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| **INTRODUCTION** |
| This SOP applies to HUMAN GROSS ANATOMY laboratories. The labs are operated through the NSU College of Medical Sciences.  Nova Southeastern University is a partner with the Anatomical Board of the State of Florida in it’s mission to “manage body donor resources in a dignified, respectful and professional manner, and thereby ensure that every health  professional utilizing these resources is well-educated to enhance the health and well-being of all people.” The specimens contained within this lab are anatomical gifts donated by citizens for medical education and research.  Anatomical gifts housed and studied at NSU are subject to inventory and tracking procedures from donation to return to the family or cremation.  Gross Anatomy Teaching Laboratories are rated as Risk Group 2, meaning that there is a moderate potential hazard to personnel and the environment. Therefore, all participants in the laboratory observe safety precautions and security regulations as described below and in the State Anatomical Board Gross Anatomy Teaching Lab Procedures.  Required Training: Entrants to the laboratory are required to have taken all training on the potential hazards associated with the work involved, the necessary precautions to prevent exposures, and the exposure evaluation procedures deemed necessary by the Environmental Health and Safety office at NSU. Such training may include, but is not limited to blood-borne pathogen training (required annually) and Laboratory Safety Training. Laboratory safety procedures will be provided in writing AND verbally communicated to every incoming group of students or trainees prior to the first gross anatomy laboratory session.  Special at-risk individuals: Persons with medical conditions (allergies, pregnancy) or who are at increased risk of acquiring infection should undergo risk evaluation before entering the laboratory. |
| **GENERAL LAB RULES** |
| 1. No eating, drinking, gum chewing, smoking, handling contact lenses, or applying cosmetics (including lip balm) in the laboratory. Contact lenses: the potential hazards of wearing contact lenses while in the laboratory should be made clear to all those who have access to anatomical specimens. The wearing of spectacles is recommended. 2. Keep doors closed at all times to ensure correct airflow. 3. Persons shall wear disposable gown, long pants, safety glasses or goggles and appropriate gloves when working with hazardous chemicals. 4. Personal belongings shall be stored in lockers provided outside the lab and not in the lab. 5. Closed toed shoes (no sandals or open-toed shoes) 6. Lab users must comply with NSU dress code beneath protective gear. Scrubs are the most appropriate garments for the anatomy labs. 7. Additional barriers (safety glasses, masks, face shields) should be added when appropriate for use against anticipated splashes or splatters to the face. 8. Soiled gowns: These garments are not to be worn outside the laboratory area. 9. All disposable protective clothing is disposed of within the laboratory; it should never be taken home. 10. Gloves are to be worn when hands may contact potentially infectious materials, contaminated surfaces or equipment. Gloves are to be disposed of when overtly contaminated, and removed when work with cadaveric materials is completed or when the integrity of the glove is compromised. 11. Disposable gloves are not to be washed, reused, or used for touching "clean" surfaces, and should not be worn outside the lab. Hands must be washed thoroughly with soap and water following removal of gloves. Do not touch electronics, door knobs, models, xrays etc. with soiled gloves. 12. Mouth pipetting is prohibited; mechanical pipetting devices are to be used at all times. 13. All procedures are to be performed carefully to minimize the creation of splashes or aerosols. 14. Wash hands in the designated hand wash sinks:     * after handling chemicals materials,     * after removing gloves, and     * before leaving the laboratory. 15. Attire: At a minimum, the following attire must be worn at all times while work is going on in the lab:     * Disposable gown     * Scrubs/long pants     * Disposable gloves     * Closed toed shoes (no sandals or open-toed shoes) |
