

Tissue and Body Fluids

Studies involving fresh/frozen tissue, blood or body fluids obtained from humans and/or vertebrates may contain microorganisms and have the potential of causing disease and must receive the same considerations as potentially hazardous biological agents.

Prohibited Studies:

1. Any study involving the collection and examination of body fluids that may contain biological agents belonging to Biosafety levels (BSL) above a rating of 2 (BSL-2+, BSL-3, BSL-4) is prohibited.

Rules:

1. Research involving human and/or vertebrate animal established cell lines and tissue culture collections (e.g., obtained from the American Type Culture Collection) must be considered a BSL-1 or BSL-2 level organism as indicated by source information and treated accordingly.
2. If tissues are obtained from an animal that was euthanized for a purpose other than the student's project, it may be considered a tissue study.
 1. Use of tissues obtained from research conducted at a Regulated Research Institution (RRI) requires a copy of the Institutional Animal Care and Use Committee (IACUC) certification with the name of the research institution, the title of the study, the IACUC approval number and date of IACUC approval.
 2. Use of tissues obtained from agricultural/ aquacultural studies require prior SRC approval.
3. If the animal was euthanized solely for the student's project, the study must be considered a vertebrate animal project and is subject to the vertebrate animal rules. (See vertebrate animal rules.)
4. The culturing of samples from fresh/frozen tissues or body fluids or meat and meat by-products obtained from food stores, restaurants, or packing houses must be considered biosafety Level 1 studies and must be conducted in a BSL-1 laboratory or higher.
5. If body fluids or fresh/frozen tissues (including meat, meat by-products) are NOT obtained from food stores, restaurants, or packing houses:
 1. Collection must be made with appropriate precautions for safety addressed for the specific tissue/fluid.
 2. Examination and study must be conducted as BSL-2 studies in a BSL-2 laboratory under the supervision of a Qualified Scientist.
6. Human breast milk of unknown origin, unless certified free of HIV and Hepatitis C, and domestic unpasteurized animal milk are considered BSL-2. All other breast milk is considered BSL-1.
7. Studies involving blood and/or blood products:
 1. If involving human blood, research must be considered BSL-2 and done under the supervision of a Qualified Scientist. If only the blood of the student researcher, it is exempt from this requirement.
 2. If involving wild animal blood, research must be considered BSL-2 and done under the supervision of a Qualified Scientist.
 3. If involving domestic animal blood, the study may be considered a BSL-1 study.
 4. All blood must be handled in accordance with OSHA and APHIS standards and guidelines. Any tissue or instruments with the potential of containing blood-borne pathogens (e.g.

- blood, blood products, tissues that release blood when compressed, blood contaminated instruments) must be properly disposed of after experimentation.
8. Studies of human body fluids, where the sample can be identified with a specific person, must have IRB review and approval, and informed consent.
 9. A project involving a student researcher using their own body fluids (if not cultured)
 1. must receive prior SRC review and approval prior to experimentation
 2. can be considered a BSL-1 study
 3. may be conducted in a home setting
 4. must have Institutional Review Board (IRB) review if the body fluid is serving as a measure of an effect of an experimental procedure on the student researcher (e.g. student manipulates diet and takes a blood or urine sample). An example of a project not needing IRB review would be collecting urine to serve as a deer repellent.
 10. Studies involving embryonic human stem cells must be conducted in an RRI and reviewed and approved by the ESCRO (Embryonic Stem Cell Research Oversight) Committee.

2026-27 Updates:

Under Rules, #7 was re-arranged for clarity:

- 7. Studies involving blood and/or blood products:
 - a. If involving human blood, research must be considered BSL-2 and done under the supervision of a Qualified Scientist. If only the blood of the student researcher, it is exempt from this requirement.
 - b. If involving wild animal blood, research must be considered BSL-2 and done under the supervision of a Qualified Scientist.
 - c. If involving domestic animal blood, the study may be considered a BSL-1 study.
 - d. All blood must be handled in accordance with OSHA and APHIS standards and guidelines. Any

tissue or instruments with the potential of containing blood-borne pathogens (e.g. blood, blood products, tissues that release blood when compressed, blood contaminated instruments) must be properly disposed of after experimentation. Studies of human body fluids, where the sample can be identified with a specific person, must have IRB review and approval, and informed consent.

