

GUIDANCE ON ASSESSING RISK FOR STUDIES INVOLVING MEDICAL DEVICES, INCLUDING SOFTWARE APPS

This guidance will assist IRB members and researchers in identifying “medical devices”, as defined by the Food and Drug Administration (FDA), and determining the risk level for the device. Research that involves a medical device, it will be subject to FDA regulations and may require FDA approval before the study commences. In addition, IRB approval is required before using a medical device in human subject research.

A medical device is defined broadly by the FDA to include anything from crutches to magnetic resonance imaging (MRI) machines, software apps used on smartphones or tablets, and in vitro diagnostic devices (e.g., blood sugar and cholesterol tests, pregnancy tests, etc.).

Software or apps may also be considered a medical device when, it is intended to be used to diagnose a condition, provide medical advice to mitigate a condition, monitor treatments, etc. Software or apps intended “for maintaining or encouraging a healthy lifestyle and that is unrelated to the diagnosis, cure, mitigation, prevention, or treatment of a disease or condition” is not a medical device per the FDA. However, research using such software may still require IRB review.

The Food and Drug Administration (FDA) defines a “medical device” as an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent, or another similar or related article, including any component, part, or accessory, which is:

- (1) *recognized in the official [National Formulary](#), or the [United States Pharmacopeia](#), or any supplement to them,*
- (2) *intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease, in man or other animals, or*
- (3) *intended to affect the structure or any function of the body which does not achieve its primary intended purposes through chemical action within or on the body and which is not dependent upon being metabolized for the achievement of its primary intended purposes.*

There are three types of FDA-regulated device studies. They involve:

1. Exempt devices (i.e., devices that are exempt from the regulations on Investigational Device Exemption (IDE))
2. Devices that do not pose a significant risk or are non-significant risk (NSR) and therefore do not require an investigational Device Exemption (IDE)
3. Devices that pose a significant risk (SR) to participants and therefore require an IDE to be approved by the FDA before they are used in research.

Currently, Chapman IRB researchers may engage in studies on campus involving exempt devices and devices that the IRB or the FDA designates as non-significant risk (NSR). Studies using devices deemed significant risk (SR) may not be conducted on campus. However, such studies may be undertaken at other institutions where Chapman University agrees (e.g., reliance agreement), per Chapman’s HRPP.

If the FDA has not already made an SR/NSR designation, the full IRB must make the determination using the criteria described below. Contact the IRB Chair(s) or the Assistant Vice President of Research Integrity if you believe a study would involve an SR device.

Step 1: Determine how the medical device will be used in the research and whether the research falls under FDA regulation.

If any of these three criteria apply, your study is subject to FDA regulation for investigational medical devices.

- The proposed research evaluates the safety or effectiveness of a device in research participants or their biological specimens, including using the FDA-approved device in a new way.
- The proposed research involves collecting data regarding the use of a device on research participants; such data will be submitted to, or subject to inspection by, the FDA. (This would not be common at Chapman.)
- The proposed research involves collecting data regarding the use of a device on biological specimens; such data will be submitted to, or subject to inspection by, the FDA. (This would not be common at Chapman.)
- None of the above are applicable, and therefore, the FDA regulations for research involving devices (including apps) do not apply. *As the FDA regulations are not applicable to this research, you do not need to proceed with completing this checklist. Specific considerations for research involving devices are not required.*

**If you checked one of the first three statements above, please proceed with the checklist to address the additional considerations for research involving devices.*

EXEMPT DEVICES

Note: “Exempt” means exemption from the [IDE regulations](#), distinct from an IRB determination that a study is “exempt” from human subject regulations.

Points to consider about exempt devices:

- While research may be exempt from the requirement to obtain FDA approval for an IDE, the study (as a whole) is still subject to FDA regulations.
- Expedited review procedures may be appropriate for a minimal-risk study using an exempt device that fits within the IRB’s expedited criteria.

Step 2: Is the device (including software apps) considered “exempt” under the FDA regulations?

If the device in the study meets any of these criteria, it is considered exempt from the FDA’s IDE regulations.

