY

The subject must be capable of achieving Snellen 20/30 or better best-corrected distance vision in each eye after cataract extraction and IOL implantation.

BEST-CORRECTED DISTANCE VISUAL ACUITY AND MANIFEST REFRACTION

Preoperative manifest refraction is required. Monocular, best-corrected distance visual acuity (BCDVA) is to be measured using a standard Snellen chart or equivalent and must be Snellen 20/40 or worse, with or without a glare source.

## **KERATOMETRY**

Predicted postoperative corneal astigmatism, as measured by keratometry, should be less than 1.00 D. No irregular astigmatism should be present preoperatively. Postoperative astigmatism can be surgically managed to be less than 1 D in each eye.

# CONTACT LENS WEAR AND CORNEAL STABILITY

For contact lens wearers, keratometric corneal stability following cessation of contact lens wear must be verified before surgery. PMMA contact lenses are not to be worn for at least 6 months; rigid gas-permeable contact lenses are not to be worn for at least 1 month; and extended-wear or daily-wear soft contact lenses are not to be worn for at least 1 week prior to the preoperative visit. Corneal stability must be verified for any

subject who has worn PMMA lenses within 5 years or any other type of contact lenses within 6 months prior to the preoperative visit. To verify stability, repeat the keratometric measurements at least 1 week after the initial preoperative baseline keratometric measurement. Corneal curvature is considered to be stable if the difference in keratometric cylinder (vertical vs. horizontal keratometric readings) between the two time points does not exceed 0.50 D. Additionally, the difference between the two horizontal readings as well as the difference between the two vertical readings must be no more than 0.50 D. Changes in keratometric axis must be no more than ±15°. If a change exceeding these criteria is noted, surgery is to be postponed until keratometric stability is demonstrated. Final biometry measurements and surgery should not take place until keratometric stability is achieved.

Note: if this method of determining corneal stability is not a standard procedure in your practice, the subject must sign the informed consent form prior to starting the stability procedure.

#### IOL POWER AND TARGETED REFRACTION (EMMETROPIA)

Axial length and anterior chamber depth (ACD) must be measured to determine the appropriate lens power to implant using an A-Constant.



## ADDITIONAL PREOPERATIVE INFORMATION TO BE COLLECTED:

- Informed consent documentation
- Subject demographic information
- Planned surgery dates for each eye
- Ocular history and systemic medical history, including presence of ocular pathology for each eye
- Intraocular pressure for each eye
- Cataract type and density for each eye
- Fundus exam findings for each eye
- Medical findings, cataract assessment via biomicroscopic slit-lamp exam for each eye
- Ocular/visual symptoms (non-directed) for each eye

• Ocular and systemic medications

## 10.4 RANDOMIZATION AND MASKING

A randomization list will be created by the JJSV biostatistician for each investigative site and the randomization code will be uploaded into the electronic data capture system (EDC).



As part of the informed consent process, the investigator or delegate will explain to the subject the requirements of a randomized study and the differences expected between the two lens models in the study: TECNIS Eyhance lens and the control lens.

The subjects and the study technicians performing the postoperative vision tests are to be masked through study completion.



subject will be given the permanent IOL implant identification card.

# 10.5 STUDY LENS SUPPLY

Sites will follow their respective procedures for storage, access, and use of intraocular lenses, and accountability for implanted study lenses must be documented (See Section 15.2 Lens Accountability).

# **10.6 OPERATIVE PROCEDURES**

The investigator should use his or her standard, small-incision, cataract extraction surgical technique using the preloaded system or one of the JJSV-validated insertion systems described in Section 7.2.



Operative case report forms will include the following information: INCISION TYPE AND SIZE

Lenses should be inserted through an incision ranging in size from approximately 2.2-3.0 mm, per the investigator's standard technique. The incision may be clear corneal, limbal or scleral tunnel at the discretion of the investigator.

# CAPSULORHEXIS SIZE AND METHOD

The anterior capsulotomy should be a continuous, curvilinear capsulorhexis approximately 5.0 to 5.5 mm in diameter to allow slight overlap of the lens optic edge.

# LENS REMOVAL

Lens removal may occur using laser fragmentation combined with phacoemulsification/aspiration or using only phacoemulsification/aspiration.

# VISCOELASTIC

Viscoelastic materials should be used as is customary for each investigator and recorded on the case report form (CRF).

# IMPLANT INSTRUMENTATION USED

TECNIS 1-Piece Model ZCB00 lenses should be folded for implantation and inserted into the capsular bag

#### SURGICAL COMPLICATIONS

Should a surgical complication occur, implantation of a study lens will be at the investigator's discretion. In the event of capsular bag or zonular rupture, the lens should not be implanted if the complication may result in lens instability. Additionally, the lens is not to be implanted in the sulcus.



## **MEDICATIONS**

Preoperative, operative, and intraoperative medications should be used as is customary for each investigator and will be recorded in source and on the CRF.

#### TYPE OF CLOSURE

Wound closure is left to the surgeon's discretion and will be recorded on the CRF.

## ADDITIONAL OPERATIVE INFORMATION COLLECTED INCLUDES:

- Date of surgery
- Operative eye
- Lens power and serial number
- Lens placement
- •
- Surgical technique according to protocol
- Product complaints
- Serious and/or device-related adverse events

## 10.7 POSTOPERATIVE PROCEDURES

Postoperatively, subjects will be examined according to the schedule in Section 10.2, Visit Schedule.

