

# Centre for Contact Lens Research

School of Optometry & Vision Science,  
University of Waterloo,  
Waterloo, Ontario, Canada.  
N2L 3G1  
Tel: 519-888-4742  
Fax: 519-888-4303  
<http://cclr.uwaterloo.ca>



# Protocol

## A BILATERAL DISPENSING CLINICAL TRIAL OF MYDAY TORIC, 1-DAY ACUVUE MOIST FOR ASTIGMATISM, AND DAILIES AQUACOMFORT PLUS TORIC LENSES (GINGER)

<b>Sponsor Company</b>	CooperVision, Inc.
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This protocol remains the exclusive property of the CCLR until it is commissioned by the sponsors.

	Reviewed and approved, name & signature	Date DD/MMM/YYYY
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### Study Personnel

[REDACTED]	[REDACTED] [REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED]
[REDACTED]	[REDACTED] [REDACTED]

## DOCUMENT CHANGE HISTORY

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1.0		Page 1: Version Number changed to 2.0; Document date changed to 05 Oct, 2016	05 Oct, 2016
1.0		Section 4.3 Ethics Review: Last statement of Paragraph 2 modified in response to ORE comment: The conduct of this study will be given clearance by the Clinical Research Ethics Committee at the University of Waterloo, Canada.	05 Oct, 2016
1.0		Section 4.8.4 - bullet point 3, Statement modified to be same as bullet point 6 in Section 4.8.3: "Lens surface...following:"	05 Oct, 2016
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1.0		Section 9: Added statement " <i>The ORE would also be notified within 24 hours of any device malfunction that may contribute to a Serious Adverse Event.</i> " in response to ORE comment.	05 Oct, 2016
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2.0		Section 20 Appendices: Added Appendix 27	14 Oct, 2016

## Table of contents

1	Introduction.....	8
2	Objectives.....	8
3	Hypothesis.....	8
4	Materials and methods .....	8
4.1	Study design .....	8
4.1.1	Overall design .....	8
4.1.2	Randomization .....	9
4.1.3	Masking.....	9
4.2	Statement of compliance .....	9
4.3	Ethics review .....	10
4.4	Clinical Trial Registration.....	10
4.5	Informed Consent.....	10
4.6	Study population .....	10
4.6.1	Number of participants .....	10
4.6.2	Inclusion and exclusion criteria.....	10
4.6.3	Repeated screenings .....	12
4.7	Study materials .....	12
4.7.1	Lenses .....	12
4.7.2	Contact Lens care system .....	13
4.7.3	Rewetting drops .....	13
4.7.4	Contact lens dispensing .....	13
4.7.5	Ordering consumables .....	13
4.7.6	Disposing of consumables .....	13
4.7.7	Product accountability .....	14
4.8	Scheduled and unscheduled visits .....	14
4.8.1	Study visits.....	14

4.8.2	Screening.....	15
4.8.3	Dispensing lens pair #1 .....	16
4.8.4	1-week follow-up of pair #1 & Dispensing pair #2 .....	17
4.8.5	1-week follow-up of pair #2 & Dispensing pair #3 .....	19
4.8.6	1-week follow-up of pair #3 & Study exit.....	20
4.8.7	Unscheduled visits .....	22
4.9	Summary of Study procedures .....	22
4.10	Recording Findings of Interest.....	23
5	Monitoring protocol adherence .....	23
6	Potential Risks and Benefits to Human participants.....	23
7	Adverse events.....	24
7.1	Adverse Event Definitions .....	24
7.2	Normal or adaptive symptoms.....	26
7.3	Procedures for Adverse Events .....	27
7.4	Reporting Adverse Events.....	27
8	Discontinuation from the study.....	27
9	Device Malfunctions.....	29
10	Study completion and remuneration .....	29
11	Statistical analysis and data management .....	29
11.1	Sample size calculation .....	29
11.2	Statistical analysis .....	30
12	Data Quality Assurance .....	30
12.1	Study monitoring.....	31
12.2	Sponsor Responsibilities.....	31
12.3	Investigator Responsibilities .....	31
12.4	Record keeping .....	32
12.5	Retention of study records and data .....	32

12.6	Data entry / Data management.....	32
13	Protocol training.....	33
14	Study monitoring.....	33
15	Study management.....	33
15.1	Protocol deviations .....	33
15.1.1	Major protocol deviations .....	33
15.1.2	Minor protocol deviations .....	34
15.1.3	Reporting and documenting protocol deviations .....	34
15.2	Premature termination of the study .....	34
15.3	Study participant records .....	34
15.4	Retention of study records and data .....	35
16	Confidentiality .....	35
17	Publication.....	35
18	Study Costs .....	35
19	Report.....	35
20	Appendices.....	36

### **Confidentiality**

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### **Disclaimer**

This study will be conducted for research purposes only and is not intended to be used to support safety and efficacy in a regulatory submission.

## 1 INTRODUCTION

CooperVision is evaluating the clinical performance of the MyDay toric contact lens in comparison with 1-Day Acuvue Moist for Astigmatism, and Dailies AquaComfort Plus Toric lenses, when each lens is worn on a daily disposable wear basis over one (1) week in a randomized bilateral, cross-over, dispensing study.

## 2 OBJECTIVES

The objective of the study is to evaluate the performance of MyDay toric test lens when worn on a daily disposable wear modality over 1 week.

The primary outcome variables are:

- Comfort and lens preference with respect to comfort (subjective ratings)
- Dryness and lens preference with respect to dryness (subjective ratings)
- Visual quality and lens preference with respect to visual quality (subjective ratings)

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## 3 HYPOTHESIS

The study hypothesis is that the MyDay toric test lens (MD-T) will perform as well or better clinically than the two control lenses: 1-Day Acuvue Moist for Astigmatism (1-DAM-T) and Dailies AquaComfort Plus Toric (DACP-T).

## 4 MATERIALS AND METHODS

### 4.1 STUDY DESIGN

#### 4.1.1 OVERALL DESIGN

This study is a prospective, double-masked (investigator and participant), bilateral, randomized, cross-over dispensing study comparing the MD-T test lens against the 1-DAM-T and DACP-T control lenses. Each participant will be randomized to wear either the test or one of the controls with similar/comparable lens parameters optimized for vision. Both test and control lenses will be



used in their approved daily disposable lens wear modality for one (1) week. It is anticipated that this study will involve up to 4 scheduled visits:

Visit 1: Baseline includes screening and dispense of lens pair #1,

Visit 2: 1-week follow-up visit of lens pair #1 and dispense of lens pair #2,

Visit 3: 1-week follow-up visit of lens pair #2 and dispense of lens pair #3,

Visit 4: 1-week follow-up visit of lens pair #3 and study exit.