- The device is FDA approved, the device is being used in accordance with its FDA approval, and it was never regulated as a drug.
- The research involves a diagnostic device where testing is non-invasive. The device will not introduce energy into the participant or be used to diagnose a condition without confirmation by another medically established product or procedure. *(Blood sampling that involves puncturing a vein is considered non-invasive.)*

- The device is undergoing consumer preference testing, or the research involves testing two or more approved devices currently available for purchase, and the purpose of the testing is **not** to determine the safety or effectiveness of the device. Additionally, the research involving the device will not put participants at risk.
- None of the above applies; therefore, the device is not exempt from FDA regulation.

**If you checked one of the first three statements above, you do not need to proceed with completing this checklist. Further consideration of risks in using the device is not required.*

SIGNIFICANT-RISK AND NON-SIGNIFICANT-RISK DEVICES

INVESTIGATIONAL DEVICE EXEMPTION (IDE)

An IDE allows the investigational device to be used in a clinical study to collect safety and effectiveness data required to support a Premarket Approval (PMA) application or a Premarket Notification (PMN), or 510(k) submission to the FDA. Submission of the PMA or PMN to the FDA may be made after safety and efficacy data has been gathered through research conducted under an IDE.

- Research with devices of significant risk (SR) must have an FDA-approved IDE and be approved by an IRB before the study begins.
- The IRB must approve research with devices of nonsignificant risk (NSR) before the study can begin. NSR studies do not require an IDE.

Certain devices that are Not Significant Risk (NSR) may be exempt (relieved) from the requirement to obtain the IDE application approval but are still subject to abbreviated requirements under the FDA regulations.

FDA RISK CLASSIFICATION - SIGNIFICANT RISK OR NON-SIGNIFICANT RISK

Step 3: FDA assessment of the risk level of the device.

When the FDA makes an SR/NSR determination, the IRB must accept that decision for purposes of human subject research, even if the sponsor or another person or organization has concluded something else.

- If the FDA has made an NSR risk level determination, the PI should provide the IRB with documentation stating this information.
- If the FDA has determined that the research involves an SR device, the study cannot be carried out on campus per Chapman's HRPP. Instead, the PI should identify a collaborator at an institution with suitable facilities, expertise, and support to carry out the study. The Chapman IRB will execute [a reliance agreement](#) with the collaborating institution to enable Chapman researchers to work with the resulting data on campus. Chapman University will also find an external IRB to review the study if the collaborating institution does not review the IRB application.

If the FDA has not made a determination, the IRB must assess the risk level at a convened meeting, regardless of whether the sponsor or any other person or organization has made a determination. *Please get in touch with the IRB Administrator and request that your study be placed on the agenda for an upcoming meeting.*

IRB RISK CLASSIFICATION AND REVIEW OF STUDIES INVOLVING MEDICAL DEVICES

Step 4: IRB risk determination and review of the study

SR devices are defined below. An NSR device is one that does not meet the definition of an SR device.

An SR device is defined as:

- *A device that is intended as an implant (e.g., pacemaker) and presents a potential for serious risk to the health, safety, or welfare of a subject;*
- *A device that is purported or represented to be for use supporting or sustaining human life and presents a potential for serious risk to the health, safety, or welfare of a subject;*
- *A device that is for the use of substantial importance in diagnosing, curing, mitigating, or treating a disease or otherwise preventing impairment of human health and presents a potential for serious risk to the health, safety, or welfare of a subject; or*
- *A device that otherwise presents a potential for serious risk to a subject's health, safety, or welfare.*

For the IRB to make an informed decision about the risk level, the investigator should submit to the IRB a complete description of the medical device, reports of prior investigations conducted with the device, the proposed investigational plan, the characteristics of the participant population, and the sponsor's (the developer of the device or the IDE holder) initial risk assessment along with the rationale of the evaluation. The risk determination must be documented in the IRB minutes and conveyed to the project PI.

The IRB's risk determination should be based on the following:

1. The proposed use of the device in an investigation and not on the device alone.
2. The nature of the harm that may result from using the device (see NSR/SR device definition for assistance with this determination).
3. If the participants need to undergo additional procedures as part of the research, the IRB should consider the potential harm the procedure could cause and the potential harm caused by the device.