Study technicians responsible for conducting all vision testing will be masked.

A postoperative CRF will collect the following information, although not all data are required at every visit (see Appendix A):

#### MANIFEST REFRACTION

Postoperative study manifest refractions are to be performed

- . Manifest refraction (MR) is to be performed as detailed in Appendix C.

# DISTANCE VISUAL ACUITY TESTING (MASKED PROCEDURE)

Distance visual acuity will be measured postoperatively under photopic lighting conditions (85 cd/m<sup>2</sup>, 80–110 cd/m<sup>2</sup> acceptable)

Instructions for are detailed in **Appendix E**, and for distance

visual acuity in **Appendix F**.

The following distance visual acuity measurements are to be performed per the visit schedule in Appendix A:

Test	Test Distance	Illumination	Type of Testing	
UCDVA	4 m	Photopic (85 cd/m <sup>2</sup> )	Monocular, Binocular	
BCDVA	4 m	Photopic (85 cd/m <sup>2</sup> )	Monocular, Binocular	

# INTERMEDIATE VISUAL ACUITY AT 66 CM (MASKED PROCEDURE)

Intermediate visual acuity at 66 cm (including low contrast at 25%) will be measured under photopic conditions (85 cd/m<sup>2</sup>, 80-110 cd/m<sup>2</sup> acceptable) at a test distance of 66 cm. Instructions for using the second are detailed in

Appendix E and for intermediate visual acuity testing in Appendix G.

The following visual acuity measurements are to be performed per the visit schedule in **Appendix A**:

Test	Test Distance	Illumination	Type of Testing	
UCVA	66 cm	Photopic (85 cd/m²)	Binocular	
DCVA	66 cm	Photopic (85 cd/m²)	Monocular, Binocular	
	66 cm	Photopic (85 cd/m²)	Binocular	

# INTERMEDIATE VISUAL ACUITY AT 50 CM (MASKED PROCEDURE)

Intermediate visual acuity at 50 cm will be measured under photopic conditions (85 cd/m<sup>2</sup>, 80-110 cd/m<sup>2</sup> acceptable) at a test distance of 50 cm. Instructions for using **acceptable** are detailed in **Appendix E** and for intermediate visual acuity testing in **Appendix H**.

The following visual acuity measurements are to be performed per the visit schedule in **Appendix A**:

Test	Test Distance	Illumination	Type of Testing	
UCVA	50 cm	Photopic (85 cd/m²)	Binocular	
DCVA	50 cm	Photopic (85 cd/m²)	Monocular, Binocular	

# NEAR VISUAL ACUITY AT 40 CM (MASKED PROCEDURE)

Near visual acuity will be measured under photopic conditions (85 cd/m<sup>2</sup>, 80-110 cd/m<sup>2</sup> acceptable) at a test distance of 40 cm. Instructions for a set di

The following visual acuity measurements are to be performed per the visit schedule in **Appendix A**:

Test	Test Distance	Illumination	Type of Testing	
UCVA	40 cm	Photopic (85 cd/m²)	Binocular	
DCVA	40 cm	Photopic (85 cd/m²)	Monocular, Binocular	





## **BIOMICROSCOPIC SLIT-LAMP EXAM**

A biomicroscopic slit-lamp exam must be performed at each postoperative visit to determine the presence or absence of any medical or lens findings, complications, or adverse events. IOL decentration and tilt are to be determined subjectively. The center of the lens relative to the pupil can be used to determine IOL decentration. Note that the pupil center may not always be aligned with the visual axis of the eye; therefore, the investigator should consider deviations in pupil center from visual axis when reporting IOL decentration.

Findings of aqueous cells and flare, corneal edema, posterior capsule striae (wrinkles), posterior capsular opacification and IOL glistenings are to be rated using standardized grading scales of 0 to +4 (0 = none, +4 = severe) during the slit-lamp biomicroscopy. The specific grading scales are provided in **Appendix L**.

## ND: YAG CAPSULOTOMY

FUNDUS EXAM

A fundus exam is to be performed at the 6-month visit to evaluate retinal status and fundus visualization.

The same fundus examination method that was used preoperatively should be used for the 6-month study visit.

## INTRAOCULAR PRESSURE

Intraocular pressure (IOP) is to be measured using the investigator's usual method. It is recommended that the same method be used for all study subjects at the site for the duration of the study.

## **KERATOMETRY**

## OCULAR SYMPTOMS (NON-DIRECTED; SPONTANEOUS)

Subjective ocular symptoms are to be assessed at each postoperative visit

## **MEDICATIONS**

Postoperative ocular medications should be used as is customary for each investigator and recorded in the source document for each subject. Postoperative medications related to surgery, adverse events and serious adverse events will be recorded on a medication log CRF as applicable.

## ADVERSE EVENTS

Subjects should be assessed at each visit for occurrence of and/or change in status of any adverse events, particularly serious and/or device-related adverse events. See Section 11.0, Adverse Events, for further information.