The study design is shown in Figure 1.

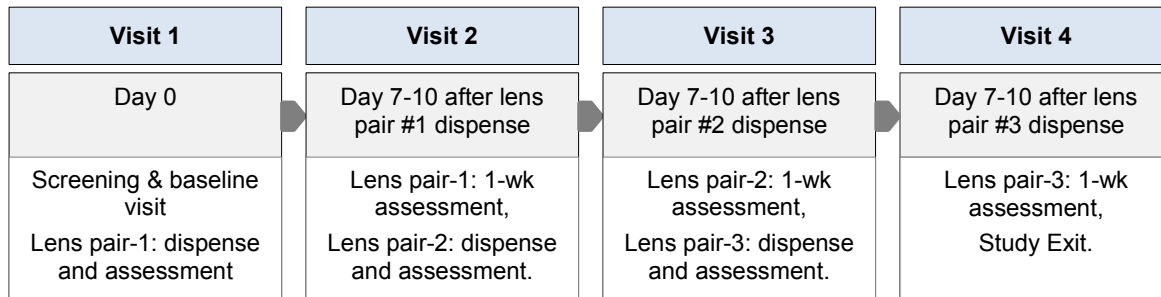


Figure 1: Study Design

#### 4.1.2 RANDOMIZATION

A randomization schedule will be generated using a web-based program: ([www.randomization.com](http://www.randomization.com)). An example of the format generated is given in Appendix 24. The final study randomization schedule will be generated by the CCLR Data Management Team, and provided to the research assistants for use during the study. Study investigators will remain masked to the randomization schedule until the study is completed and the database is locked.

#### 4.1.3 MASKING

Participants will be masked as to lens type and lens assignment (control lenses vs. test lens). Lenses dispensed to participants may be either over-labelled or have part of the label obscured, however the safety information on the outer package label of the contact lens, shall be clearly visible. Investigators will be masked as much as possible however it may not be possible to fully mask the investigators, because identifying lens markings may be visible during the biomicroscopy examination.

### 4.2 STATEMENT OF COMPLIANCE

This protocol document has been developed in accordance with the following:

- ISO 14155 Clinical Investigation of Medical Devices for Human Subjects, Parts 1 & 2
- ICH Harmonized Tripartite Guideline for Good Clinical Practice
- The University of Waterloo's Guidelines for Research with Human Participants
- Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, 2nd Edition. <http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/>
- Declaration of Helsinki

### 4.3 ETHICS REVIEW

This study will be conducted in accordance with Institutional Review Board regulations (U.S. 21CFR Part 56.103) or applicable IEC regulations. Copies of all IRB/IEC correspondence with the investigator/sponsor will be kept on file.

This protocol will be submitted to and reviewed through the Office of Research Ethics (ORE) at the University of Waterloo, Canada. Notification of ethics clearance of the application is required prior to the commencement of the study. The conduct of this study will be given clearance by the Clinical Research Ethics Committee at the University of Waterloo, Canada.

### 4.4 CLINICAL TRIAL REGISTRATION

This study will be registered in the clinical trials registry (<https://clinicaltrials.gov/>) by the study sponsor.

### 4.5 INFORMED CONSENT

Informed consent shall be obtained in writing from all participants prior to their enrolment in the study (Appendix 1), and before any procedure specific to the clinical investigation is carried out.

### 4.6 STUDY POPULATION

#### 4.6.1 NUMBER OF PARTICIPANTS

Up to 52 participants will be dispensed / randomized with study products, with a target of 45 completing the study. Participants will be recruited using CCLR records and advertising approved by the UW Office of Research Ethics (Appendices 2, 3a, and 3b). Each participant will be given a unique ID number. Additionally, all participants must meet the study inclusion and none of the exclusion criteria listed below.

#### 4.6.2 INCLUSION AND EXCLUSION CRITERIA

A person is eligible for inclusion in the study if he/she:

1. Is at least 17 years of age and has full legal capacity to volunteer;
2. Has had a self-reported oculo-visual examination in the last two years.
3. Has read and signed an information consent letter;
4. Is willing and able to follow instructions and maintain the appointment schedule;
5. Is an adapted soft contact lens wearer;
6. Is willing to wear contact lens in both eyes for the duration of the study;
7. Has a minimum spectacle astigmatism of - 0.75;
8. Can be fit with the three study contact lens types in the powers available;
9. Has a visual acuity of 20/30 or better in each eye with habitual correction, or 20/20 best corrected vision (for binocular distance acuity);
10. Can achieve a distance visual acuity of 20/30 (0.18 logMar) or better in each eye with the study contact lenses.
11. Has clear corneas and no active\* ocular disease;

A person will be excluded from the study if he/she:

1. Is participating in any concurrent clinical trial;
2. Has any known active\* ocular disease and/or infection;
3. Has a systemic condition that in the opinion of the investigator may affect a study outcome variable;
4. Is using any systemic or topical medications that in the opinion of the investigator may affect a study outcome variable;
5. Has known sensitivity to fluorescein dye or products to be used in the study;
6. Appears to have any active\* ocular pathology, ocular anomaly or severe insufficiency of lacrimal secretion (severe dry eye) that would affect the wearing of contact lenses;
7. Is pregnant, lactating or planning a pregnancy at the time of enrolment (by verbal confirmation at the screening visit);
8. Is aphakic;
9. Has undergone refractive error surgery.

\* For the purposes of this study, active ocular disease is defined as infection or inflammation which requires therapeutic treatment. Mild (i.e. not considered clinically relevant) lid

abnormalities (blepharitis, meibomian gland dysfunction, papillae), corneal and conjunctival staining and dry eye are not considered active ocular disease. Neovascularization and corneal scars are the result of previous hypoxia, infection or inflammation and are therefore not active.

### 4.6.3 REPEATED SCREENINGS

In some circumstances a repeated screening may need to be scheduled. Examples include, but are not limited to:

1. Incomplete information available at time of screening to determine eligibility (e.g. current lens brands worn, history from current eye care practitioner etc.)
2. Study procedures unable to be completed in time scheduled for visit;
3. Study products not available at the time of the screening visit;
4. A transient health condition which may affect the eye(s) (e.g. a common cold, active allergies, fatigue etc.)
5. The short term use of medications (e.g. antibiotics, antihistamines etc.)
6. Reassessment of baseline ocular conditions (e.g. corneal and/or conjunctival staining, scars etc.)

The maximum total number of screenings permitted will be 3.

## 4.7 STUDY MATERIALS

### 4.7.1 LENSES

Details of study lenses are show in Table 1.

