Q-SUBMISSION: PRE-SUBMISSION MEETING REQUEST

Title of Proposed Trial

Name/Credentials of Sponsor-Investigator

Title

Department

University of California, Los Angeles

Address

Address

Telephone:

Email:

Date of Submission

# FDA Form 3514

*Link to FDA Form 3514:*

[*http://www.fda.gov/downloads/AboutFDA/ReportsManualsForms/Forms/UCM080872.pdf*](http://www.fda.gov/downloads/AboutFDA/ReportsManualsForms/Forms/UCM080872.pdf)

# Table of Contents

[1. FDA Form 3514 2](#_Toc191284394)

[2. Table of Contents 3](#_Toc191284395)

[3. Purpose 4](#_Toc191284396)

[4. Proposed Intended Use/Indications for Use 4](#_Toc191284397)

[5. Regulatory History 4](#_Toc191284398)

[6. Planned Future Submission 4](#_Toc191284399)

[7. Background Information 4](#_Toc191284400)

[8. Device Description 4](#_Toc191284401)

[8.1 Proposed Predicate Devices 6](#_Toc191284402)

[9. Risk Analysis 7](#_Toc191284403)

[10. Overview of Product Development 8](#_Toc191284404)

[10.1 Completed Product Testing 8](#_Toc191284405)

[10.2 Proposed Nonclinical Testing 9](#_Toc191284406)

[10.3 Proposed Clinical Testing 10](#_Toc191284407)

[11. Specific Questions 10](#_Toc191284408)

[12. References 14](#_Toc191284409)

# Purpose

*The overall purpose of the Pre-Submission (Pre-Sub), including goals for the outcome of the interaction with FDA.*

# Proposed Intended Use/Indications for Use

*Provide sufficient information regarding the proposed intended use/indications for use, which may include the following:*

* *description of the disease or condition the device is intended to prevent, mitigate, screen, monitor, treat, or diagnose*
* *identification of the patient population for which the device is intended*
* *body part or tissue type to which the device will be applied or interact with*
* *frequency of use*
* *physiological use*
* *statement of whether the device is intended for prescription and/or over-the-counter use*

# Regulatory History

*List any relevant prior communications with the FDA regarding the subject device, including, but not limited to, marketing submissions, IDE applications, 513(g) requests, and/or Q-Submission (Q-sub) application numbers relevant to this Pre-Submission. Include submission numbers where applicable. For previous FDA interactions/submissions, provide a brief summary of the feedback received, how it was addressed, or, where applicable, provide justification for pursuing alternative pathways.*

# Planned Future Submission

*Clearly specify the type of anticipated future submission (e.g., IDE, 510(k), etc.) that your Pre-Sub questions are focused on, to help direct FDA feedback appropriately.*

# Background Information

*Provide background information on the disease, condition, or problem that is being addressed. Ensure that the background information is detailed enough to enable the FDA to provide meaningful feedback on the Pre-Sub questions. Keep the submission clear, concise, and focused.*

# Device Description

*Provide sufficient information regarding the device description, which may include:*

* *explanation of how the device functions*
* *pictures of the device (where applicable)*
* *engineering drawings (where applicable)*
* *physical, chemical and/or biological processes/principles that enable the device to function and generate output, if applicable*
* *significant physical, performance, and biological characteristics of the device, if applicable*
* *samples to demonstrate the use of the device (where feasible and appropriate)*
* *explanation of the user interface: Describe how the device interacts with the user (medical professional or patient) and other devices (if applicable), including software interfaces, controls, and any warnings or notifications.*
* *explanation of the materials used in the device: Specify the materials that make up the device and its components, especially if any materials are critical to its safety or functionality (e.g., biocompatibility, electrical properties)*
* *brief description of the manufacturing process: Provide a brief overview of the manufacturing process, particularly if it impacts the device’s safety, effectiveness, or performance (e.g., processes affecting sterility, material properties, or functionality). This may impact FDA recommendations for testing or clinical studies. Additionally, include a discussion of the device's mechanism of action and how the device and/or its output is used.*
* *basic scientific concepts that form the basis for the device*
* *the generic name of the device as well as any proprietary name or trade name, if applicable*

*Ensure your device description is clear and comprehensive, describing* ***ALL*** *elements of your proposed device,* ***including*** *its dimensions and all the dimensions of its components. Diagrams of both your device and an exploded view of your device with all of the components identified are very helpful.*