## QUESTIONNAIRES


#### Testing Equipment:

All visual acuities, as well as defocus measurements, will be performed using the

This system provides a descending LogMAR chart
for visual acuity testing at

# 10.8 EXIT OF SUBJECTS

An Exit CRF will be completed for all subjects, either when they complete the study or if they exit early.

It is the responsibility of the investigator to provide complete follow-up data to JJSV for each subject, and every attempt should be made to gather that complete follow-up data for all subjects enrolled, as missing data can have a negative effect on the study results. Patients who would be traveling, relocating or otherwise unavailable for postoperative follow-up visits should not be enrolled in this clinical study.

A subject will be considered a "screen failure" if he/she does not meet the eligibility criteria or does not receive study treatment. Reasons may include: the planned implant being aborted due to surgical complications, the subject withdrawing consent prior to treatment or the subject died prior to treatment.

Subjects will be "discontinued" from the study if one study lens (if implanted unilaterally) or both study lenses (if implanted bilaterally) are removed or if the subject dies. If a subject receives at least one study lens, he/she is to be followed according to the schedule in Table 2 (Section 10.2) for visit windows.

Subjects will be considered "lost-to-follow-up" from the study only if irretrievably lost for unavoidable reasons such as: subject moved/unable to locate, subject ill/unable to travel, subject uncooperative/refuses further study participation. In the event of subject relocation, effort must be made by the investigator to secure follow-up information (i.e., slit-lamp findings and general visual acuity, etc.) from the subject's new physician. If a subject is exited early from the study, the investigator must indicate the reason for study exit on the CRF. In the event of a lens removal or other serious adverse event, the subject may be exited from the study; however, effort must be made by the investigator to follow the subject until resolution of the adverse event before exiting the subject from the study.

#### 10.9 UNSCHEDULED VISITS

During the study period, if a non-protocol-required visit is done for the purpose of medically-indicated follow-up for a study eye, data from this visit should be reported using the Unscheduled Visit CRF. The need for unscheduled visits is at the investigator's discretion. Specific examinations to be performed at unscheduled visits are also at the discretion of the investigator (based on the reason for the unscheduled visit) and data are to be recorded in the appropriate section of the CRF. Data to be collected may include:

- Snellen manifest refraction
- Uncorrected and best-corrected distance visual acuity using a Snellen chart

- Intraocular pressure
- Slit-lamp examination for medical and/or lens findings
- Fundus exam
- Ocular symptoms
- Adverse events
- Medications

Conditions found postoperatively, but previously documented at the preoperative visit, do not trigger an unscheduled visit report. However, if the severity of the condition increases from the preoperative visit, an Unscheduled Visit CRF is needed.

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# **10.10 PROTOCOL DEVIATIONS**

Any departure from the protocol procedures represents a protocol deviation. Protocol deviations may be subject-based (e.g., inclusion/exclusion criteria, informed consent deviation, etc.) or procedural-based (e.g., out-of-interval visits, non-compliance with testing procedures, etc.). Any deviation made to protect the life or physical well-being of a subject in an emergency without obtaining informed consent must be reported to JJSV within 5 working days. Protocol deviations will be monitored by JJSV, and if the non-compliance is persistent or egregious, JJSV may take action, including but not limited to termination of the investigator's participation in the study. The investigator is also responsible for informing the reviewing IRB of instances of protocol non-compliance in accordance with the IRB requirements.

## 11. ADVERSE EVENTS AND PRODUCT COMPLAINTS

## 11.1 ADVERSE EVENT DEFINITIONS

## Adverse Event (AE)

An adverse event is defined (per ISO 14155) as any untoward medical occurrence, unintended disease or injury, or untoward clinical signs (including abnormal laboratory findings) in subjects, users, or other persons, whether or not related to the study device.

#### Serious Adverse Event (SAE)

An adverse event is considered serious (per ISO 14155) if it is an untoward occurrence which may or may not be related to use of the study device that

- is sight- or life-threatening,
- results in death,
- requires inpatient hospitalization or prolongation of hospitalization (a planned hospitalization for a pre-existing condition without a serious deterioration in health is not considered a serious adverse event),
- results in permanent impairment of a body structure or body function,
- necessitates medical or surgical intervention to prevent permanent impairment to a body structure or function, or

• results in fetal distress, fetal death or a congenital abnormality or birth defect

# Device-Related Adverse Event/Adverse Device Effect (ADE)

A device-related adverse event is defined as any adverse event that is believed to be definitely, probably, possibly, or unlikely to be related to the study device (following the guidelines in Section 11.4, Causal Relationship). A device-related event is also considered an adverse device effect (ADE; following ISO 14155) resulting from the use of the study device that may result from user error, insufficiencies, or inadequacies in the instructions for use, deployment, implantation, installation, operation of any malfunction of the device.

## Anticipated Study-Specific Serious Adverse Events

The following is a list including, but not limited to, ocular serious adverse events (SAE) that are anticipated and must be reported to JJSV for this study. Adverse event definitions in accordance with the American Academy of Ophthalmology Task Force Consensus Statement.