**Table 1: Lens parameters to be used in this study**

	<b>MyDay Toric</b>	<b>1-DAY ACUVUE MOIST for ASTIGMATISM</b>	<b>DAILIES AquaComfort Plus Toric</b>
Manufacturer	CooperVision Inc.	Johnson & Johnson Vision Care	Alcon Canada Inc.
Material	stenfilcon A	etafilcon A	nelfilcon A
Health Canada license #	91502	2519	92503
EWC (%)	54%	58%	69%
Dk/t (-3.00D)	100.0	23.7	26
BOZR (mm)	8.4	8.5	8.80
Diameter (mm)	14.2	14.5	14.4

	<b>MyDay Toric</b>	<b>1-DAY ACUVUE MOIST for ASTIGMATISM</b>	<b>DAILIES AquaComfort Plus Toric</b>
Sphere power (D)	0.00 to -6.00 (0.25 steps) -6.50 to -8.00 (0.50 steps)	0.00 to -6.00 (0.25) -6.50 to -8.00 (0.50)	0.00 D to -6.00 (0.25) -6.50 to -8.00 (0.50)
Cylindrical Power (D)	-0.75, 1.25, -1.75	-0.75, 1.25, -1.75	-0.75, 1.25, -1.75
Axis (degree)	10°, 90°, 170°, 180°	10°, 90°, 170°, 180°	10°, 90°, 170°, 180°

#### 4.7.2 CONTACT LENS CARE SYSTEM

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No contact lens care system is required for this study as all lenses are daily disposable lenses to be worn for a single day only and then discarded. New lenses will be worn each day.

Lenses worn for the scheduled visits at the 1 week follow-up visit will be collected by and stored in saline.

#### 4.7.3 REWETTING DROPS

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Participants will not be encouraged to use rewetting drops; however, those who habitually used rewetting drops will be allowed to continue using their normal drops. Rewetting drop use will be recorded at each visit. In the event of an adverse event, rewetting drops may be given to participants.

#### 4.7.4 CONTACT LENS DISPENSING

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The lenses will be provided to the participant after being transferred, complete with blister pack solution, to a contact lens cup; this will maintain participant masking and aid investigator masking. The use of saline for rinsing the contact lens prior to insertion is permitted if necessary. Saline will not be dispensed during the study.

#### 4.7.5 ORDERING CONSUMABLES

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The MyDay Toric study lenses will be provided by the Sponsor. The control lenses will be purchased by the CCLR for use in the study.

The investigator must maintain an accurate accounting of the study product during the study. A detailed inventory must be completed for study supplies.

#### 4.7.6 DISPOSING OF CONSUMABLES

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This study provides consumables (lenses) to participants for use during the study. Participants will be instructed to dispose of worn lenses (both test and control lenses) daily, but retain the

foils of all used lens packs and return them together with any unworn lenses, at their next study visit. Lenses worn for the scheduled visits will be collected from the participants and they will be disposed according to UW guidelines. Worn lenses associated with adverse events may be retained either at the CCLR or returned to CooperVision. Typical analysis in these cases relates to inspection for damage and/ or bacterial contamination. Upon completion of the study, all lenses (both used and unused) will be destroyed, unless otherwise directed by the study Sponsor.

#### 4.7.7 PRODUCT ACCOUNTABILITY

Accountability logs will be kept to include the number of lenses received, dispensed, unused, and returned to vendor (where relevant). All products dispensed to participants will be recorded in the participant’s accountability log.

### 4.8 SCHEDULED AND UNSCHEDULED VISITS

This study has a total of 4 scheduled study visits, including:

- Visit 1: Baseline includes screening and dispense of lens pair #1,
- Visit 2: 1-week follow-up visit of lens pair #1 after 7-10 days and dispense of lens pair #2;
- Visit 3: 1-week follow-up visit of lens pair #2 after 7-10 days and dispense of lens pair #3;
- Visit 4: 1-week follow-up visit of lens pair #3 after 7-10 days and study exit.

A scheduled follow-up visit may only take place when the participant attends wearing the study lenses. If this is not the case and the participant is not experiencing any problems with the lenses, the appointment will be rescheduled, ideally within the visit window.

Visits that fall outside of the specified visit windows will be designated as protocol deviations and at the end of the study the data collected will be assessed for its suitability to be included in the analysis population.

#### 4.8.1 STUDY VISITS

The summary of visit codes is shown in Table 2.

**Table 2: Summary of visit codes**

Visit #	Visit code	Visits
Visit 1	V1 (V1-R1, & V1-R2 for re-screening if applicable)	Screening,
	V1-1	Baseline & dispensing lens pair #1

Visit 2	V2	1-week follow-up of pair #1 (day 7 -10 from dispense of pair #1) & dispensing pair #2
Visit 3	V3	1-week follow-up of pair #2 (day 7 -10 from dispense of pair #2) & dispensing pair #3
Visit 4	V4	1-week follow-up of pair #3 ( day 7 -10 from dispense of pair #3) & Study exit

## 4.8.2 SCREENING

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All participants who sign the informed consent letter will be assigned a study ID number. The investigator will determine participant eligibility using the inclusion and exclusion criteria. Ineligible participants will be discontinued from the study. The procedures to be performed are outlined below:

- The participant is expected to attend the screening / baseline visit not wearing their habitual contact lens products.
- The participant will be required to read and sign an Informed Consent Form prior to enrollment. When the participant has signed the consent form, the participant will be considered to be enrolled in to the study.
- Participant demographics and medical history (age, sex, medical conditions, medications, allergies)
- Contact lens history (own lens information, and wear time)
- Baseline visual acuity with spectacles or spectacle refraction.
- Auto refraction/auto keratometry: Horizontal and Vertical K readings (D)
- Sphero-cylindrical refraction (D), monocular & binocular distance visual acuity (high contrast) (logMAR)
- Palpebral aperture size
- HVID measurements
- Slit lamp biomicroscopy will be assessed according to the approved study biomicroscopy CRF (Appendix 9).
- The investigator will confirm that the participant meets the eligibility specifications set out in the inclusion criteria and exclusion criteria and is eligible to continue in the study.
- Trial fitting of all three study lenses will be done:
  - The contact lens power will be chosen based on the vertexed spectacle refraction. For each eye, the test and control lenses will be optimized for vision, with similar/comparable lens parameters.

- The contact lenses will be provided to participants in a manner which does not unmask the participant, as described in Section 4.7.4.
- The lenses will be inserted by the participant.
- Monocular over refraction will be done to determine if a different power is needed. If any changes are made, the above procedures will be repeated.
- Monocular and binocular logMAR visual acuity will be recorded with high contrast letters under high room illumination (300-600 lux), and the final lens power will be recorded.

#### 4.8.3 DISPENSING LENS PAIR #1

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The participant will be assigned a randomization ID and the first pair (lens pair #1) of contact lenses (either test or one of the control lenses) will be selected according to the randomization table.