| **1. Human Gross Anatomy Lab Specific Rules.**   1. **Access to the lab is restricted to faculty, students actively enrolled in anatomy class and Anatomy Fellows/ TAs only.** 2. Pledge of Respect: All individuals accessing the lab must promise to follow the rules governing use of Human cadavers in teaching and research, and sign a “Pledge of Respect” document acknowledging these requirements. Forms will be administered by the faculty instructor of the course; the signed and dated form will be kept on file for the duration of the course. In addition, all course directors will ensure that faculty members teaching in their courses have completed a Pledge of Respect form within the previous 12 months. This will ensure that ALL staff is aware of any new regulations to be observed when handing human remains. 3. **All lab materials must remain in the lab at all times**. At no time may any lab materials leave the lab for any reason without permission of the lab staff or faculty member (including any cadaveric parts, osteology samples, lab models, instruments, tools and desk copies of textbooks). 4. **Photography is strictly prohibited in the lab**. Taking picture of lab lists, announcements, white board notes etc is also strictly prohibited in the lab. 5. **All eating, drinking (including water, coffee and soft drinks) and gum chewing are prohibited in the lab at all times (24 hours a day, 7 days a week)**. Food and drink may not be stored in the lab. 6. **A high degree of precaution must always be taken with any contaminated sharp items, including needles and scalpels**. 7. If a blade becomes detached from the scalpel handle during a dissection, notify all members of the dissection team immediately, stop and attempt to retrieve the blade using forceps. If this is unsuccessful, close the body bag / dissection table, alert faculty and place a warning notice on the specimen. 8. Do not wave or point with scalpels or other sharp objects. Always keep scalpels in plain view. 9. Never remove body tissues from the laboratory. 10. Never remove the State of Florida Anatomical Board ID tags from the specimen. 11. Place disposable materials in the appropriate containers. 12. All dissection procedures are to be performed carefully to minimize the creation of splashes or aerosols. 13. Broken glassware must not be handled directly by hand, but must be removed by mechanical means such as a brush and dustpan, tongs or forceps. Place in sharps waste containers for disposal. 14. Spills and accidents that result in overt exposures to infectious materials (body fluids) are to be reported immediately to the laboratory staff. 15. All wastes are to be placed in the appropriate containers for proper disposal. 16. Never pour chemicals down a drain. 17. If mold is detected on the specimen, notify faculty, disinfect instruments and post a DO NOT USE sign on the closed body container. 18. **Smoking and the use of smokeless tobacco products are prohibited throughout the building.**   **2. Student Responsibility after each Laboratory Session**   1. Replace parts in correct anatomical position, replace skin and spray cadaver with embalming/wetting fluid to preserve specimen. 2. Close body container. 3. Clean dissection table and place any tissue removed from the cadaver in the appropriate receptacle. 4. Clean instruments and replace appropriately. 5. Clean area around dissection table, especially the floor to prevent accidents. 6. Remove soiled gloves and dispose of them in the appropriate containers. 7. Wash hands in the designated sinks after removing gloves and before exiting the laboratory. 8. Erase non-essential material from white / black boards. 9. Last person to leave laboratory must ensure doors are secured and lights are turned off. 10. It is the responsibility of the student to open and close the tables after normal business hours. Gross anatomy lab follows the HPD library hours.   **3. Rules for Anatomy Fellows or Teaching Assistants (TAs).**   1. TAs are to be available to answer student questions. This means that TAs must be prepared and not doing their own work as long as at least one student is in the lab. 2. TAs should assist students with clean up of the lab at the end of the period, including tables, counters, etc. 3. Always abide by the rules contained in this document. |

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| **PROPER USE OF DISSECTION TABLES** |
| 1. **Do NOT push or move the dissection tables** or unlock the table wheels for any reason at any time. Downdraft tables are attached to wall ductwork to remove volatile embalming vapors and should not be moved for any reason. 2. **Dissection tables can be opened by one person but are best locked in place under the table with two people.**  Grasp the central handle of the table cover and pull back to open the table. If possible, get a nearby student to help latch the table cover on one side. Working together with a neighbor, swing the cover under the table and latch the covers in place (the proper technique will be demonstrated during lab orientation). Repeat the process when opening the cover on the opposite side. 3. **Do NOT place tissue removed from the body on the table surface.