Biosafety Items for a Lab Working on Human Cancer and Stem Cells

Personal Protective Equipment (PPE)

- Disposable lab coats or gowns

- Gloves (nitrile or latex)

- Face shields or safety goggles

- Shoe covers

-Closed-toed shoes

-Hair pulled back

Safety Practices

- **Hair and Nails:**

  - Tie back long hair to prevent it from dipping into chemicals or flames.
  - Keep nails short to ensure proper glove fit and avoid contamination risks.

- Clothing & Shoes:

  - Avoid loose clothing, scarves, and dangling jewelry as they can pose safety hazards.
  - Wear full coverage clothing to protect exposed skin from spills and other risks.
  - Closed-toed shoes: Protects feet from spills, broken glass, and physical hazards

Standard Hygiene Rules

- Wash hands thoroughly before entering and leaving the lab.

- Remove lab coats and gloves before exiting the lab to prevent contamination spread.

Reasons Why Long Nails Cause Problems in Lab Settings: Long nails, whether natural or artificial, pose several risks in laboratory environments, particularly in labs working with human cancer and stem cells. Here are the key reasons:

1. Risk of Glove Damage

- Long nails can tear gloves, compromising the protective barrier between the researcher and potentially hazardous materials.
- Artificial nails or sharp nail edges increase the likelihood of puncturing gloves during routine tasks.

2. Hygiene and Contamination Issues

- Long nails harbor dirt, bacteria, and pathogens in crevices that are difficult to clean effectively, even with thorough handwashing.
- Studies show that artificial nails can double the risk of harboring harmful microbes like *Staphylococcus aureus* and gram-negative bacilli compared to short, natural nails.

3. Impaired Dexterity

- Long nails can interfere with fine motor skills required for precise tasks such as pipetting, handling small tools, or operating sensitive equipment.

4. Increased Flammability Risk

- Artificial nails are highly flammable and can ignite quickly when exposed to open flames or heat sources, posing a serious hazard in labs using Bunsen burners or other heat-generating equipment.

5. Chemical Exposure Hazards

- Chemicals used in artificial nail products (e.g., ethyl methacrylate) are known irritants and can cause skin reactions or compromise lab specimens if they interact accidentally.

6. Professional Standards

- *Many labs prohibit long or artificial nails due to infection control guidelines set by organizations like the CDC and WHO. Nails longer than 0.25 inches beyond the fingertip are considered unsafe for healthcare and lab settings.*

By maintaining short nails, lab workers reduce contamination risks, ensure proper glove fit, and improve overall safety during laboratory procedures. More importantly you learn what is required in a professional setting in the medical and research fields. Having long nails might prevent you from getting a job you want.

Reasons Why Pulling Hair Back is Important in Lab Settings: Securing long hair is a critical safety measure in laboratory environments. Here are the key reasons why pulling hair back is essential:

1. Prevents Entanglement in Equipment

- Loose hair can become entangled in machinery such as centrifuges, mixers, or other rotating equipment, leading to severe injuries or accidents

2. Reduces Risk of Fire

- Hair left unsecured can catch fire when working near open flames, Bunsen burners, or heat sources.

3. Avoids Contamination

- Loose hair can drag through chemicals, biological samples, or sterile surfaces, contaminating both the experiment and the researcher.

4. Enhances Visibility and Focus

- Secured hair prevents distractions and ensures clear visibility while performing precise tasks, improving accuracy and safety.

5. Complies with Safety Protocols

- Many lab guidelines explicitly require tying back long hair to minimize hazards and maintain professional standards.

By pulling hair back securely, lab workers protect themselves and their experiments from unnecessary risks.