- Lens pair #1 will be provided to participants in a manner which does not unmask the participant, as described in Section 4.7.4.
- The lenses will be inserted by the participant.
- The contact lenses will be allowed to settle for 10 minutes.
- The participant will be asked to give subjective binocular ratings for:
  - Comfort at insertion (0-10 scale)
  - Ease of insertion (0-10 scale)
  - Speed of settling (0-10 scale)
  - Visual quality (0-10 scale)
  - Vision stability (0-10 scale)
  - Overall satisfaction (0-10 scale)
- Monocular and binocular logMAR visual acuity will be recorded with high contrast letters under high (300-600 lux) and low (1-5 lux) room illumination.
- Lens surface and fit will then be assessed and graded according to the CVI grading scales for the following:
  - Lens wettability (0-4 scale)
  - Centration (mm)
  - Post-blink movement (mm)
  - Toric mark visibility



- Lens orientation (3 measurements per lens)
  - Overall stability of toric mark position
  - Overall lens fit acceptance (0-4 scale)
- The participant will be given a set of daily subjective questionnaires (Appendix 12) to be completed at home on days 1, 3 and 6 starting the morning after the dispensing visit (day 0), to reflect their lens wear experience at the time of rating. Participant will be given careful explanation of how and when to complete them. Questions will include:
    - Time of lens insertion and removal
    - Comfort after insertion (i.e. after lens settling), after 4, 8, and 12 hours, and just before lens removal (0-10 scale)
    - Dryness after 4, 8, and 12 hours, and just before lens removal (0-10 scale)
    - Visual quality/clarity after insertion (i.e. after lens settling), after 4, 8, and 12 hours, and just before lens removal (0-10 scale)
    - Vision stability after insertion (i.e. after lens settling), after 4, 8, and 12 hours, and just before lens removal (0-10 scale)

The participant will be asked to wear the study lenses for at least 12 hours per day and 6 days per week.

- Participant will be provided with sufficient contact lens supply.
- The participant will be discharged and reminded to return for the 1-week visit of lens pair #1 and to bring back all lens package foils.

#### 4.8.4 1-WEEK FOLLOW-UP OF PAIR #1 & DISPENSING PAIR #2

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Participants will be asked to wear lenses for at least 4 hours prior to the visit appointment. Participants who attend without lenses in-situ (wearing lenses) for at least four hours will be rescheduled.

- The participant will be asked to score their subjective responses by reflecting on a typical day during the previous week of lens wear, as detailed in the subjective ratings form (Appendix 11) and includes the following:
  - Wear time at this visit (hours)
  - Wear time per day during previous 1 week (hours)
  - Comfortable wear time per day during previous 1 week (hours)
  - Overall comfort (0-10 scale)

- Overall dryness (0-10 scale)
  - Ease of insertion (0-10 scale)
  - Ease of removal (0-10 scale)
  - Overall visual quality/clarity (0-10 scale)
  - Overall visual stability (0-10 scale)
  - Overall satisfaction (0-10 scale)
  - Comments by participants
- Monocular and binocular logMAR visual acuity will be recorded with high contrast letters under high and low room illumination.
  - Lens surface and fit will then be assessed and graded according to the CVI grading scales for the following:
    - Lens wettability (0-4 scale)
    - Centration (mm)
    - Post-blink movement (mm)
    - Toric mark visibility
    - Lens orientation (3 measurements per lens)
    - Overall stability of toric mark position
    - Overall lens fit acceptance (0-4 scale)
  - The lenses will be removed and retained. The disposal procedures are detailed in Section 4.7.6.
  - Slit lamp biomicroscopy will be assessed according to the CVI approved study biomicroscopy CRF.
  - There will be a 10 minute wash-out before insertion of lens pair #2.
  - Lens pair #2 will be provided to participants in a manner which does not unmask the participant, as described in Section 4.7.4.
  - The lenses will be inserted by the participant.
  - Procedures of fit and assessment will be repeated as detailed in the dispensing visit, section 4.8.3.
  - The participant will be discharged and reminded to return for the 1-week visit of lens pair #2 and to bring back all lens package foils.

#### 4.8.5 1-WEEK FOLLOW-UP OF PAIR #2 & DISPENSING PAIR #3

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Participants will be asked to wear lenses for at least 4 hours prior to the visit appointment. Participants who attend without lenses in-situ (wearing lenses) for at least four hours will be rescheduled.

- The participant will be asked to score their subjective responses by reflecting on a typical day during the previous week of lens wear, as detailed in the subjective ratings form (Appendix 11) and includes the following:
  - Wear time at this visit (hours)
  - Wear time per day during previous 1 week (hours)
  - Comfortable wear time per day during previous 1 week (hours)
  - Overall comfort (0-10 scale)
  - Overall dryness (0-10 scale)
  - Ease of insertion (0-10 scale)
  - Ease of removal (0-10 scale)
  - Overall visual quality/clarity (0-10 scale)
  - Overall visual stability (0-10 scale)
  - Overall satisfaction (0-10 scale)
  - Comments by participants
- Monocular and binocular logMAR visual acuity will be recorded with high contrast letters under high and low room illumination.
- Lens surface and fit will then be assessed and graded according to the CVI grading scales for the following:
  - Lens wettability (0-4 scale)
  - Centration (mm)
  - Post-blink movement (mm)
  - Toric mark visibility
  - Lens orientation (3 measurements per lens)
  - Overall stability of toric mark position

- Overall lens fit acceptance (0-4 scale)
- The lenses will be removed and retained. The disposal procedures are detailed in Section 4.7.6.
- Slit lamp biomicroscopy will be assessed according to the CVI approved study biomicroscopy CRF.
- There will be a 10 minute wash-out before insertion of lens pair #3.
- Lens pair #3 will be provided to participants in a manner which does not unmask the participant, as described in Section 4.7.4.
- The lenses will be inserted by the participant.
- Procedures of fit and assessment will be repeated as detailed in the baseline and dispensing visit, section 4.8.3.
- The participant will be discharged and reminded to return for the 1-week visit of lens pair #3 and to bring back all lens package foils.

#### 4.8.6 1-WEEK FOLLOW-UP OF PAIR #3 & STUDY EXIT

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Participants will be asked to wear lenses for at least 4 hours prior to the visit appointment.

Participants who attend without lenses in-situ (wearing lenses) for at least four hours will be rescheduled.