** The table surface contains many perforated holes elevated above a collecting trough. These holes are used to remove potentially harmful vapors and fluids. When removing tissue from the body (i.e. skin, fat, fascia etc.) do not simply lay it on the surface where it can clog these holes and interfere with downdraft. Each dissection table has a white round plastic container for human waste disposal. This container is for ALL human tissues removed from the body (skin, fascia, fat etc.) and is emptied into the tall gray receptacle lined with a red bag located at each table. These containers all have the same corresponding numbers. Do not place anything but human tissue in these containers, gloves, paper towels, sharps and anything non human causes problems for the mortuary or Anatomical Board during the cremation process. 4. **I**t is recognized that certain human anatomical specimens are of insufficient mass or substance to be readily identifiable as separate specimens, which can be accounted for in a systematic fashion by these or any other reasonable procedures. In addition, some specimens, such as individual teeth, are handled by professional societies (e.g., Dental Society) in a manner that calls for their exemption from these Policies and Procedures. Other exemptions include tissues of insufficient structure of mass to be identified as separate specimens (e.g. adipose tissues, tendons, or small quantities of tissue lost in normal dissection), tissues that are usually discarded by society such as hair cuttings, nail clippings, and body fluids. 5. **Desiccation prevention**. To prevent a skilled dissection from being ruined by unwanted drying, follow these required steps. First use the watering can to wet dissected surfaces of the body (it is not necessary to wet or wrap areas that have not yet been dissected). Where possible close the dissected area with skin. Then before closing the tables, cover these surfaces with a white terry cloth saturated with wetting solution to prevent desiccation. When viewing the bodies dissected by other groups in the afternoon, at night or on weekends; REMEMBER to always cover the cadaver **IMMEDIATELY** after viewing to prevent desiccation. Wetting solution is located at the back of each lab. 6. **Do NOT leave any instruments or books inside the closed table.** Do not leave any books (i.e. - dissector or atlas), paper towels, instruments or gloves on cadaver or table surface when finished and close the covers. . The group will be held responsible to keep the surface of the table and assigned work area as clean as possible at all times. When closing the table, only the reassembled cadaver; should remain inside the table. Everything else should be removed. |

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| **HEALTH HAZARDS** |
| See FORMALDEHYDE Hazard Communication Program for information on health hazards of this chemical.  Be careful to avoid self-inflicted wounds at all times! Scalpels are sharp! Use the hemostat in dissection kits to add or remove a scalpel blade – do not use fingers. |
| **EXPOSURE MONITORING** |
| * NSU EH&S will periodically monitor faculty and the room to determine exposure to formaldehyde. * NSU EH&S will post sample results. * Regulated areas where the concentration of airborne formaldehyde exceeds either the Time   Weighted Average (TWA) or the Short Term Exposure Limit (STEL) will be posted at all entrances and access ways with signs bearing the following information:  **DANGER FORMALDEHYDE IRRITANT AND POTENTIAL CANCER HAZARD**  **AUTHORIZED PERSONNEL ONLY** |

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| **PERSONAL PROTECTIVE EQUIPMENT** |
| Students and staff must comply with NSU dress code beneath proactive gear. Scrubs are the most appropriate garments in the anatomy lab.  EYE PROTECTION   * Safety glasses, goggles or face shields shall be worn during operations in which fluids, aerosols or solids might contact the eyes (e.g., through vapors or splashes of solution). * Ordinary (street) prescription glasses do not provide adequate protection. Adequate safety glasses must meet the requirements of the Practice for Occupational Education Eye and Face Protection (ANSI Z87.1-1989) and must be equipped with side shields. * **ANYTIME YOU TOUCH A HUMAN CADAVER** - **Protective clothing and gloves are required.** Put on disposable gown and nitrile gloves BEFORE handling the group dissector, atlas, instruments or bones and BEFORE opening the TABLE COVER.   DISPOSABLE GOWNS   * Disposable, solid front gowns and nitrile gloves must be worn by everyone and at all times when dissecting a cadaver (TAs AND STAFF ALIKE - **NO EXCEPTIONS**). * Gowns and gloves are provided for the TAs and Staff. * Students shall purchase gowns from the bookstore. * Used gowns shall be disposed of in designated trash receptacle.   GLOVES   * Nitrile gloves must be worn when handling specimens or dissecting. * When finished dissecting, place used gloves in the floor trash can before leaving group work area. * Observation a dissection may take place without gloves but direct skin exposure to human tissues or embalming fluids (i.e. by touching the cadaver or dissection instruments) must be prevented at all times.   