If the IRB determines that the research involves an NSR device, IRB approval for the study will be for one year. The IRB may determine that subsequent reviews may be done via expedited review procedures as long as the study remains minimal risk and no additional risks have been identified. Such determination will be documented in the approval letter. Investigators must attest to complying with the FDA requirements for record retention and reports. They must also agree not to market or promote the device. Once the IRB grants initial approval, the study may begin without submission of an IDE application to the FDA.

If the IRB determines the device to be SR, the IRB will inform the PI of the decision. When the IRB disagrees with the sponsor and concludes that the device should be considered an SR device, the IRB may notify the sponsor of the IRB decision.

As noted above, SR device research cannot be conducted on campus. Therefore, the PI should identify a collaborator at an institution with suitable facilities, expertise, and support to carry out the study.

REPORTING ADVERSE EVENTS TO THE IRB AND THE SPONSOR

PIs are always responsible for [reporting incidents](#) related to human subject research. Additional reporting is required to the FDA where there is an IDE. The investigational device exemption (IDE) regulations define an unanticipated adverse device effect (UADE) as “any serious adverse effect on health or safety or any life-threatening problem or death caused by, or associated with a device, if that effect, problem, or death was not previously identified in nature, severity, or degree of incidence in the investigational plan or application (including a supplementary plan or application), or any other unanticipated serious problem associated with a device that relates to the rights, safety, or welfare of subjects” (21 CFR 812.3(s)).

UADEs must be reported by the investigator to the sponsor of the medical device and the reviewing IRB, as described below:

- For device studies, investigators are required to submit a report of a UADE to the sponsor and the reviewing IRB as soon as possible, but in no event later than ten working days after the investigator first learns of the event (§ 812.150(a)(1)).
- Sponsors must immediately conduct an evaluation of a UADE and must report the results of the assessment to FDA, all reviewing IRBs, and participating investigators within ten working days after the sponsor first receives notice of the effect (§§ 812.46(b), 812.150(b)(1)). The IDE regulations, therefore, require sponsors to submit reports to IRBs consistent with the recommendations made above for reporting unanticipated problems under the IND regulations.

References:

- [Software as a Medical Device \(SaMD\): Key definitions and Guidance for Industry and Food and Drug Administration Staff \(fda.gov\)](#)
- [US FDA Artificial Intelligence and Machine Learning Discussion Paper](#)
- [General Wellness: Policy for Low-Risk Devices - Guidance for Industry and Food and Drug Administration Staff \(fda.gov\)](#)
- [De Novo Classification Request | FDA](#)
- [Classify Your Medical Device | FDA](#)
- [How to Determine if Your Product is a Medical Device | FDA](#)
- [Adverse Event Reporting to IRBs - Improving Human Subject Protection, Guidance Clinical Investigators, Sponsors, and IRBs \(fda.gov\)](#)
- [Humanitarian Device Exemption \(HDE\) Program - Guidance for Industry and Food and Drug Administration Staff \(fda.gov\)](#)
- [eCFR :: 21 CFR 812.3 -- Definitions.](#)

SUMMARY CHART

	FDA route to market	IRB Approval Required?	NSR/SR Determination needs confirmation from the IRB?	Chapman IRB Initial Review Procedure	Annual Review Required?
Exempt Device Studies	No clearance nor approval needed	Yes	No	Expedited review possible if study meets expedited review categories and involves minimal risk, otherwise, full board review	Yes, Full Board, or Expedited if minimal risk and approved by the IRB
NSR Device Studies	4 possible routes: 1. Premarket Notification or "510k" 2. PreMarket Approval 3. De Novo Request 4. Humanitarian Device Exemption	Yes	Yes, but only if FDA has not made the risk determination	Full board review	Yes, Full Board, or Expedited if minimal risk and approved by the IRB
SR Device Studies	Same as NSR devices	Yes	Yes, but only if FDA has not made the risk determination	N/A. Research involving SR devices may not be carried out at Chapman; collaborations with other institutions may be possible.	N/A Chapman must refer research to an external IRB/performance site

Revision history:

14Sep2023: original publication date