- The participant will be asked to score their subjective responses by reflecting on a typical day during the previous week of lens wear, as detailed in the subjective ratings form (Appendix 11) and includes the following:
  - Wear time at this visit (hours)
  - Wear time per day during previous 1 week (hours)
  - Comfortable wear time per day during previous 1 week (hours)
  - Overall comfort (0-10 scale)
  - Overall dryness (0-10 scale)
  - Ease of insertion (0-10 scale)
  - Ease of removal (0-10 scale)
  - Overall visual quality/clarity (0-10 scale)
  - Overall visual stability (0-10 scale)

- Overall satisfaction (0-10 scale)
- Comments by participants
- Participants will be asked their preference between lens pair #1, lens pair #2, and lens pair #3, for a number of considerations:
  - Overall comfort preference
  - Visual quality preference
  - Vision stability preference
  - Overall handling (lens insertion and removal) preference
  - Overall lens preference
- Monocular and binocular logMAR visual acuity will be recorded with high contrast letters under high and low room illumination.
- Lens surface and fit will then be assessed and graded according to the CVI grading scales for the following:
  - Lens wettability (0-4 scale)
  - Centration (mm)
  - Post-blink movement (mm)
  - Toric mark visibility
  - Lens orientation (3 measurements per lens)
  - Overall stability of toric mark position
  - Overall lens fit acceptance (0-4 scale)
- The lenses will be removed and retained. The disposal procedures are detailed in Section 4.7.6.
- Slit lamp biomicroscopy will be assessed according to the CVI approved study biomicroscopy CRF.
- Exit visual acuity will be performed.
- The study exit form will be completed when a participant exits the study. This will occur either at study completion, or if the participant is discontinued from the study at another time. A study exit form must be completed for all participants who have taken a study ID

number. If in the opinion of the investigator post-study follow-up visits are required, the exit form will be completed after the last follow-up visit.

- The participant will be discharged and will sign the study completion forms and receive remuneration for participating in the study.

#### 4.8.7 UNSCHEDULED VISITS

An unscheduled visit is defined as an interim visit requested by the participant or investigator due to an unanticipated problem. Data recorded at these visits will be entered into the database. Only relevant and applicable unscheduled visit information will be included in the final report as deemed necessary by the lead investigator.

### 4.9 SUMMARY OF STUDY PROCEDURES

Table 3 summarizes the visits and procedures for the study.

**Table 3: Summary of visits and procedures for the study.**

	<b>Visit 1</b> <i>Screening / Baseline &amp; dispensing lens pair #1</i>	<b>Visit 2</b> <i>(+3 days of scheduled visit) 1-wk follow-up of lens pair #1 / Dispensing lens pair #2</i>	<b>Visit 3</b> <i>(+3 days of scheduled visit) 1-wk follow-up of lens pair #2 / Dispensing lens pair #3</i>	<b>Visit 4</b> <i>(+3 days of scheduled visit) 1-wk follow-up of lens pair #3 / and Exit</i>
Informed consent (screening)	√			
Confirmation of inclusion/exclusion criteria	√			
Ocular & medical history	√			
Demographics	√			
VA with spectacles or refraction	√	√	√	√
Auto-refraction & keratometry	√			
Sphero-cylindrical refraction	√			
Best corrected (sphero-cyl) VA monocular and binocular	√			
HVID, palpebral aperture size	√			
Biomicroscopy	√	√	√	√
Trial fitting of study lenses	√			
Wearing time on visit day		√	√	√
Symptoms & problems enquiry	√	√	√	√
Dispense new lenses	√	√	√	
Participant ratings completed	√	√	√	√
Take-home participant	√	√	√	

	<b>Visit 1</b> <i>Screening / Baseline &amp; dispensing lens pair #1</i>	<b>Visit 2</b> <i>(+3 days of scheduled visit) 1-wk follow-up of lens pair #1 / Dispensing lens pair #2</i>	<b>Visit 3</b> <i>(+3 days of scheduled visit) 1-wk follow-up of lens pair #2 / Dispensing lens pair #3</i>	<b>Visit 4</b> <i>(+3 days of scheduled visit) 1-wk follow-up of lens pair #3 / and Exit</i>
ratings provided				
Surface assessments	√	√	√	√
Lens fit assessments	√	√	√	√
Over Refraction (dispense)	√	√	√	
VA with contact lenses	√	√	√	√
Assessment of adverse events	√	√	√	√
Complete take home questionnaires	On days 1, 3, and 6.			
Return questionnaires		√	√	√
Exit Study				√

#### 4.10 RECORDING FINDINGS OF INTEREST

The following variables may be recorded using a digital slit lamp system (video and still images):

- Toric stability or lens fits not considered to be clinically acceptable or associated with symptoms
- Relevant corneal and conjunctival staining
- Abnormalities of lens performance (e.g. poor fit) or appearance (e.g. manufacturing defect, non-wetting spots/surface issues)
- Additional videos (e.g. wettability, pre-lens tear film appearance, lens movement, etc.) may also be recorded in order to better understand on-eye lens performance and to help communicate this information to the sponsor.

### 5 MONITORING PROTOCOL ADHERENCE

Adherence to study visit windows, lens wearing schedule, and time windows around other data collection points (i.e. subjective ratings) will be monitored internally by the CCLR. Deviations from the windows described in the protocol will be reported in the weekly reports and study report.

### 6 POTENTIAL RISKS AND BENEFITS TO HUMAN PARTICIPANTS

This is a minimal risk study because of the use of marketed products and standard optometric assessments.

Contact lenses in this study will be worn on a daily disposable wear basis. Complications that may occur during the wearing of contact lenses include discomfort, dryness, aching or itching eyes, excessive tearing, discharge, hyperemia and variable or blurred vision. More serious risks may include photophobia, iritis, corneal edema or eye infection. Although contact lens-related infections are very infrequent, the possibility does exist. The incidence of infection due to day-wear soft lenses is 0.035%. Almost always an infection will occur only in one eye. This risk is assumed by 35-million Americans who currently wear contact lenses.

When contact lenses are worn on a daily wear basis there is a small risk of an adverse event compared to not wearing contact lenses. When contact lenses are worn on an extended wear basis, there is a significantly increased risk of an adverse reaction compared with wearing contact lenses on a daily wear basis.

Additionally, it is possible that participants may experience temporary discomfort associated with the study procedures /products/devices/eye drops (sodium fluorescein) including: burning and stinging, blurred vision, sandiness or grittiness, light sensitivity, dryness, itching, crusty eyes and foreign body sensation.

Routine clinical procedures including auto-refraction, auto-keratometry, visual acuity, anterior ocular health assessment, and contact lens fitting will be used. In addition, high magnification imaging (including video and still images) of the lens fit may be made using 35 mm or digital cameras.

There might not be direct benefits to the participants in this study. However, participation in a study may contribute to scientific research information that may be used in the development of new contact lens products. In addition, participants will receive an examination of the front part of their eyes and may have the opportunity to try a different type of soft contact lenses at no cost to them.

This study may help the study sponsor to better understand the performance of the products being used in this study.