RESPIRATOR   * In the unlikely event that exposures are anticipated to exceed the OSHA Short Term Exposure Level or Permissible Exposure Level, respiratory protection will also required. Respirators will be selected and used according to criteria from Table 1, 29CFR Part 1910.1048 and the University’s Respiratory Protection Program.   **What to wear and what NOT to wear.**   * Contaminated protective clothing and gloves may not be worn outside the lab. These rules apply both during scheduled class hours and when using the lab after class. * Clothing and shoes in the lab should be comfortable but also protective. Open toe shoes may not be worn at any time. Shoes that have good cushioning and arch support are recommended for extended periods of standing. If shoes have black rubber soles be sure they do not mark the floor. Do not wear contact lenses in the lab. Gloves are required when handling specimens from the containers and while at the dissecting tables examining the cadavers.   **What to wear:** comfortable clothing (scrubs) and closed toe shoes that do not mark the floor.  **What NOT to wear:** open toe shoes and contact lenses. |
| **WORK PRACTICES** |
| **Proper use of specimens:**  Specimens of segments have been harvested to facilitate learning and are often used in practical examinations. Gloves are needed to handle the specimens. Be sure to handle the specimens with care. When finished using a specimen – return it to the appropriate container or tank.  **Proper Use of Osteology Specimens:**  Osteology specimens should never be removed from the lab floor and must be signed out by faculty or a designated staff member.These specimens are often fragile so be sure they do not drop and hit the floor. Plastic bone boxes may be signed out to groups of students in some cases. Please do not store these in a vehicle because the plastic will deform. |
| **ENGINEERING CONTROLS, MAINTENANCE AND INSPECTION** |
| |  |  |  | | --- | --- | --- | | **MAINTENANCE/INSPECTION REQUIREMENT** | **INTERVAL** | **ORGANIZATION RESPONSIBLE** | | Exhaust Fan | Annually | Facilities Management | | Eyewash – Laboratory | Monthly | Environmental Health & Safety | | Laboratory Air Flow | Annually | Facilities Management | | Safety Audit of Lab | Daily | Principal Investigator / Instructor | | Safety Audit of Lab | Monthly | Environmental Health &Safety |  * Upon completion of semester when the dissection tables in anatomy have held cadavers the tables will be cleaned and disinfected. * General housekeeping, cleaning and disinfecting will be conducted by the Department during the semester while the tables are in use with an appropriate disinfectant. |
| **WASTE DISPOSAL** |
| * All trash must be disposed in the appropriate container as dissected (and not just when finished). * None of the dissected tissues removed from the cadaver may be placed directly upon the tabletop (these tissues and any other objects including paper towels can obstruct table downdraft vents). * Place all of the removed tissue in the white bucket on the tabletop. The tissue is then sent for cremation with the respective cadavers. * Do **NOT** place human tissues in the floor trashcan – this trashcan is for the disposal of gloves and paper waste only. * Place all used blades in the specific sharps disposal. |
| **EMERGENCY PROCEDURES** |
| **Emergency Numbers:**   |  |  | | --- | --- | | Fire and Medical Emergencies | 911 on cell phone | | Environmental Health and Safety | 954-262-8816 | | US HealthWorks (employees) | 954-474-4403 | | Student Health (students only) | 954-262-1270 | | Poison Control | 1-800-222-1222 |     **Signage and Location of Safety Equipment:**  The following signage should be present in the laboratories indicating clear location of emergency equipment and procedures for fire and other emergencies:   * Fire extinguisher * Safety Data Sheets * First Aid Kit * Eye wash * Telephone and list of emergency telephone numbers * Fire Instructions |

**WORK PRACTICES**

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| **FIRST AID** |
| **INJURIES IN THE LABORATORY:**  If serious injury or illness occurs, dial 911. Give building and location where aid is needed, specific location with in the building and type of problem, individuals condition, sequence of events and medical history if possible. Notify Public Safety (x28999) to expedite the arrival of emergency responders.  Do not move the injured party and have someone stay with them at all times until help arrives. All injuries in the laboratory must be reported immediately to the faculty, staff or lab directors. A written report should be made and provided to EHS.  **CHEMICAL EXPSOURE**   1. In case of skin contact: Take off contaminated clothing and shoes immediately. Wash off in safety shower for at least 15 minutes. Call x911 for medical assistance and have someone notify public safety (954-262-8999). 