Documentation and Approval:

1. Student researchers must have a Research Plan that includes all of the standard elements as well as the following areas specific to tissue research:
 1. Provide the source and/or catalog number of the tissue/organisms and describe the BSL assessment process and BSL determination.

2. Detail safety precautions and discuss methods of disposal.
2. The source and/or catalog number of the tissue/organism must be identified in the Research Plan and on forms 6A and 6B, even if the project is exempt from IRB approval. If catalog number is unavailable, student can provide a receipt and/or letter from mentor regarding the origin of the item(s).
 1. If the tissue is obtained from a private/non- commercial source (public or private laboratory, museum, etc.), documentation from the supplier must be uploaded in the application, including IACUC approvals for the original study. This includes samples from blood banks or human breast milk.
 2. If obtained from mentor's study or another lab's study, upload original study's IACUC approval OR reference to the original study's publication is required.
3. Prior review and approval is required for the use of human or vertebrate fresh/frozen tissues, blood, or body fluids.
 1. An affiliated fair SRC, an IBC or an IACUC must approve all research before experimentation begins.
 2. The initial risk assessment determined by the student researcher and adults supervising the project must be confirmed by the SRC, IACUC, or Institutional Biosafety Committee (IBC).
4. Any proposed changes in the Research Plan/Project Summary by the student after initial local or affiliated fair SRC approval must undergo subsequent SRC or IBC review and approval before such changes are made and before experimentation resumes.
5. The following forms are required:
 1. Checklist for Adult Sponsor (1)
 2. Student Checklist (1A)
 3. Research Plan/Project Addendum
 4. Approval Form (1B)
 5. Student Support Disclosure Form (2A)
 6. Regulated Research Institution Form (2C) — when applicable
 7. Qualified Scientist (2B), when applicable
 8. Risk Assessment (3), when applicable
 9. PHBA Risk Assessment Form (6A)
 10. Human and Vertebrate Animal Tissue Form (6B)
 11. The BSL-2 Checklist when a BSL-2 facility is used that is not at a Regulated Research Institution.

Exempt Studies (No SRC Pre-Approval Required):

1. The following types of tissue do not need to be treated as potentially hazardous biological agents:
 1. Plant tissue (except those known to be toxic or hazardous)
 2. Plant and vertebrate established cell lines and tissue culture collections (e.g., obtained from the American Type Culture Collection). The source and/ or catalog number of the cultures must be identified in the Research Plan/Project Summary and on Form 3.
 3. Human capillary/blood collection (i.e. finger stick) of the student researcher to themselves; blood collection from any other human participants must be reviewed and approved by an IRB

4. Collection and/or study without culturing of eggs, pasteurized milk or fresh/frozen meat and meat by-products obtained from food stores, restaurants, or packing houses.
 5. Hair, hooves, nails and feathers
 6. Teeth that have been sterilized to kill any blood-borne pathogen that may be present
 7. Fossilized tissue or archeological specimens
2. Projects utilizing only data or images are exempt from IACUC pre-approval ONLY if the originating study is published in a peer-reviewed journal or the data is available in a publicly available database. In this case, the student must provide a reference to the original study OR link to the database.
 3. If the data or images were obtained from another scientist (mentor or not a mentor) or source AND the research is not yet published (not publicly available), then IACUC approval of the original study must be provided by the ISEF participant.

2026-27 Updates:

Under Exempt Tissues, b. and d. were edited for clarity:

- b. Plant and ~~vertebrate non-primate~~ established cell lines and tissue culture collections (e.g., obtained from the American Type Culture Collection). The source and/or catalog number of the cultures must be identified in the Research Plan/Project Summary and on ~~forms 6A and 6B~~ Form 3.
- ~~Collection and/or study without culturing of eggs, pasteurized milk or~~ fresh/frozen meat and meat by-products obtained from food stores, restaurants, or packing houses. ~~and eggs or pasteurized milk~~