Clinical Research Protocol

Disrupted **S**leep and **C**oncur**ren**t **E**ctopy or **A**trial **F**ibrillation **(DISCRETE AF)**

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Funding Organization:	UCSF Cardiology and the Heart Rhythm Society
Principal Investigator:	Name: Gregory M Marcus, MD, MAS Telephone: 415-476-3450 E-mail: greg.marcus@ucsf.edu Name: Jean Jacques Noubiap, MD, PhD Telephone: 415-476-3450 E-mail: jeanjacques.noubiapnzeale@ucsf.edu
Mentor:	Name: Gregory M Marcus, MD, MAS Telephone: 415-476-3450 E-mail: greg.marcus@ucsf.edu
Co-Investigators	Name: Jolie Chang, MD, Sleep Surgery, UCSF Name: Catherine Lee, PhD, Department of Epidemiology and Biostatistics, UCSF
Clinical Research Coordinators	Name: Hannah Hninyi Oo Name: Gabrielle C. Montenegro

Approval:

Principal Investigator or Sponsor Signature (Name and Title) *Date*

The information in this document may not be disclosed unless federal or state law or regulations require such disclosure. Subject to the foregoing, this information may be disclosed only to those persons involved in the study who have a need to know, with the obligation not to further disseminate this information.

PROTOCOL AGREEMENT

I have read the protocol specified below. In my formal capacity as Investigator, my duties include ensuring the safety of the study participants enrolled under my supervision and ensuring complete and timely information, as outlined in the protocol. It is understood that all information pertaining to the study will be held strictly confidential and that this confidentiality requirement applies to all study staff at this site. Furthermore, on behalf of the study staff and myself, I agree to maintain the procedures required to carry out the study in accordance with accepted Good Clinical Practice principles and to abide by the terms of this protocol.

Protocol Number: 2.0

Protocol Title: Disrupted Sleep and Concurrent Ectopy or Atrial Fibrillation (DISCRETE AF)

Protocol Date: 07 May 2025

Investigator Signature	*Date*

Print Name and Title

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LIST OF ABBREVIATIONS

AF	atrial fibrillation
CFR	Code of Federal Regulations
ECG	electrocardiogram
HGNS	Hypoglossal nerve stimulation
IEC	Independent Ethics Committee
IRB	Institutional Review Board
PACs	Premature atrial contractions
PVCs	Premature ventricular contractions

PROTOCOL SYNOPSIS

TITLE	Disrupted Sleep and Concurrent Ectopy or Atrial Fibrillation (DISCRETE AF)
SPONSOR	Investigator-initiated
FUNDING ORGANIZATION	UCSF Cardiology and the Heart Rhythm Society
NUMBER OF SITES	1
RATIONALE	To examine, in a randomized fashion to allow inference of causal effects, the acute relationship between sleep disruption and atrial and ventricular ectopy.
STUDY DESIGN	This is a prospective, randomized, case-crossover study.
GENERAL OBJECTIVE	To assess the acute effects of sleep disruption on clinically relevant cardiac ectopy pertinent to atrial fibrillation (AF).
SPECIFIC OBJECTIVES	**Primary:** • To assess the effect of sleep disruption on daily number of cardiac ectopic beats. **Secondary:** • To assess the effect of sleep disruption on daily number of premature atrial contractions (PACs). • To assess the effect of sleep disruption on daily number of premature ventricular contractions (PVCs). • To assess the effect of sleep disruption on daily number of AF episodes.
NUMBER OF PARTICIPANTS	100
PARTICIPANT SELECTION CRITERIA	Inclusion Criteria: • Age 21 years or older • Have a hypoglossal nerve stimulation (HGNS) device implanted for obstructive sleep apnea and followed up at UCSF • Are willing to abstain from using the HGNS device for no more than two consecutive days as instructed over the 14-day trial period • Able and willing to provide written informed consent Exclusion Criteria: • Currently pregnant or trying to get pregnant • Are currently taking Class 1 or 3 anti-arrhythmic medications • Have a history of permanent AF or expected to have AF throughout the study period