*Clearly identify and describe how all device components fit together and are assembled. While the FDA does not require specific manufacturing details regarding device assembly, it is helpful to note if components are glued, if one component fits inside another, or if other assembly methods are used.*

*Provide a detailed explanation of the functional purpose of each component of your device. This will help the FDA understand the device both as a whole and in terms of its individual parts.*

*Clearly identify all sizes and configurations of your device, ideally presented in a tabular format for clarity.*

*Ensure consistent terminology is* ***always*** *used for each device component throughout the submission(s).*

*In addition to written descriptions, pictures, and diagrams, providing additional information that demonstrates the clinical use of the device (e.g., surgical technique guide or video) may further assist the FDA in their review.*

## Proposed Predicate Devices

*Complete this section if applicable.*

*The 510(k) review process focuses on the comparison of a proposed device with a predicate device in terms of indications for use, technological characteristics, and, when applicable, performance testing. As a result, you should provide a summary of the predicate device(s) you plan to use for this comparison, along with the proposed indication(s) for use and technology of the device you would like to market (i.e., draft of your labeling).*

*For each predicate device identified, it is recommended to include the following:*

* *predicate device trade name, including model, if available*
* *510(k) number under which the predicate device was cleared*
* *classification of the predicate device*
* *comparison of the proposed device with the predicate in terms of indications for use, technological characteristics, and performance testing*
* *proposed indication for use*
* *technology of the device: may include the device’s materials, design, mechanism of action, energy source, software (if applicable), unique features, and any connectivity or integration with other devices or systems*

*Use the 510(k) summary sheet for your proposed predicate to guide the completion of the comparison table below. The 510(k) summary should include the device’s intended use, an explanation of its function, the scientific principles behind its design, and significant physical and performance characteristics of the device, such as device design, materials, and physical properties. You can search for 510(k) devices and their summaries here:* [*https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm*](https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm)

Table 1: Comparison Table

| **Device** | **Predicate Device:****Trade Name*****Model Number (if applicable)*** | **Proposed Device:****Name** | **Comparison** |
| --- | --- | --- | --- |
| Manufacturer |  |  | n/a |
| 510(k) Number |  |  | n/a |
| Regulation Number |  |  |  |
| FDA Product Code |  |  |  |
| Classification |  |  |  |
| Intended Use |  |  |  |
| Indications for Use |  |  |  |
| Intended Environment for Use  |  | (Prescription Use, Over-the-counter Use) |  |
| Device Technology |  |  |  |
| **Materials** |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Characteristics** |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Usage** |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Discussion**

*Discuss the information presented in the comparison table above. Highlight the similarities and differences between the new device and the predicate device, and comment on whether any new questions regarding safety and effectiveness are raised based on these differences.*

# Risk Analysis

*Provide a description and analysis of all increased risks that subjects may be exposed to during the investigation. Include how these risks will be minimized and provide a justification that the risks are reasonable in relation to the expected benefits of the investigation. Additionally, include a description of the patient population, specifying the number, age, sex, and condition of the subjects.*

*The risk analysis should include the anticipated benefits and potential clinical effects of failure identified in the device evaluation strategy, as well as risks independent of the device that may be related to the underlying disease, comorbidities, or inherent to the procedure. It should also include the benefits unique to the device concept. For example, a risk analysis may include risks associated with the use of anesthetics and contrast agents, while highlighting the benefits of a less invasive intervention.*

# Overview of Product Development

*Provide a comprehensive overview of the product development process, including a summary of both nonclinical and clinical testing that is either planned or has already been completed. Please note that FDA’s review of a Pre-Sub will focus on feedback regarding the proposed device and will not address bench or clinical data that you have already collected.*

*If you plan to include literature articles in this section, please limit them to those that are directly relevant to the questions or issues you are seeking feedback on. Additional articles may be included in any future marketing application or IDE submission.*

## Completed Product Testing

*Testing may include early-stage proof-of-concept testing on prototypes (early in development) or performance testing intended to support device clearance/approval (later in development).*

***Performance Testing***

*A summary of performance testing may include the following:*

* *bench testing (such as biocompatibility, mechanical, electrical safety, electromagnetic compatibility (EMC), wireless compatibility, magnetic resonance (MR) compatibility, or software, and comparison to the predicate device)*
* *animal studies (in vivo and histopathology)*
* *clinical studies*

*Clearly distinguish between testing that has already been conducted and testing you plan to conduct in the future (Sections 10.2 and 10.3).*

***Test Report Summary***

*For each performance test, provide a concise summary of the test report that may include the following:*