- Chronic anterior uveitis: Persistent anterior segment inflammation characterized by grade 1+ cell or greater using Standardization of Uveitis Nomenclature (SUN) criteria that persists for greater than 3 months after surgery, or relapses in less than 3 months after discontinuation of therapy, or the subject is maintained on therapy for more than 3 months to control inflammation
- Cystoid macular edema: Macular edema diagnosed by clinical examination and adjunct testing (e.g., OCT, FA) resulting in BCDVA of 20/40 or worse at 1 month or later
- Corneal Edema: Corneal swelling (stromal or epithelial) resulting in BCDVA of 20/40 or worse at 1 month or later
- Endophthalmitis/Intraocular infection: Intraocular inflammation leading to diagnostic vitreous tap and intraocular antibiotics.
- Hypopyon
- Hyphema
- Increased IOP: Elevation of IOP by ≥ 10 mmHg above baseline and greater than 25 mmHg measured after 7 days postoperative
- Mechanical pupillary block: Shallowing of anterior chamber due to obstruction of aqueous humor flow from the posterior to anterior chamber through the pupil by the vitreous face, or implanted device
- Retinal detachment/Tear: Partial or complete retinal detachment associated with retinal tear
- Toxic anterior segment syndrome (TASS): Acute, non-infectious inflammation of the anterior segment that starts within 24 hours after surgery, usually resulting in

hypopyon and commonly presenting with corneal edema, and that improves with steroid treatment

- Secondary IOL intervention (resulting from visual symptoms, tilt, decentration, refractive error, retained lens material):
  - Exchange The study lens is replaced with the same lens model
  - Removal The study lens is removed and replaced with a non-study lens or no lens is implanted
  - Reposition The existing lens is surgically moved to another location or rotated

**NOTE 1:** Wound burps during the first week postoperatively, suture removal, planned blepharoplasty and Nd:YAG capsulotomy (for PCO) are not considered adverse events for this study.

**NOTE 2**: Any adverse event that is immediately sight- or life-threatening will be considered serious. Secondary interventions administered to hasten the resolution of such conditions that otherwise will not result in permanent damage will not be reported as serious adverse events.

# Unanticipated Adverse Device Effect (UADE)/Unanticipated Serious Adverse Device Effect (USADE)

Any UADE (USA 21CFR 812.3(s)) or USADE (ISO 14155) is defined as any serious adverse effect on health or safety or any life-threatening problem or death caused by, or associated with, a device, if that effect, problem, or death was not previously identified in nature, severity, or degree of incidence in the investigational plan (i.e., this protocol), application (including a supplementary plan or application), or risk assessment, or any other unanticipated serious problem associated with a device that relates to the rights, safety, or welfare of subjects.

# 11.2 PRODUCT COMPLAINT/DEVICE DEFICIENCY DEFINITION

A product complaint/device deficiency is defined (21 CFR 820.3(b) and ISO 14155) as any alleged deficiency related to the identity, quality, durability, reliability, safety, effectiveness, or performance of a device. This may include malfunctions, use error and inadequacies in labeling. Product complaints can pertain to any marketed JJSV device being used in the study. The investigator is to assess whether the deficiency could have led to a serious adverse event without suitable action or intervention or under less fortunate circumstances.

# 11.3 ADVERSE EVENT AND COMPLAINT REPORTING REQUIREMENTS

All adverse events and any complaint encountered using any JJSV product, regardless of severity and whether or not attributed to the study device(s), are to be reported to

JJSV and recorded on the case report form corresponding to the visit during which awareness of the event occurred. Adverse events are also to be reported to the reviewing IRB as per the IRB's reporting requirements. If required, adverse events will be reported to the appropriate regulatory agencies (e.g., FDA) according to all applicable laws and regulations.

Reporting of adverse events shall follow the USA Code of Federal Regulations (21CFR812) for sites in the USA. General guidelines are provided below:

#### Adverse Event Reporting

An adverse event that is not serious or device-related is to be reported to JJSV in a timely manner. Notification of non-serious and non-device related adverse events will occur by recording events on the CRF when noted. Such adverse events are also to be reported to the reviewing IRB per their reporting requirements.

#### **Complaints/Device Deficiency Reporting**

A general product complaint or device deficiency is to be reported to JJSV in a timely manner. Notification of complaints/device deficiencies will occur by recording complaints on the CRF at the visit the complaint occurs (e.g., operative visit) and/or by a phone call/email to JJSV.



## Serious and/or Device-Related Adverse Event Reporting

Any SAE/ADE is to be reported to JJSV by phone, email and/or by submitting the completed SAE/ADE CRF. Any SAE or device-related AE should also be reported to the investigator's IRB per their reporting requirements.

# Unanticipated Adverse Device Effect (UADE)/Unanticipated Serious Adverse Device Effect (USADE) Reporting

If during the study, a serious adverse event occurs that may reasonably be regarded as device-related and was not previously expected in nature, severity, or degree of incidence, the investigator is to report the UADE/USADE to JJSV

the investigator's IRB as soon as possible (and no later than 10 working days after learning of the event for sites in the USA as required by 21CFR812).

# 11.4 CAUSAL RELATIONSHIP

The investigator should always be alert to adverse events that may be related to the study device or the use of the study device (i.e., the procedure specific to the initial application of the device). An attempt should be made in every case to determine the causality of the event. The following definitions are to be used as guidelines in determining the relationship between the event and the study device and/or use of the device.

Definitely related:	If the event is associated with the device and/or the use of the
	device beyond a reasonable doubt, a causal relationship exists
	between the adverse event and the device and/or the use of the
	study device.