	• Have congenital heart disease • Are >40% ventricular paced • Are unable to read or sign to provide informed consent
STUDY DURATION	Participants will participate for approximately 2 weeks. • Randomization and monitoring: up to 2 weeks.
PROCEDURE	After being fitted with an automatically recording electrocardiographic monitor, the HGNS device will then be "on" versus "off" (where "off" is turning off the HGNS device for one night and "on" is turning on the HGNS device) over the ensuing 14 days. Participants will be randomized to "off-on" versus "on-off" periods, assuring no more than two consecutive days of either device use or not. Electrocardiographic monitoring data will be used to assess for endpoints.
PRIMARY ENDPOINT	The daily number of cardiac ectopic beats
SECONDARY ENDPOINTS	• The daily number of PACs • The daily number of PVCs • The daily presence versus absence of AF episodes ≥ 30 seconds
STATISTICS **Primary Analysis Plan**	Our primary analyses will employ intention-to-treat principles, examining randomization assignment as the primary predictor.
Rationale for Number of Participants	Using a two-tailed alpha of 0.05, we estimate we will need 100 participants to have 80% power in intention-to-treat analyses comparing nights on and off HGNS to detect a 2% increase in cardiac ectopy.

1 INTRODUCTION

1.1 BACKGROUND

Sleep disorders and poor sleep are a major public health problem owing to their prevalence and adverse effects. One health condition that sleep disorders have long been implicated in is the development of AF. AF is the most common sustained cardiac arrhythmia. In a recent study, we estimated that the current US national prevalence of diagnosed AF is at least 10.55 million, comprising 4.48% of the adult population, substantially exceeding prior projections.[1] AF is a leading cause of stroke, reduces quality of life, increases risks of myocardial infarction and dementia,[2] and results in > $28 billion in US healthcare expenditures annually.[3]

The relationship between poor sleep and incident AF was initially attributed to a common association with obstructive sleep apnea (OSA). However, emerging evidence suggests that chronic sleep disruption independent of OSA may play a role in the development of AF. Indeed, work largely from our group has revealed that abnormal sleep characteristics including frequent nighttime awakening, less rapid eye movement (REM) sleep, and a diagnosis of insomnia may predict incident AF, even after adjustment for OSA.[4, 5] Furthermore, studies of the circadian variation of arrhythmia onset patterns in patients with AF have shown a nocturnal predominance, suggesting that nocturnal events such a disrupted sleep may be arrhythmogenic.[6, 7] Whereas the available evidence mostly support chronic sleep disruption as a risk factor for incident AF, less is known about the near-term risk of a discrete AF episode following a night of disrupted or poor-quality sleep.

1.2 SIGNIFICANCE

Acute lack of sleep has been identified by patients as one of the most common triggers of AF.[8] In the Individualized Studies of Triggers of Paroxysmal Atrial Fibrillation (I-STOP-AFib) randomized clinical trial conducted by our group, poor sleep was associated with an immediately increased risk for self-reported AF episodes, and a dose-response relationship existed such that progressively worse sleep was associated with longer episodes of AF the next day.[9] These data suggest that sleep quality may be a potentially modifiable, immediate, trigger of AF. However, in this study, both sleep quality and AF episodes were subjectively assessed based on self-report, highlighting the need for studies of the relationship of poor sleep and AF episodes using objective measurements.

Given evidence regarding chronic effects of sleep disruption, why is it important to study acute effects as proposed here? There are several reasons. First, while long-term risk factors for AF have been well-established, there is growing interest among both patients and expert clinicians and investigators that understanding acute triggers of AF are important.[8, 10, 11] Second, patient behavior is generally more strongly motivated or changed at the prospect of immediate rather than delayed effects.[12, 13] Third, the study of such acute effects may provide more precision and more compelling data regarding causal effects—for example, randomized trials of sleep apnea treatment of AF have thus far failed to demonstrate meaningful chronic effects.[14, 15] Of note, those studies relied on

external machines to treat sleep apnea, devices that are notoriously unwieldly and subject to poor patient compliance.