## **7 ADVERSE EVENTS**

### **7.1 ADVERSE EVENT DEFINITIONS**

An 'adverse event' refers to any undesirable clinical occurrence in a participant, whether it is considered to be device-related or not. Adverse events (AE) may be classified as 'unanticipated adverse device effects,' 'serious adverse events,' 'significant adverse events,' or 'non-significant adverse events,' as defined below.



A number of conditions may result in temporary discontinuation until resolution. These include corneal infiltrates, corneal staining, limbal injection, bulbar injection or bulbar and tarsal conjunctival abnormalities.

See CCLR SOP012\_v01 for a description of adverse events, including management and reporting (Appendix 27).

Classification	Definition
Serious Adverse Event	Those events that are life-threatening, or result in permanent impairment of a body function, or permanent damage to a body structure or necessitate medical (therapeutic) or surgical intervention to preclude permanent impairment of a body function or permanent damage to a body structure.
Significant Adverse Event	Those non-serious adverse events that occur with contact lens usage that are not sight-threatening but are usually symptomatic and may warrant therapeutic management and /or temporary or permanent discontinuation of contact lens wear.
Non-Significant Adverse Events	Those less severe non-serious adverse events that occur with contact lens usage that are not sight-threatening, may or may not be symptomatic and may warrant palliative management, such as ocular lubricants or temporary interruption of contact lens wear.
Unanticipated Adverse Device Effect	Adverse events in a clinical trial that were not previously identified in the protocol in terms of nature, severity, or degree of incidence. An Unanticipated Serious Adverse Device Effect is an unanticipated adverse event that is serious in nature and caused by or associated with the device and is considered reportable.

AE classification, coding (for reporting to the sponsor) and examples are provided in the following table of Contact Lens Adverse Event Classification and Reporting table:

Code	Condition	Reporting
Serious Adverse Events		
01	Presumed infectious keratitis or infectious corneal ulcer	Notify sponsor as soon as possible, <b>within 24 hours</b> ; ORE reporting as per requirements
02	Permanent loss of $\geq 2$ lines of best spectacle corrected visual acuity (BSCVA)	
03	Corneal injury that results in permanent opacification within central cornea (6mm)	
04	Uveitis or Iritis (e.g. presence of anterior segment inflammation as described in ISO 11980, Annex B)	
05	Endophthalmitis	
06	Hyphema	

07	Hypopyon	
08	Neovascularization within the central 6mm of cornea	
00	Other serious event	
Significant Adverse Events		
11	Peripheral (outside central 6mm), non-progressive, non-infectious ulcer	Notify sponsor as soon as possible, <b>within 5 working days</b> ; ORE reporting as per requirements
12	Symptomatic corneal infiltrative event	
13	Superior epithelial arcuate lesions (SEALs) involving epithelial split	
14	Corneal staining $\geq$ dense coalescent staining up to 2mm in diameter (e.g. moderate, ISO 11980 grade 3)	
15	Corneal neovascularization $\geq$ 1.0mm vessel penetration (e.g. $\geq$ ISO 111980 Grade 2), if 2 grade change from baseline	
16	Any temporary loss of $\geq$ 2 lines BSCVA for $\geq$ 2wks	
17	Any sign and/or symptom for which participant is administered therapeutic treatment or which necessitates discontinuation of lens wear for $\geq$ 2 weeks	
10	Other significant event	
Non-significant Adverse Events		
21	Conjunctivitis (bacterial, viral or allergic)	Notify sponsor as soon as possible, <b>within 5 working days</b> ; ORE reporting as per requirements
22	Papillary conjunctivitis if $\geq$ mild scattered papillae/follicles approximately 1mm in diameter (e.g. ISO 11890 Grade 2), if 2 grade change from baseline	
23	Asymptomatic corneal infiltrative events	
24	Any sign and/or symptom for which temporary lens discontinuation for $>$ 1 day is recommended (if not already classified)	
20	Other sign and/or symptom warranting classification as a non-significant adverse event	

## 7.2 NORMAL OR ADAPTIVE SYMPTOMS

Transient symptoms such as end-of-day dryness, lens awareness, itching or burning or other discomfort may occur with contact lens wear and may occasionally reduce wearing time. These are not reported as adverse events unless in the investigator's opinion they are unexpected in nature, severe or have a high rate of occurrence.

### 7.3 PROCEDURES FOR ADVERSE EVENTS

Treatment of an adverse event will depend on its nature and severity. Based on the clinical judgment of the investigator the participant may be referred to an ophthalmologist for treatment. The investigator will attempt to determine whether the reaction is related to the test device or a result of other factors. An adverse event form (Appendix 18) will be completed for each adverse event. If both eyes are involved, a separate adverse event form will be completed *for each eye*. Whenever possible, the adverse event will be photo-documented.

Expenses incurred for medical treatment as part of study participation will be paid by the sponsor (bills and prescription receipts kept). The participant must be followed until resolution or no further change is anticipated and/or referred for further care with the appropriate health care professional and/or recorded as being under appropriate health care as per investigator's discretion. A written report will be completed indicating the subsequent treatment and resolution of the condition.

### 7.4 REPORTING ADVERSE EVENTS

All potential Serious and Unanticipated Adverse Device Effects that are related or possibly related to participant's participation will be reported to the Principal Investigator and the sponsor within 24 hours of the investigator becoming aware of the event. The Investigator will report Serious Adverse Events to the ORE within 24 hours of the investigator becoming aware of the event and as per ORE requirements (by fax, mail/delivery, phone, or email). All fatal or life threatening events will be reported immediately to the ORE.

Significant and Non-Significant Adverse Events will be reported to the sponsor as soon as possible, but no later than 5 working days after the occurrence. The Investigator will report the event to the ORE as per ORE requirements (by fax, mail/delivery, phone, or email).