- Probably related: There is a reasonable possibility of a causal relationship between the adverse event and the device and/or the use of the study device and/or the adverse event cannot be reasonably explained by another cause.
- Possibly related: The adverse event has not been determined to be related to the device or the use of the device, but no other cause has been identified and the device and/or the use of the study device cannot be ruled out as a possible cause.
- Unlikely to be related: The possibility of a potential causal relationship between adverse event and the device and/or the use of the device could exist, but the adverse event can be reasonably explained by another cause.
- Not related: There is no possibility of a causal relationship between the adverse event and the device and/or the use of the study device and/or the adverse event can be attributed to another cause.

If an adverse event is believed to be definitely, probably, or possibly related to the study device and/or the use of the device, the event will be considered related to the study device and/or the use of the device.

# 11.5 ADVERSE EVENT FOLLOW-UP

For every adverse event, appropriate measures should be undertaken to treat and/or monitor the subject until resolution occurs. The subject's files are to include all pertinent medical data relating to the event including the subject's medical records, medical reports and/or judgments from colleagues or outside specialists who assisted in the treatment and follow-up of the subject.

Any subject who is to be exited from the study due to a serious and/or device-related adverse event should be followed until the outcome is determined prior to being exited from the study.

#### 12. PROTOCOL CHANGES/AMENDMENTS

If the investigator wishes to modify any procedure and/or the design of the study, he or she <u>must contact and obtain consent from JJSV</u> regarding the proposed changes <u>prior to</u> <u>implementation</u>. Any modifications (including additional data collection) require approval by the FDA and all other appropriate regulatory agencies, as well as approval of the governing IRBs prior to implementation.

## 13. ETHICS REVIEW AND PATIENT WELFARE

## 13.1 INSTITUTIONAL REVIEW BOARD (IRB)

It is the responsibility of the investigator to obtain prospective approval of the study protocol, protocol amendments or changes, informed consent forms and other relevant documents (e.g., advertisements) from the IRB. All correspondence with the IRB should be retained in the Investigator Notebook. Copies of IRB submissions and approvals should be forwarded to JJSV.

The investigator is responsible for notifying the IRB of reportable adverse events as well as any other circumstance in which additional procedures outside the protocol were conducted to eliminate apparent hazards to subjects.

## 13.2 INFORMED CONSENT

The current version of the IRB-approved study informed consent form must be signed by each study subject prior to any study-specific examinations being performed. The IRB-approved informed consent form is to be signed and dated by the subject as well as by the person who conducted the informed consent discussion. The signed informed consent form will be maintained by the investigator as a permanent part of the subject's medical records. A copy of the signed and dated form is to be provided to the subject. The investigator will provide JJSV written acknowledgement on the preoperative case report form that a signed agreement of informed consent has been obtained and is in the investigator's possession for each subject. As required by 21CFR812 Part G, the site shall document in the source documents that informed consent was obtained prior to participation in the study for each subject enrolled.

NOTE: The informed consent process also includes obtaining the subject's signature on an Authorization for Use/Disclosure of Health Information for Research Form or

equivalent documentation necessary to comply with applicable privacy laws pertaining to medical treatment in the governing countries.

NOTE: The sponsor will secure appropriate insurance for study subjects prior to study start.

# 14. DOCUMENTATION

## 14.1 SOURCE DOCUMENTS

Source documents must be kept for all study subjects. Source documents may include a subject's medical records, hospital charts, clinic charts, the investigator's subject study files, as well as results of any diagnostic tests or procedures such as topographies or laboratory tests with photographs or instrument printouts.

Each site is expected to adhere to the clinic's own standard documentation requirements for medical charts/clinic notes. For the purposes of this clinical study, the medical charts/clinic notes must also include, at a minimum, the following data that will be considered source data and will be reviewed by JJSV:

- Subject's name and study identification number
- Subject's contact information
- Study protocol number and the Sponsor name (JJSV)
- A statement that informed consent was obtained prior to participation in the study (including the date)
- Evidence of subject eligibility
- Dates of all subject visits and surgeries throughout the duration of the study
- Implant serial number identification (NOTE: This is masked information, and may only be reviewed by unmasked study staff)
- Concurrent medications
- Corrected and uncorrected distance visual acuity (NOTE: M&S electronic data are considered source documentation and are to be retained by the site. A paper copy of the M&S results will be printed and validated by the site)
- Manifest refraction
- Occurrence and status of any operative complications, postoperative medical or lens findings and adverse events
- Occurrence and status of any subject complaints, e.g., ocular/visual symptoms
- The date the subject exited the study, and a notation as to whether the subject completed the study or reason for early exit.

## 14.2 SUBJECT CONFIDENTIALITY

Subjects will be assigned a site/subject number to maintain subject confidentiality. Subject names may possibly be disclosed to JJSV or regulatory agencies during inspection of medical records related to the study, but reasonable precautions will be taken to maintain confidentiality of personal information to the extent permitted by applicable laws and regulations.

# 14.3 CASE REPORT FORM COMPLETION

This study will use an electronic data capture system. All study staff responsible for entering data into the system must complete certification prior to using the system. The investigator is responsible for ensuring that data are properly recorded on each subject's case report forms and related documents. Prior to database lock, the investigator will verify completeness and accuracy of data submitted to the Sponsor.