This will be the first randomized case-crossover assessment to reveal immediate relationships between sleep disruption and more frequent clinically relevant common cardiac arrhythmias pertinent to and potentially including AF episodes. Specifically, premature atrial contractions (PACs) are the most potent predictor of AF.[16-18] Other potentially important arrhythmias are premature ventricular contractions (PVCs), a higher frequency of which is clinically relevant as it predicts future heart failure.[19, 20] Because everyone experiences PACs and PVCs, use of continuously worn ECG monitors that quantify such common ectopy can be used to harness sufficient power to evaluate clinically relevant outcomes as done in the Coffee and Real-time Atrial and Ventricular Ectopy (CRAVE) study.[21]

Compelling evidence of the direct impact of sleep disruption on discrete AF episodes would be directly and immediately relevant to clinical care of our patients. In fact, identifying near-term triggers of AF is a high priority for patients with AF and may effectively determine lifestyle modifications that can meaningfully affect the risk of an arrhythmia occurrence.[8, 10, 22]

2 STUDY OBJECTIVES

2.1 General Objective

This randomized case-crossover trial aimed to test the hypothesis that sleep disruption acutely increases clinically relevant cardiac ectopy pertinent to AF, specifically the frequency of PACs and PVCs.

2.2 Specific Objectives

- Primary:
  To assess the effect of sleep disruption on daily number of cardiac ectopic beats.
- Secondary:
  - To assess the effect of sleep disruption on daily number of PACs.
  - To assess the effect of sleep disruption on daily number of PVCs.
  - To assess the effect of sleep disruption on the daily presence versus absence of AF.

3 STUDY DESIGN

3.1 Study Overview

This is a single center, non-blinded, prospective, randomized, case-crossover trial, where 100 participants will be randomized to turning “on” or “off” their hypoglossal nerve stimulation (HGNS) device each day of a 14-day monitoring period. Participants will wear an automatically recording electrocardiographic (ECG) monitor and utilize a text messaging software for surveys and data capture. Participants will also share their sleep information from their HGNS device with the investigators.

4 CRITERIA FOR EVALUATION

4.1 Primary Endpoint

The daily number of ectopic beats (per 24-hour period).

4.2 Secondary Endpoints

- The daily number of PACs
- The daily number of PVCs
- The daily presence of AF

5 PARTICIPANT SELECTION

5.1 Inclusion Criteria

Participants must meet all the following to be eligible:

- Are age 21 years or older
- Have a HGNS device implanted for OSA and followed up at UCSF
- Are willing to abstain from using the upper airway stimulation device for no more than two consecutive days as instructed over the 14-day trial period
- Able and willing to provide written informed consent

5.2 Exclusion Criteria

- Currently pregnant or trying to get pregnant
- Are currently taking class 1 or 3 anti-arrhythmic medications
- Have congenital heart disease
- Ventricular pacing >40%
- Are unable to read or sign to provide informed consent

6 STUDY INTERVENTIONS

6.1 Hypoglossal Nerve Stimulation Therapy

HGNS is performed by the Inspire Upper Airway Stimulation (Inspire Medical Systems, Inc., Golden Valley, Minnesota, US), a fully implanted system that is placed under the skin of the neck and chest. A remote system can be used to turn the device on or off at nighttime. When sleeping, the device stimulates the tongue, increasing muscle tone and opening the airway in sleep. HGNS has been shown to lead to significant improvements in sleep apnea, sleepiness, and quality of life in patients with OSA.[23, 24] The use of HGNS by these patients significantly improves their sleep with a reduction in sleep disruption, and those with the implant have met all clinical indications for the device. No participant will have a device placed solely for the purpose of study participation and all will already have

a device implanted per standard clinical indications. A night on HGNS will be considered as reduced sleep disruption, whereas a night off HGNS will be considered one with more sleep disruption.