Sponsor contact details are:

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
	[REDACTED]

## 8 DISCONTINUATION FROM THE STUDY

Participants discontinued from a study will be reimbursed [REDACTED] [REDACTED] (including the initial screening visit). A participant's study participation may be discontinued at any time if, in the opinion of the sponsor or the investigator it is in the

best interest of the participant. All discontinuations will be fully documented on the appropriate study forms and the Discontinuation Form will be completed. The following is a list of possible reasons for discontinuation from the study:

- Screening failure: Participants will be discontinued if they do not meet the inclusion and exclusion criteria outlined in section 4.6.2.
- Unacceptable performance with products to be used in study: Participants may be discontinued if they are unable to achieve acceptable comfort and /or vision with the study products.
- Positive slit lamp finding: Participants may be temporarily or permanently discontinued from the study depending on the severity of the condition and on the judgement of the investigator.
- Adverse event: If a participant experiences an adverse event during the study they may be discontinued based on the clinical judgement of the investigator.
- Symptoms: If the participant has persistent symptoms they may be discontinued based on the clinical judgement of the investigator.
- Disinterest, relocation or illness: The participant may choose to discontinue due to reasons within or beyond their control.
- Violation of protocol or non-compliance: The participant will be discontinued if they are unable or unwilling to follow the protocol specified visit schedules and/or study procedures.
- Instillation of topical ocular medication: The participant will be discontinued if they elect to use a topical ocular medication during the study unless that topical ocular medication is prescribed for a limited duration (less than two weeks) to treat a transient condition; in this case the participant may remain an active participant (at the discretion of the investigator) after stopping topical ocular medication following resolution of the ocular condition).
- Lost to follow-up: The participant will be discontinued if they cannot be contacted and do not return for a final exit visit, and if the investigator has made a reasonable effort to contact the participant for a final study visit.
- Premature termination of the study by the sponsor, the CCLR or the Office of Research Ethics at the University of Waterloo.

A discontinuation form (Appendix 13) will be completed, which requires the signatures of both the participant and the investigator except where the participant is lost to follow-up in which case only the signature of the investigator is required.

## 9 DEVICE MALFUNCTIONS

A device malfunction means the failure of the device to meet its performance specification or otherwise perform as intended. *Any defective lens that is likely to cause or contribute to a Serious Adverse Event should be reported to the Principal Investigator and the sponsor **within 24 hours** of the investigator becoming aware of the malfunction. The ORE would also be notified within 24 hours of any device malfunction that may contribute to a Serious Adverse Event.*

Other defective lenses should be reported to the Sponsor as soon as possible (usually in weekly study updates to the Sponsor).

This clinical study will also ascertain satisfaction or preference with subjective attributes such as comfort, vision, or lens handling. Responses to these subjective questionnaires will not be considered as complaints or device malfunctions.

## 10 STUDY COMPLETION AND REMUNERATION

At the last scheduled protocol visit a study completion form (Appendix 25) will be completed, which requires the signatures of both the participant and the investigator. The participants will also be provided with a letter of appreciation (Appendix 16).

Once their involvement in the study is complete, participants will be informed about receiving feedback following study completion in the Letter of Appreciation (Appendix 16).

Participant remuneration will be [REDACTED] (including the initial screening visit). Full details are given in the information consent letter (Appendix 1).

## 11 STATISTICAL ANALYSIS AND DATA MANAGEMENT

### 11.1 SAMPLE SIZE CALCULATION

The maximum sample size will be 52. For a two-sided paired t-test with an alpha of 0.05 and a power goal of 80%, this will allow an effect size as small as 0.28 to be detected. This sample size will give approximately 80% confidence to detect a difference of 5 points in comfort ratings.

Table 4 shows the sample size determination for a difference between two means in comfort scores. Sample sizes with 80% power are shown at two different alpha levels (alpha = 0.05 and alpha = 0.10). Assuming a standard deviation of 12.6 points, a sample size of 52 participants provides 80% power to detect a trend in difference of comfort scores between 5 points on a 100-point scale.

Table 4: Sample size calculation

Mean individual	Mean individual	Sample size	Sample size
-----------------	-----------------	-------------	-------------

difference in score	standard deviation	(p = 0.05)	(p = 0.10)
5	12.6	52	41
7	17.6	52	41

## 11.2 STATISTICAL ANALYSIS

All data will be analyzed by the CCLR at the University of Waterloo. Summary statistics will be produced (e.g. mean, standard deviation). Data analysis will be conducted using Statistica and / or SPSS. Descriptive statistics will be provided on information regarding baseline variables (age, gender, refractive error distribution, etc.). Analysis of variables will be conducted separately on each eye, and data will not be pooled. A Binomial test will be used to analyze the results for the count data of subjective preferences. The number of “no preference” will be evenly distributed to the two options on the basis they would be equally likely to choose either.

Table 5 lists the primary outcome variables and anticipated statistical procedures.

**Table 5: Outcome variables and anticipated statistical procedures**

Variable	Analysis	Statistical test
Analogue scales/Numeric scales/Preference scales/VA Lens parameters, Biomicroscopy (continuous variables)	<i>Effect of lens type</i>	RMANOVA/MANOVA/ Friedman /Wilcoxon matched pairs test Tukey HSD post hocs Paired t-test Chi-square test
Biomicroscopy (ordinal variables)	<i>Effect of lens type</i>	Friedman Wilcoxon matched pairs test
Analogue scales/Numeric scales/Lens parameters, Biomicroscopy (continuous)	<i>Relationship between slit lamp findings and analogue scales</i>	Pearson correlation - r
Biomicroscopy (ordinal variables)	<i>Relationship between slit lamp findings and analogue scales</i>	Spearman correlation - rho

The critical alpha level for statistical significance will be set at  $p \leq 0.05$ , with no adjustments for multiple comparisons.

All participants who were evaluated will be used in the analysis. In the event of missing data, individual data points will be excluded in the analysis and not extrapolated from the collected data.

## 12 DATA QUALITY ASSURANCE

## 12.1 STUDY MONITORING

Site qualification of the investigative site has been completed to ensure that the site facility is adequate, personnel are qualified and resources are satisfactory to conduct clinical studies for the Sponsor. The protocol will be reviewed by the investigators prior to enrollment of the first participant. This will involve an overview of the protocol, which includes information on study objectives, inclusion and exclusion criteria, study visits and adverse event reporting. Data collection forms will also be reviewed and this will provide an opportunity to discuss any questions.

Central study monitoring will involve regular study updates from the clinical site to the sponsor. The updates will include the number of participants enrolled, the number eligible, the number completed and whether there have been any unscheduled visits, discontinuations, significant or serious adverse events or major protocol deviations. These updates will be provided weekly.

Prior to final data lock, a close-out visit/discussion may be warranted to check for accuracy and completeness of records. The sponsor or sponsor's representatives will be authorized to gain access to the source documentation for the purposes of monitoring and auditing the study.

## 12.2 SPONSOR RESPONSIBILITIES

The Sponsor has the ultimate responsibility for monitoring. The Sponsor is to supply and keep an up-to-date signed protocol and protocol amendments, and provide devices which are the subject of the clinical investigation.

The sponsor should ensure: appropriate information is provided to the Investigators to conduct the clinical trial; that deviations are reviewed with the Investigator as needed and included in the final report. Adverse events are reported by the Investigator, and the sponsor in turn will then notify their applicable regulatory authorities, and other investigators as appropriate. The Sponsor is to maintain Sponsor-specific clinical trial documentation as required by the regulatory authorities and to ensure the Investigator is aware of their record keeping responsibilities.