## 14.4 STUDY SUMMARY

A final investigator's summary (study close-out) will be provided to JJSV and the reviewing IRB after termination or the completion of the study or the investigator's part of the investigation, as directed by JJSV.



#### 15. MONITORING

#### 15.2 ADMINISTRATIVE MONITORING

Administrative monitoring procedures will ensure that study devices, subjects, and forms can be traced and will allow monitoring of investigator progress and compliance.

#### **Device Accountability**

Lens accountability will be maintained at the investigative site by keeping records for all study lenses implanted. Study lens information will be maintained in the subject accountability study binder and will be reviewed during periodic investigative site monitoring visits.



The Sponsor will also review source documents to verify that all required items have been documented in the subject medical charts. Refer to Section 14.1, Source Documents, for a list of items that are required for source documentation. In addition to subject files, study logs will be checked and conformance to lighting levels for visual acuity tests will be verified. Upon study completion, a site visit will be made to each site to monitor the last of the subject data records and finalize any outstanding study issues.

A separate Study Monitoring Plan will be established prior to study start that will define the type and frequency of monitoring visits and frequency of record monitoring.

# 15.3 SAFETY MONITORING

The medical monitor will review results throughout the clinical study as necessary to ensure the continued safety of the device and to ensure that no subjects are exposed to unreasonable risk. The medical monitor will be available to answer all questions from investigators. The medical monitor will review and assess any reports of serious and/or device-related adverse events as well as device deficiencies that could have led to a serious adverse event and discuss these with the reporting investigator(s) as necessary. The medical monitor, as well as any other qualified personnel designated by the Sponsor, shall also review any interim progress reports, as applicable.

# 16. PUBLICATIONS

#### 17. RISK ANALYSIS

POTENTIAL RISKS AND RISK MANAGEMENT RISKS OF THE TECNIS EYHANCE IOL, MODEL DIB00 Please refer to the TECNIS Eyhance IOL Model DIB00 Directions for Use.

## GENERAL RISKS OF CATARACT SURGERY AND IOL IMPLANTATION

There are risks and complications associated with cataract surgery and IOL implantation in general. These can include worsening of vision, hemorrhage, loss of corneal clarity, inflammation, infections, retinal detachment, pupil changes, glaucoma, etc. Complications can result in poor vision, loss of vision or loss of the eye.

## RISK MANAGEMENT

Subjects will be closely monitored throughout the study duration. The occurrence of adverse events and complaints will be assessed at each study visit and reported to the Sponsor according to Section 11.0, Adverse Events and Product Complaints. Additionally, the Sponsor will monitor incoming data following the procedures outlined in Section 15.0, Monitoring. The Medical Monitor will ensure subjects are not exposed to additional risks by monitoring serious adverse events, device-related adverse events, and device-deficiencies that could have led to serious adverse events (Section 15.3, Safety Monitoring).

#### POTENTIAL BENEFITS

The general clinical performance of the TECNIS Eyhance IOL is similar to that of the TECNIS 1-Piece monofocal IOL with regard to distance visual acuity and safety outcomes; however, improvements in intermediate visual acuity from the slightly extended depth of focus may be achieved with the TECNIS Eyhance IOL.

#### **CONCLUSION**

The hazards/risks associated with the TECNIS Eyhance IOL are acceptable and within those of Johnson & Johnson Vision other advanced optic IOLs. The potential clinical benefits of the TECNIS Eyhance IOL outweigh the residual risks when the device is used as intended.

# 18. RECORDS RETENTION

All study-related correspondence, subject records, consent forms, Authorization for Use/Disclosure of Health Information Forms or similar medical treatment privacy law documentation, records of the distribution and use of all study products, and original case report forms should be maintained by the investigator.





#### **19. TERMINATION OF THE INVESTIGATION**

The clinical study will be suspended in the event of high levels of complications and/or adverse events that are unexpected in nature and/or severity and evaluated as to causality relative to the study device. The clinical study may be suspended if the Medical Monitor or the IRB, upon review and evaluation of the clinical data, finds unacceptable clinical performance or the level of single or total complications and/or adverse events unacceptable for continuation of the study.

If causality is shown not to be related to the study device, the study may be resumed in accordance with the IRB.

Additionally, the investigator or the Sponsor may stop a subject's participation at any time. The Sponsor may also stop the study at any time for reasons it determines appropriate. However, no suspension of the study would be made to disadvantage the study subjects. Following suspension of the study for any reason, all study subjects who have already received treatment would continue to be followed through completion of the study visit schedule.

## 20. STATISTICAL METHODS

This section highlights the analyses to be performed for key study endpoints. The key study timeframe for all endpoints will be the 6-month postoperative visit, although data will be reviewed at other time points as well.





#### 20.3 STUDY ENDPOINT

and secondary effectiveness endpoints.