6.2 Method of Assigning Participants to Interventions

After being fitted with an automatically recording electrocardiographic monitor, the HGNS device will then be "on" versus "off" (where "off" is turning off the HGNS device for one night and "on" is turning on the HGNS device) over the ensuing 14 days. Participants will be randomized to "off-on" versus "on-off" periods, assuring no more than two consecutive days of either device use or not—this helps assure equal or near-equal days for each assignment even with truncated follow-up; and maximizes the number of switches between the two to assure examination of acute effects rather than chronic, cumulative effects.

6.3 Measures of Intervention Compliance

Compliance with intervention assignments will be assessed based on review of daily reports. These reports could be accessed through the Inspire® app that allows patients to share sleep therapy data with their clinicians, or alternatively, downloaded during a clinic visit.

7 STUDY PROCEDURES

7.1 Participant Recruitment

Potential participants will be referred to us from the UCSF Sleep Surgery Division where >200 patients with HGNS therapy are being followed (and implants continue to be placed). Research personnel will contact these potential participants to schedule an initial in-person Enrollment Visit at Parnassus, or for a remote Enrollment Visit via video conference, with a study coordinator. During the Enrollment Visit, study staff will confirm that the participant is eligible for the study via an eligibility survey. Study staff will then review the study terms and obtain informed consent from eligible, interested participants. Study participation is anticipated to be 16 days with two in-person or remote visits occurring at study commencement and termination (Baseline and Termination). The participant may withdraw voluntary participation at any time. An early termination visit should be done if a participant chooses to discontinue participation prior to study completion.

7.2 Mobile Study Activities: Mosio for Research

We will use the Mosio platform, a text messaging software that connects to REDCap for digital surveys, to facilitate single subject case-crossover experiments.

7.3 ECG Monitor: ZIO® XT Patch Event Monitor

Each participant will be equipped with a ZIO® XT Patch (iRhythm, San Francisco), which is a 2" by 3" sticky patch. This external cardiac event monitor utilizes validated

algorithms to automatically detect heart rhythm disturbances independent of heart rate. The device records every heartbeat, providing a continuous Holter function. The ZIO® XT Patch is produced by iRhythm and mailed in a prepaid box back to iRhythm for analysis. iRhythm will not receive any patient identifying information.

7.4 Home Sleep Apnea Test

Each participant will undergo two consecutive days of home sleep apnea recording using the WatchPAT® ONE-M Home Sleep Apnea Test (Itamar Medical, Caesarea). The WatchPAT® ONE-M is a disposable, portable, home sleep apnea test and diagnostic device that uses peripheral arterial tonometry, an approved measure that has an 89% correlation with polysomnography, the reference standard to diagnose and assess the severity of OSA.[25] We will collect data on the Apnea/Hypopnea Index (AHI), the number of apnea episodes throughout the night, pulse oximetry and heart rate. The manufacturer, Itamar Medical, will not receive any patient identifying information.

7.5 Text Messaging Service

We will use Mosio, text messaging software for clinical research that will deliver daily text reminders with surveys to the participants. Participants will receive a text welcoming them to the study upon completing the Enrollment and Baseline Visits, and daily texts with relevant study surveys throughout the monitoring period.

7.6 Enrollment Visit (Pre-Screening/Pre-Consent)

The Enrollment Visit (on or before Day 0) takes place on the same day as or prior to the day of the Baseline Visit and is aimed for:

- Pre-screen potential participants by eligibility criteria
- Schedule Baseline Visit

At this point, participants are still free to use their HGNS as usual.