2. In case of eye contact: Rinse thoroughly with plenty of water at eyewash for at least 15 minutes and call x911 for medical assistance and have someone notify public safety (954-262-8999). 3. If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Call x911 for medical assistance and have someone notify public safety (954-262-8999). 4. Report all accidental exposures to EHS and Human Resources (employees) or Student Health   (students).   1. Public Safety will complete the injury/illness report if there is an over-exposure to the chemical or if there is an accident involving the chemical.   **CUTS OR PUNCTURES**   1. If you cut yourself then use direct pressure immediately applied with a clean paper towel directly on the laceration. Go to a nearby sink and flush the open wound with copious amounts of water. Apply additional direct pressure until all of the bleeding has stopped. Then, apply antiseptic and a sterile pressure dressing when bleeding to the washed wound has subsided. 2. A puncture wound should instead be made to bleed immediately to better wash out the wound. Go to a nearby sink, wash the puncture and repeat the process to encourage more bleeding. After again washing with copious amounts of water, apply antiseptic to the surface of the puncture and a sterile pressure dressing. 3. Report ALL injuries and all accidental exposures to EHS and Human Resources (employees) or Student Health   (students), Lab Manager/Staff immediately.   1. Present to the Student Health Center or Emergency Room if the injury is serious or progressing badly. Additionally, all injuries or potential bio-hazard exposure (cuts, puncture, etc) should be reported to the professor, facilities coordinator, and the EHS Office. All information is kept strictly confidential. |
| **SPILL AND ACCIDENT PROCEDURES** |
| **SMALL SPILL**  When human tissue (removed fat or fascia) is accidentally spilled or an accidental spill of fluid or wetting solution on the floor around the table it should be promptly cleaned. Retrieve paper towels, clean spill area, and dispose of in trash, if the tissue is of insufficient mass or substance. Absorbent kits are available to be used as needed.  **LARGER SPILL**  Should a larger spill occur, report to the technician immediately. Isolate the area to prevent others from tracking contaminated fluids on their shoes around the room. The lab technician should retrieve the spill kit and secure the spill. Lab technician will notify EHS and report the incident. Spill kits are located in each lab. |

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| **Safety Guidelines for Anatomical Dissection**  **(POST IN LAB)**  ***Never work alone*** in the anatomical (or any other) laboratory. Accidents can occur at any time, without warning, and your best assurance for help is a partner or nearby person.  ***Proper cadaver storage*** minimizes exposure to embalming fluid and helps preserve cadavers. Turn the ventilated cadaver tables to the “open” position after opening the cover, and be sure to turn the lever to the “closed” position when finished. Failure to turn the damper to the closed position will cause the cadaver to dry out.  ***Information*** about chemicals and other materials used in the anatomical dissection is located at the Safety Data Sheet Station in the lab.  ***Odors and chemical exposures*** The odor of embalmed cadavers is unpleasant, but exposures to formaldehyde is regularly monitored and have been generally found to be below regulatory limits. If you have an existing health condition, particularly respiratory, you may be more sensitive - notify your instructor as soon as possible.  ***Personal protective equipment*** (PPE) must be worn, including disposable or dedicated washable clothing (disposable gown, scrubs), aprons (optional), nitrile gloves, and safety glasses, goggles, or a faceshield. Based upon exposure monitoring, respirators are not required.  ***Sharps*** must be handled with care, and disposed in special, puncture-resistant containers provided. Never try to retrieve a disposed object as serious injury could result.  ***Good personal hygiene habits*** are essential. Change out of your clothing as soon as you are finished working. Wash hands thoroughly with soap and water. During work, be conscious about your hands, and avoid any contact with other parts of your body, especially the face, eyes, and mouth.  ***Accidents and emergencies*** must be attended to immediately. In the event of direct skin or eye contact, flush the affected area with water for at least 15 minutes; in the event or a cut or puncture, apply first aid and wash the area with soap and water immediately. Notify your instructor for help in obtaining further medical assistance. Contact Environmental Health & Safety for assistance in cleaning up spills. |

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