#### **Primary Effectiveness Endpoint**

#### Mean Best-corrected Distance Visual Acuity (BCDVA)

The primary effectiveness endpoint is the mean monocular best-corrected distance visual acuity at 4 m under photopic conditions at 6 months. The non-inferiority comparison between the IOL groups will be conducted using the two-sided 90% confidence interval on the mean BCDVA difference based on a t-distribution. The mean, SD, median, minimum, maximum and two-sided 90% C.I. will be presented by IOL group. Note that lower logMAR value is a better acuity and a higher logMAR value is a poorer acuity. The null hypothesis is that the mean difference between the test and control IOLs is less than or equal to -0.1 logMAR, with the alternative hypothesis being that the mean difference is greater than -0.1 logMAR. A lower bound of the two-sided 90% confidence interval will be used for evaluation based on a two-sample t-test statistic. The success criterion is that the lower limit of the two-sided 90% confidence interval sabove -0.1 logMAR.

 $H_o$ :  $\mu_c - \mu_t ≤ -0.10$  (test is inferior (higher logMAR value) to control)  $H_1$ :  $\mu_c - \mu_t > -0.10$  (test is not inferior (lower logMAR value) to control)

where

 $\mu_t$  = the mean logMAR BCDVA for test group  $\mu_c$  = the mean logMAR BCDVA for control group

#### Secondary Effectiveness Endpoints



#### Mean Distance-corrected Intermediate Visual Acuity at 66 cm (DCVA66)

The DCVA66 (first eyes) will be summarized (n, mean, SD, median, minimum, maximum) with the two-sided 95% CI by IOL group. Comparisons of mean DCVA66 between the test and control groups at 6 months will be performed using a two-sample t-test with a one-sided alpha level of 0.025.

The null hypothesis is that the mean monocular DCVA66 logMAR value for eyes in the test group is worse than or equal to that for the control group. The alternate hypothesis is that the mean monocular DCVA66 logMAR value for the test group is better than that for the control group.

 $H_o: \mu_c - \mu_t \le 0$  (test is worse than (higher LogMAR value) or equal to control)  $H_1: \mu_c - \mu_t > 0$  (test is better (lower LogMAR value) than control)

where

 $\mu_t$  = the mean LogMAR DCVA66 for test group  $\mu_c$  = the mean LogMAR DCVA66 for control group

The success criterion is a statistically significantly better mean DCVA66 (lower LogMAR value) for test lens compared to the control lens group ( $p \le 0.025$ ).

#### Safety Endpoints

## • Secondary Surgical Intervention Related to Optical Properties of the IOL

The counts and percentages of secondary surgical interventions (SSIs) related to optical properties of the lens will be reported by IOL group.

#### • SPE Related Adverse Event vs. ISO SPE Rates

The counts and percentages of SPE-related adverse events will be reported by IOL group. The rate in the test lens group will be compared to the ISO Safety and Performance Endpoints (SPE) rates listed in the ISO 11979-7 using two-sided 90% Clopper Pearson Exact confidence interval with no CIs multiplicity adjustment. Success criteria is that the lower confidence limit of the test group is below the SPE rate.

#### Monocular BCDVA vs. ISO SPE Rate

The counts and percentages of monocular first-eye BCDVA **COUNT OF A Sector COUNT** will be presented by IOL group. The rate in the test lens group will be compared to the ISO SPE rate using two-sided 90% Clopper Pearson Exact confidence interval with no CIs multiplicity adjustment. Success criteria is that upper confidence limit of the test group is higher than the SPE rate.

## Other Endpoints:

The Safety population will be used for the analysis of all other endpoints.

For other visual acuity endpoints, descriptive statistics will be reported for each IOL group and the difference between IOL groups. In addition, the count and proportion of eyes/subjects achieving each line will be reported over time by IOL group for all visual acuity endpoints.



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For manifest refraction, descriptive analysis of refractive sphere, cylinder, spherical equivalent (SEQ) and postoperatively SEQ minus intended SEQ will be reported for each IOL group and the difference between IOL groups for both eyes. In addition, the count and proportion of each eye within certain diopter categories will be tabulated for refractive cylinder, SEQ and postoperatively SEQ minus intended SEQ by IOL groups for both eyes.



# 20.4 SITE POOLABILITY ANALYSIS

A mixed effect model will be used to evaluate site heterogeneity by investigation of site effect and site by group interaction effect for the primary and secondary endpoints.

# 20.5 VISUAL ACUITY CONVENTIONS AND GENERAL STATISTICS

Visual acuity data will be converted to LogMAR values prior to analysis and adjusted for the test distance used if it is not the standard distance for the chart. Descriptive statistics will typically include sample size (N), mean, standard deviation (SD), median, minimum (Min) and maximum (Max) as appropriate for continuous variables. For continuous variables, 2-sample t-test assuming normality will be used. For categorical data, the frequency and proportion will be reported, and Fisher's exact test or Chi-square test will be applied. For ordinal categorical data, the frequency and proportion will be reported with the Wilcoxon Rank-Sum test will be used.

## 20.6 INTERIM REPORTS

No interim study progress reports will be conducted for this study.

#### 20.7 SAMPLE SIZE CALCULATION

Study sample sizes are based on the minimum of 100 evaluable subjects per study group for visual acuity.

# 1. Monocular Best-corrected Distance Visual Acuity (BCDVA) at 4 m

For monocular best-corrected near visual acuity at 4 m (BCDVA), with 100 subjects in each lens group there is over 90% power to conclude non-inferiority in visual acuity between the test and control lens group at two-sided alpha of 0.10 with a non-inferiority margin of 1 line, assuming there is no difference between the IOLs and a standard deviation of 1.2 lines.