7.7 Baseline Visit (Before Day 1)

Study staff will meet the study participant at UCSF (i.e. in the Clinical Research Center) or remotely through a phone/video call. If the participant is eligible per the study's inclusion and exclusion criteria, the study staff will review and obtain informed consent

At this visit, the study staff will also collect the participant's contact information. Additionally, the study staff will administer baseline surveys including demographics, bits (such as alcohol, smoking, cannabis use), medical conditions, medications inventory, Epworth Sleepiness Scale, Insomnia Severity Index and Functional Outcomes of Sleep Questionnaire.

At the Baseline Visit, the study staff, all of whom are trained, will fit the provided devices for an in-person participant or direct self-administration for a remote participant, and instruct the participant on device application and care. The study staff will inform the participant of relevant risks pertaining to potential skin irritation from the adhesive on the devices and will also explain relevant information pertaining to loss of privacy in the study (see section 8.1).

After completion of study device education and fitting, the study staff will schedule the participant's final Termination Visit (Day 15+). Participants are still free to use their HGNS device as usual on the day of the Baseline Visit.

7.8 Randomization and Monitoring (Day 1-14)

At 08:00 AM on the first day (Day 1), the participant will receive a text or push notification from a mobile app or text messaging service with instructions for the same day's randomization. Their first reminder regarding their randomization will be at 08:00 PM on Day 1. During the study (Day 1-14), participants will receive two text or push notifications (AM and PM) each day:

1. 08:00 AM: Instructions on the present day's randomization, in addition to daily surveys on randomization compliance and sleep quality.
2. 08:00 PM: Reminder of instructions on the present day's randomization.

At 08:00 AM on Day 15 participants will complete the final compliance survey and will be reminded to resume their normal HGNS use.

"On" day messages will instruct participants to use their HGNS device and on "off" days, participants will be instructed to not used them. To avoid >2 consecutive days with or without using their device, participants will be randomized in pairs of either "off one day and on the next day" or "on one day and off the next day".

Each participant will also undergo two consecutive days of home sleep apnea recording using the WatchPAT® ONE-M Home Sleep Apnea Test, ideally during the first days of participation.

Throughout the study period (Day 1-14), the participants should continuously wear their ECG monitor.

7.9 Assessment of sleep quality

The sleep quality on the preceding night will be assessed via a mobile app-based survey and categorized as "amazing," "good," "average," "bad," or "horrible." As previously reported, the choice of terminology and method of data input were developed in collaboration with patients to prioritize capture of information believed in their opinion to be important, maximize ease of understanding, and facilitate daily use.[9]

7.10 Monitoring Close-Out Visit (Day 15+)

During the Termination Visit (Day 15+) on Day 15 or later, the study staff will meet the study participant at UCSF (i.e. in the Clinical Research Center) or remotely via phone/video call at the time specified by the study participant. The study staff will remove or remotely instruct the participants on how to remove the ECG monitor.

8 RISK AND BENEFIT ASSESSMENT

8.1 Risks

Potential risks of the study include the following:

- *Small risk of loss of privacy*: Data that the participant provides to the study may be sensitive and could be embarrassing to participants or lead to insurance coverage problems if it were leaked (e.g., obesity or very high blood pressure).
- *Financial risk*: Participating in the study may make participants want to access the healthcare system more often or purchase health-related devices to link to the study, and that all costs money.
- *Risks of study sensors*: Allergy to the adhesive used for the event monitor electrodes can lead to a rash, pruritus, and/ or painful irritation. Topical steroids will be provided if needed and participants will be provided an option to decline if they are concerned given past experience. As with previous studies, sensors may be moved and/ or not worn if irritation is not tolerable (in which case, late screen-failures and alternative/ additional participants may be used for replacement).
- *Risks of HGNS withdrawal*: as expected participants may experience an increase in sleep disruption on the days their device is off, potentially leading to a relapse of their OSA symptoms. There should be no long-term effects of therapy withdrawal. Indeed, a previous study showed that 1-week continuous withdrawal of therapeutic HGNS results in acute worsening of both objective and subjective measures of sleep and breathing, but with return of the positive therapeutic effects upon resuming therapy.[26] To limit the acute negative impact of the withdrawal therapy on their well-being, no participant will be instructed to turn off their device more than 7 out of the 14 participation days. It is also part of standard of care

8.2 Benefits

There are no direct benefits for participating in this study. However, the knowledge gained from this study may help better understand the mechanisms underlying AF occurrence. Furthermore, compelling evidence of the direct impact of sleep disruption on discrete AF episodes would be directly and immediately relevant to clinical care of patients with AF.