* *identification of the objective or purpose of the test*
* *explanation of the sample size and statistical methods, as applicable*
* *summary of the test methodology, including the name and year of any recognized standard followed*
* *explanation of study endpoints*
* *explanation of study acceptance criteria*
* *results summary of key findings*
* *discussion of conclusions*

*A summary test report (rather than the full test report) is appropriate for the Pre-Sub. For information on the content and level of detail that should be included in a summary test report, please refer to the FDA guidance document “Recommended Content and Format of Test Reports for Complete Non-Clinical Bench Performance Testing in Premarket Submissions” (*[*https://www.fda.gov/downloads/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/UCM606051.pdf*](https://www.fda.gov/downloads/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/UCM606051.pdf)*).*

***Test Requirements and Standards***

*If applicable, please ensure that all required testing per relevant standards, guidance, or special controls documents are addressed.*

*Provide clear rationale for the selection of specific acceptance criteria, samples, sample size, and why these choices are appropriate for the described testing.*

*For simulated use testing, provide a figure and description of your simulated use model. Ensure you explain why you believe your model appropriately challenges your device (i.e. both why it models an appropriately challenging clinical anatomy and imposes the appropriate forces and/or torques on the device).*

*Provide a discussion of any deviations from the planned test protocol or any unusual test results. Provide an explanation why these results are not concerning or how they were addressed (e.g., design modifications, additional testing to show the change helped, retraining of manufacturers, etc.).*

*Ensure consistent terminology for each device component and test throughout the submission.*

*As a reminder, full test results and data do not need to be submitted in the Pre-Sub. FDA will not make a final determination regarding substantial equivalence based on the Pre-Sub. A comprehensive evaluation will occur during the review of the 510(k) submission.*

## Proposed Nonclinical Testing

*Types of nonclinical testing for which you may want to seek feedback include:*

* *the rationale for your test strategy based on your risk analysis*
* *bench testing (such as biocompatibility, mechanical, electrical safety, electromagnetic compatibility (EMC), wireless compatibility, magnetic resonance (MR) compatibility, or software)*
* *animal studies*

*If you are requesting feedback related to nonclinical testing, it is recommended to provide a concise summary of the test plan that includes:*

* *identification of the objective or purpose of the test*
* *the sample size and statistical methods*
* *summary of the test methodology, including the name and year of any recognized standard followed*
* *define the acceptance criteria for the test and provide a clear rationale for their selection*

## Proposed Clinical Testing

*The most common reason for submitting a Pre-Sub for an IDE is to seek FDA guidance on major elements of a clinical trial design, including:*

* *target patient population*
* *sample size*
* *type of control*
* *statistical analysis plan*
* *study endpoints*
* *length and type of follow-up*

*If seeking feedback on clinical trial design, it is recommended to submit at least an outline of the proposed clinical trial design. For more specific feedback, you may need to provide additional details, such as a complete statistical analysis plan or other protocol components.*

*If the Pre-Sub is for a nonsignificant risk device, IDE exempt device, or a study you plan to conduct outside the US (OUS), you may submit the entire protocol.*

# Specific Questions

*The Pre-Sub should include specific, focused questions related to review issues relevant to a planned IDE or marketing application (e.g., questions regarding pre-clinical and clinical testing protocols or data requirements). These questions will help FDA and the submitter focus on issues most relevant issues to move the project forward. You may also wish to describe your perspective on the questions to help inform FDA’s review.*

*It is important to carefully consider the number of questions and the extent of feedback requested to ensure the FDA has adequate time to provide thorough responses.*

*Based on FDA’s experience, questions that lead to productive Pre-Sub interactions exhibit the following characteristics:*

* *Specificity: Questions request specific feedback on a provided proposal (e.g., an animal model is proposed, including rationale, and FDA feedback is requested on the acceptability of the animal model).*
* *Reference to Guidance: Questions cite applicable guidance documents, standards, or previous FDA feedback to provide context (e.g., referencing relevant biocompatibility standards when asking for feedback on chemical characterization testing as well as feedback FDA provided in previous Pre-Sub interactions).*
* *Clear Desired Outcome: Questions clearly articulate the desired feedback or outcome (e.g., FDA feedback is requested on clinical study endpoints, inclusion criteria, and follow up duration given that the study is intended to expand the currently approved indications for use from prescription use only to over-the-counter use).*
* *Timely: Questions are submitted at the right time in the development process to inform future device development and submission preparation (e.g., requesting feedback on proposed pre-conditioning procedures before conducting fatigue testing).*
* *Contextual Data: Questions may include limited supporting data (e.g., bench, animal, or clinical data), but only as background information to inform a specific proposal (e.g., sharing one page of preliminary clinical study results when requesting feedback on pivotal study endpoints).*
* *Avoid Overarching Requests: Questions should not ask for FDA to make decision on approval, clearance, or regulatory status of a future IDE, CW, or marketing submission (e.g., do not ask “Will an IDE that includes results from the proposed testing be approved?” or “Is my device a Class II medical device to be regulated under CFR 892.2050?”).*
* *Avoid Study Design Requests: Questions should not ask FDA to design a study or advise on how to proceed (e.g., do not ask “What should my clinical study design be?”.*