# 2. Monocular Distance-corrected Intermediate Visual Acuity at 66 cm (DCVA66)

For monocular distance-corrected intermediate visual acuity at 66 cm, with 100 subjects in each lens group, there is over 90% power at one-sided 0.025 alpha to detect a 0.8-line or greater difference in mean visual acuity between the test lens and control lens groups, assuming a standard deviation of 1.6 lines.





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## APPENDIX A SUMMARY OF PROCEDURES REQUIRED AT EACH VISIT



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#### APPENDIX B EQUIPMENT LIST

The following equipment will be supplied to an investigative site for the duration of the study provided that the site does not already have such equipment available for use. This equipment loan will be documented in the Clinical Trial Agreement, which indicates that the equipment is to be returned to JJSV at the completion of the study.













#### APPENDIX F INSTRUCTIONS FOR DISTANCE VISUAL ACUITY TESTING



Distance visual acuity measurements are to be performed per the visit schedule in **Appendix A**. To test subjects monocularly, occlude the second eye in the phoropter or with an occluder if trial lenses are used.



# APPENDIX G INSTRUCTIONS FOR VISUAL ACUITY TESTING

Visual acuity measurements are to be performed per the visit schedule in **Appendix A**.

# APPENDIX H INSTRUCTIONS FOR VISUAL ACUITY TESTING

Visual acuity measurements	are to be performed per the visit schedule in
Appendix A.	

#### APPENDIX I INSTRUCTIONS FOR VISUAL ACUITY TESTING AT 40 CM



Visual acuity measurements at 40 cm are to be performed per the visit schedule in **Appendix A**.







# APPENDIX L SLIT-LAMP EXAM RATINGS

# A. Ratings of Aqueous Cells and Flare

CELLS		
Grado	Cells in Field (Field is a 1x1 mm slit	
Grade	<u>beam)</u>	
0	<1	
0.5+	1 - 5	
1+	6 - 15	
2+	16 - 25	
3+	26 - 50	
4+	>50	

#### FLARE

Grade	Description	
0	None	
1+	Faint	
2+	Moderate (iris and lens details clear)	
3+	Marked (iris and lens details hazy)	
4+	Intense (fibrin or plastic aqueous)	

#### B. Ratings of Corneal Edema

Corneal edema should be classified according to the haziness of the epithelium, the number of microcysts observed, and the clouding of the stroma.

Amount	Grade	Description
None	0	Normal transparency:
		a. No epithelial or sub-epithelial haziness
		b. No microcysts
		c. No stromal cloudiness
Trace	+1	a. Barely discernible localized epithelial or sub-epithelial
		haziness, and/or
		b. 1 to 20 microcysts, and/or
		c. Barely discernible localized stromal cloudiness
Mild	+2	a. Faint but definite localized or generalized epithelial, sub-
		epithelial or stromal haziness/cloudiness, and/or
		b. 21-50 microcysts

Moderate	+3	a. Significant localized or generalized epithelial, sub-
		epithelial or stromal haziness/cloudiness and/or
		b. 51-100 microcysts
Severe	+4	a. Definite widespread epithelial or stromal cloudiness, giving
		dull glass appearance to cornea or numerous coalescent
		bullae (please note the number and location of bullae),
		and/or
		<li>b. &gt;100 microcysts or bullae, and/or</li>
		c. Numerous striae (please note the number and location of
		striae or folds)

## C. Posterior Capsule Striae Grading Scale

The following five-point grading scale is to be used for rating striae in the posterior capsule:

Amount	Grade	Description	
None	0	None	
Trace	+1	One detectable, barely noticeable striae	
Mild	+2	One or two prominent striae	
Moderate	+3	Three or more prominent striae, but visibility of	
		retina is not impacted	
Severe	+4	Three or more prominent striae affecting	
		visualization of retina	

# D. Posterior Capsule Opacification Grading Scale

Below is the five-point grading scale to be used for PCO determination:

Amount	Grade	Description
None	0	Normal posterior capsule with no area of opacity. Red
		reflex bright.
Trace	+1	Some loss of transparency involving the posterior
		capsule. Red reflex fairly bright
Mild	+2	Mild loss of transparency with cloudiness extending
		through most of the posterior capsule. There may be a
		few Elschnig's pearls in the posterior capsule. Red
		reflex mildly diminished.
Moderate	+3	Moderate loss of transparency with difficulty visualizing
		the retina. There may be multiple Elschnig's pearls in
		the posterior capsule. Red reflex markedly diminished.
Severe	+4	Posterior capsule very opaque with inability to view the
		retina. The posterior capsule may have confluent

	Elschnig's pearls and fibrous scarring.	Red reflex barely
	visible.	

#### E. IOL Glistenings

Use the following scale to grade IOL glistenings, using a slit beam 2.0 mm wide and 10.0 mm long:

Amount	Grade	Description
None	0	No glistenings visible
Rare	+0.5	<10 glistenings visible
Trace	+1	10-19 glistenings visible
Mild	+2	20-29 glistenings visible
Moderate	+3	30-39 glistenings visible
Severe	+4	≥40 glistenings visible


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