8.3 Assessment of Potential Risks and Benefits

The Investigator considers protection against risks to be a major responsibility. The following strategies are pursued to minimize risks:

- *Risk of loss of privacy:* Storage of study data in a secure database.
    - Password-protected log-in will be required to see study data. A password recovery system will be set up to allow participants to input both the question and answer for a “hint” that can be provided by the website.
    - An explicit Privacy Statement is included in the Informed Consent document and posted to the study website to fully inform participants.
    - An audit trail will record all logins and any changes to study data.

    - If an event occurs that threatens participant privacy or data security, we will notify our IRB immediately and fully document the occurrence.
    - E-mails, app notifications, and texts to the study participants are for the sole purpose of engagement and retention. No sensitive health information will be sent via e-mail to a participant.
- *Financial risk:* Participants are informed about the financial risk and encouraged not to see a healthcare provider (for which they might have to pay) solely for the purpose of collecting data for the study.
- *Online surveys and linkage to health data from sensors or web applications:* Study coordinators are available (by email and by phone) to answer any uncomfortable questions about surveys, study devices, or other study activities that arise.
- *Risks of study sensors:* Hypoallergenic adhesive will be provided to patients that develop any rash, pruritus, or painful irritation that develops. Participants will also be prescribed oral Benadryl and/ or topical steroid cream if necessary. Finally, they will have the option to discontinue participation if an adhesive reaction is not tolerable.
- *Risks of HGNS withdrawal:* The study is designed specifically to avoid participants to have their device turned "off" more than 7 out of the 14 participation days, with no two consecutive days "off". This will be accomplished by a randomization to "off-on" versus "on-off" days. As part of routine clinical care, it is also not uncommon to adjust days on and off to help address variable tolerance of the device use for patients with these implants. Patients also in the course of their clinical care may opt to turn the device off on some nights (such as for comfort) as part of their routine clinical care.

The Investigators have weighed the adequacy of protection against the importance of knowledge gained and determined the risks to be justified. Whether sleep disruption can truly result in any given AF event remains unknown—in fact whether AF can be triggered by any modifiable exposure has not yet been proven in a randomized trial. The importance of the knowledge to be gained from this study is therefore two-pronged: first, the acute effects of sleep disruptions are relevant to the third of the US population who have insufficient sleep. Second, understanding the mechanism that results in the initiation of AF episodes, or the development of incident AF is relevant to the rapidly growing and large number of AF patients because it will reveal mechanisms germane to AF itself. All taken together, the minimal risks incurred by study participants are reasonable considering the broadly applicable knowledge to be gained.

9 DISCONTINUATION AND REPLACEMENT OF PARTICIPANTS

9.1 Early Discontinuation from Randomization

A participant may be discontinued from randomization at any time if the participant or the investigator feels that it is not in the participant's best interest to continue. The following is a list of possible reasons for study treatment discontinuation:

- Participant withdrawal of consent

- Adverse event that in the opinion of the investigator would be in the best interest of the participant to discontinue treatment
- Lost to follow-up
- Early termination of the study (<2 days)
- Positive pregnancy test

All participants are free to withdraw from participation at any time, for any reason, specified or unspecified, and without prejudice.

Reasonable attempts will be made by the investigator to provide a reason for participant withdrawals. The reason for the participant's withdrawal from the study will be specified in the participant's source documents.

9.2 Withdrawal of Participants from the Study

A participant may be withdrawn from the study at any time if the participant or the investigator feels that it is not in the participant's best interest to continue.