*The following are examples of questions, provided by review topic category, expected to lead to productive Pre-Sub interactions:*

*Regulatory Strategy Questions*

* *Is the proposed regulatory pathway (specify name of regulatory pathway) acceptable?*
* *Based on the regulatory strategy and information provided, does the FDA agree that additional clinical data is not needed to support a future 510(k) submission?*

*Indications for Use/Intended Use Questions*

* *Is the proposed over-the-counter labeling of the described device acceptable to proceed with a future marketing application?*
* *Does FDA agree with the proposed definition of osteoarthritis provided in the draft indications for use statement?*
* *Does FDA agree with the proposed size range offered for the new device, based on the intended use?*

*Clinical Study Questions*

* *Does the FDA agree that the proposed clinical study design is appropriate to demonstrate the device's safety and efficacy for the intended indications?*
* *Does the FDA find the statistical methods and sample size calculation appropriate for ensuring the validity of the study results?*

*Labeling Questions*

* *Based on the proposed labeling, does the FDA find the device’s handling, storage, and disposal instructions adequate for ensuring safety and effectiveness?*
* *Does the FDA agree with the labeling approach for device performance under specific environmental conditions (e.g., temperature, humidity) based on the available data?*

*Reprocessing, Sterilization & Shelf Life Questions*

* *Does the FDA agree that the proposed reprocessing validation studies adequately support the device’s re-use labeling for safety and efficacy?*
* *Does the FDA agree with the proposed criteria for monitoring and validating the effectiveness of the reprocessing methods used for this device?*
* *Does the FDA agree with the proposed sterilization methods for the device, as outlined in our sterilization validation studies?*
* *Based on the provided stability data, does the FDA agree with the proposed shelf life for the device?*

*Benchtop Performance Testing Questions*

* *Does the FDA agree that the selected test methods and acceptance criteria for benchtop performance testing are appropriate for the device’s intended use?*
* *Does the FDA agree that the testing environment and setup for benchtop performance testing are adequate to simulate real-world conditions?*
* *Does the FDA agree that the benchtop performance testing supports the device’s safety and effectiveness based on the provided data?*

*Animal Study Questions*

* *Does the FDA agree that the proposed animal model is appropriate for the proposed intended use?*
* *Does the FDA agree that the proposed animal study endpoints and follow-up schedule are appropriate?*
* *Does the FDA agree that the animal study protocol adequately addresses potential risks and safety concerns?*
* *Does the FDA agree that our alternative approach to an animal study is appropriate?*
* *Does the FDA agree that the proposed animal study is designed to provide a sufficient assessment of the local tissue and systemic response?*

*Biocompatibility Questions*

* *Does the FDA agree that the proposed biocompatibility testing plan is sufficient to support the device’s safety for its intended use?*
* *Does the FDA agree that the selected biocompatibility tests are appropriate for the device’s materials and intended contact duration?*
* *Does the FDA agree that the proposed biocompatibility testing meets the requirements of ISO 10993 or other relevant standards?*
* *Does the FDA agree that the proposed testing adequately evaluates the device’s potential for cytotoxicity, sensitization, and irritation?*

*Software/Firmware Questions*

* *Does the FDA agree that the proposed software development and validation process is sufficient to ensure the device's safety and performance?*
* *Does the FDA agree that the proposed software testing strategy (e.g., verification, validation, and cybersecurity testing) is adequate for the device?*
* *Does the FDA agree that the proposed strategy for firmware updates and controls is adequate for maintaining device safety and functionality post-market?*

*Human Factors Questions*

* *Does the FDA agree that the proposed human factors study design appropriately addresses the device’s intended user population and use environment?*
* *Does the FDA agree that the proposed human factors testing includes appropriate usability testing scenarios to evaluate potential risks during real-world use?*

# References