## 12.3 INVESTIGATOR RESPONSIBILITIES

The Investigator is responsible for ensuring participant safety and data quality by: protocol compliance, adherence to GCP and local regulatory requirements, and the Declaration of Helsinki. The Investigator should be appropriately qualified and legally entitled to practice, and be trained in the proper method of obtaining informed consent.

The Investigator must have the appropriate resources to conduct the clinical trial, be familiar with the protocol and agree to adhere to it, support monitoring and auditing activities, communicate

with the Sponsor regarding any clinical trial issues or need for protocol modifications, make the necessary arrangements to ensure proper conduct and completion of the clinical trial, and ensure the protection and welfare of the participant, including arranging any emergency treatment as needed.

The Investigator must ensure written ORE approval is received prior to the start of the clinical trial, that the ORE and Sponsor is kept informed of the clinical trial progress, including adverse events and deviations as required by them, and that any changes to the protocol are notified to the ORE and review written approval prior to implementation.

#### 12.4 RECORD KEEPING

Detailed records of all study visits will be made using the Case Report Forms (CRFs). All data recorded on forms will be in ink. Any corrections to the forms will be initialed and dated at the time they are modified.

#### 12.5 RETENTION OF STUDY RECORDS AND DATA

Following study completion, data will be available in electronic and/or paper format for audit, sponsor use, or subsequent analysis. The original clinical raw data (including completed CRFs and Informed Consent forms) will be retained according to guidelines set forth in the general work agreement with the site. The Sponsor will be notified and consulted if ever the files are to be destroyed. Copies of raw data will be forwarded to the sponsor at completion of the final report.

Records and data from this study will be retained for a minimum of 25 years.

#### 12.6 DATA ENTRY / DATA MANAGEMENT

Data will be entered into an electronic spreadsheet. Study staff will only be able to modify the data file via password entry. The investigators will be responsible for the data integrity, and complete data entry for each visit in the CRFs and other relevant forms. The investigator will review the take home questionnaires with the participant. At the completion of the study the investigator will send the data collected to the study sponsor within approximately 5 business days after the study report is finalized.

Data analysis will not be conducted on comments which have been recorded in the source documents. Only pre-defined comments will be entered into the study database. Only relevant and applicable comments will be included in the final report as deemed necessary by the lead investigator.



## 13 PROTOCOL TRAINING

All study personnel will be required to complete training prior to their involvement in the study. Records of training will be kept at the CCLR.

## 14 STUDY MONITORING

Status reports will be provided to the study sponsor by email on a regular basis.

Status reports will include:

- The number of participants screened, enrolled, and randomized (i.e. assigned a study ID number), discontinued and completed.
- Details of protocol deviations.
- Reports of unintended events.

Study monitoring visits may be conducted throughout the study and will be scheduled by the study sponsor in conjunction with the lead investigator. In addition study records may be inspected at the CCLR by the sponsor, the sponsor's designate, the Office of Research Ethics at the University of Waterloo, and by regulatory authorities in Canada and the United States, namely Health Canada and the United States Food and Drug Administration (FDA); however, no records containing identifiable/personal information will be permitted to leave the custody of the CCLR.

## 15 STUDY MANAGEMENT

### 15.1 PROTOCOL DEVIATIONS

Protocol deviations are unanticipated or unintentional changes to a study after it has received prior sponsor approval and ethics clearance. Protocol deviations can be major or minor.

#### 15.1.1 MAJOR PROTOCOL DEVIATIONS

Major protocol deviations may impact the research protocol, information consent document or other study materials, usually cannot be anticipated ahead of time and are often necessary to ensure the safety and welfare of the participants.

The following are examples of protocol deviations that must be reported to the ORE:

- Changes in procedures initiated to eliminate immediate risks/hazards to participants;
- Enrollment of participants outside the protocol inclusion/exclusion criteria whether agreed to or not by the sponsor;

- Inadvertent deviation in specific research intervention procedures or timing of the research intervention which could impact upon the safety or efficacy of the study-related intervention or upon the experimental design;
- Information consent documentation violations: no documentation of informed consent; incorrect version of, or incomplete, informed consent documentation used.

### 15.1.2 MINOR PROTOCOL DEVIATIONS

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Protocol deviations caused by or which originate with research participants are considered minor, and normally are not reported to the ORE unless these result in increased risk to the participant(s). The following are examples of protocol deviations that are considered minor and do not require reporting to the ORE:

- Logistical or administrative aspects of the study (e.g., study participant missed appointment, change in appointment date);
- Inadvertent deviation in specific research intervention procedures or timing of the research intervention which would not impact upon the safety or efficacy of the study-related intervention or upon the experimental design (i.e., missing a measurement during a session that is not considered critical for the study).

### 15.1.3 REPORTING AND DOCUMENTING PROTOCOL DEVIATIONS

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Major protocol deviations which require changes to the research protocol or informed consent process/document or other corrective actions to protect the safety, welfare, or rights of participants or others must be reported to the ORE (as per guidelines of the ORE), using the Protocol Deviation Report Form 107 (PDRF). Information from the PDRF is provided to the Clinical Research Ethics Committee (CREC) at the next monthly meeting.

All protocol deviations (major and minor) occurring during the study will be documented and included in the final report.

## 15.2 PREMATURE TERMINATION OF THE STUDY

The sponsor, the CCLR or the Office of Research Ethics at the University of Waterloo may terminate the study at any time for any reason.

## 15.3 STUDY PARTICIPANT RECORDS

Study participant records will be completed to comply with GCP guidelines. Records will contain:

- Unique study acronym and/or code;

- Participant ID;
- Date enrolled;
- Confirmation by investigator that participant met eligibility criteria;
- Confirmation that participant received a signed and dated copy of informed consent;
- Exit date;
- Investigator's signature confirming each participant's study exit.

#### 15.4 RETENTION OF STUDY RECORDS AND DATA

Records and data from this study will be retained for a minimum of 25 years. Details regarding storage procedures are given in the CCLR SOP.

### 16 CONFIDENTIALITY

This study is confidential in nature. All information gathered during this study is proprietary and should be made available only to those directly involved in the study. Information and reports arising from this project are the property of the sponsor.

### 17 PUBLICATION

Due to the confidential and proprietary nature of the clinical study, any presentation and/or publication including but not limited to those made at scientific meetings, in-house, in peer-review journals, professional publications, etc. need to be approved by the sponsor.

### 18 STUDY COSTS

The sponsor will compensate the clinical site and the participants for their time and participation in this voluntary study.

Expenses incurred for medical treatment as part of study participation will be paid by the sponsor (bills and prescription receipts kept). The participant must be followed until resolution and a written report completed indicating the subsequent treatment and resolution of the condition.

### 19 REPORT

A report will be sent to the sponsors according to terms described in the study contract.

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