All participants are free to withdraw from participation at any time, for any reason, specified or unspecified, and without prejudice.

9.3 Replacement of Participants

Participants who withdraw from the study will be replaced.

10 STATISTICAL METHODS AND CONSIDERATIONS

10.1 Sample Size and Randomization

Based on the frequencies that cardiac ectopy observed among 100 healthy individuals during a study examining acute effects on and off coffee, we estimate that, using a two-tailed alpha of 0.05, we will have 80% power in intention-to-treat analyses comparing nights on and off HGNS to detect a 2% increase in cardiac ectopy—meaning, we believe 100 participants will provide adequate power to test our hypothesis.

10.2 Statistical Analysis Plan (SAP) and Outcome Assessment

Our primary analyses will employ intention-to-treat principles, examining randomization assignment as the primary predictor. Secondary analyses will examine "per-protocol" compliance, which will also allow for quantitative assessments of outcomes per the number of hours off hypoglossal stimulation as the predictor. We will employ logistic regression with robust standard errors (to take clustering within individuals into account) for the dichotomous presence or absence of outcomes (such as at least one daily PAC, PVC, or episode of AF), and a negative binomial model to assess number of daily events.

10.3 Intention-to-Treat (ITT)

The main intention-to-treat (ITT) analysis set will include all randomized participants, whether they are compliant with the treatment allocation for this trial or not. Every

attempt will be made to collect data until the end of the follow-up period for all randomized participants and these data will be included as part of the main ITT analysis. The analyses for the primary objective will be performed using the ITT dataset.

Although substantial crossover is not anticipated, as treated analyses will also be conducted if failure to comply with allocated treatment assignments occurs in more than 10% of cases or if there is a significantly different proportion of assignment adherence for "ON" versus "OFF" HGNS use.

11 ADMINISTRATIVE, ETHICAL, REGULATORY CONSIDERATIONS

The study will be conducted according to the Declaration of Helsinki, Protection of Human Volunteers (21 CFR 50), Institutional Review Boards (21 CFR 56), and Obligations of Clinical Investigators (21 CFR 312).

11.1 Protocol Amendments

Protocol amendments cannot be implemented without prior written IRB/IEC approval except as necessary to eliminate immediate safety hazards to patients. A protocol amendment intended to eliminate an apparent immediate hazard to patients may be implemented immediately, provided the IRBs are notified within five working days.

11.2 Informed Consent Form

Informed consent will be obtained in accordance with the Declaration of Helsinki, International Conference on Harmonization Good Clinical Practice, US Code of Federal Regulations for Protection of Human Subjects (21 CFR 50.25[a,b], CFR 50.27, and CFR Part 56, Subpart A), the Health Insurance Portability and Accountability Act (if applicable), and local regulations.

The consent form generated by the Investigator must be approved by the IRB/IEC. The written consent document will embody the elements of informed consent as described in the International Conference on Harmonisation and will also comply with local regulations.

A properly executed, written, informed consent will be obtained from each participant prior to entering the participant into the trial.

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APPENDIX 1. SCHEDULE OF EVENTS

	PRE-SCREENING (Pre-Consent)	BASELINE VISIT (Before Day 1)	DEVICE FITTING VISIT (Day 1)	MONITORING (Day 1-15[b])	MONITORING CLOSE-OUT VISIT (Day 15[b])
Eligibility Review	X				
Informed Consent		X			
Demographics		X			
Medical Conditions		X			
Medications		X			
Baseline Alcohol Consumption		X			
Smoking History		X			
Arrhythmia History		X			
Baseline sleep surveys		X			
Mobile apps download and set up			X		
ECG monitor application			X		
Randomization				X	
Daily sleep surveys				X	
Home Sleep Apnea Test				X	
Monitor return					X
Randomization Compliance Survey					X

[a] These activities will only be completed if a participant is willing and able (and are therefore considered "optional")
[b] 15 days or for as long as a participant is tolerant of study monitors (whichever occurs first)