Chemical and biological hazards can't affect your health if they don't get in or on your body.

Avoid Hazardous Chemical and Biological Exposures by Any Route

(ref: UA Laboratory Chemical Safety Manual and UA Biosafety Manual)

Demo Session 1

1. Skin contact with hazardous chemicals and infectious biological materials must be avoided under all circumstances.

2. Do not directly smell or taste hazardous chemicals or infectious biological materials.

3. Do not eat, drink, smoke, chew gum or tobacco, store food or beverages, or apply cosmetics in areas where hazardous chemicals or infectious biological materials are used or stored.

4. Do not use glassware, containers, or utensils usually meant for the consumption of food or beverages in laboratory operations. Likewise, do not use items that are normally used for laboratory operations to prepare, consume, or store food or beverages.

5. Use an appropriate containment device (e.g., fume hood, biological safety cabinet or other exhausted enclosure) for operations which may result in the release of appreciable amounts of hazardous or odorous chemicals or infectious biological materials (see Work Practices for Chemical Fume Hoods and Proper Sash Position on Air Sentry Fume Hoods – PDF format).

Demo Session 2

6. Weigh hazardous chemical powders in a manner that minimizes exposure and contamination (see Minimizing Exposure and Contamination When Weighing Hazardous Chemical Powders – PDF format).

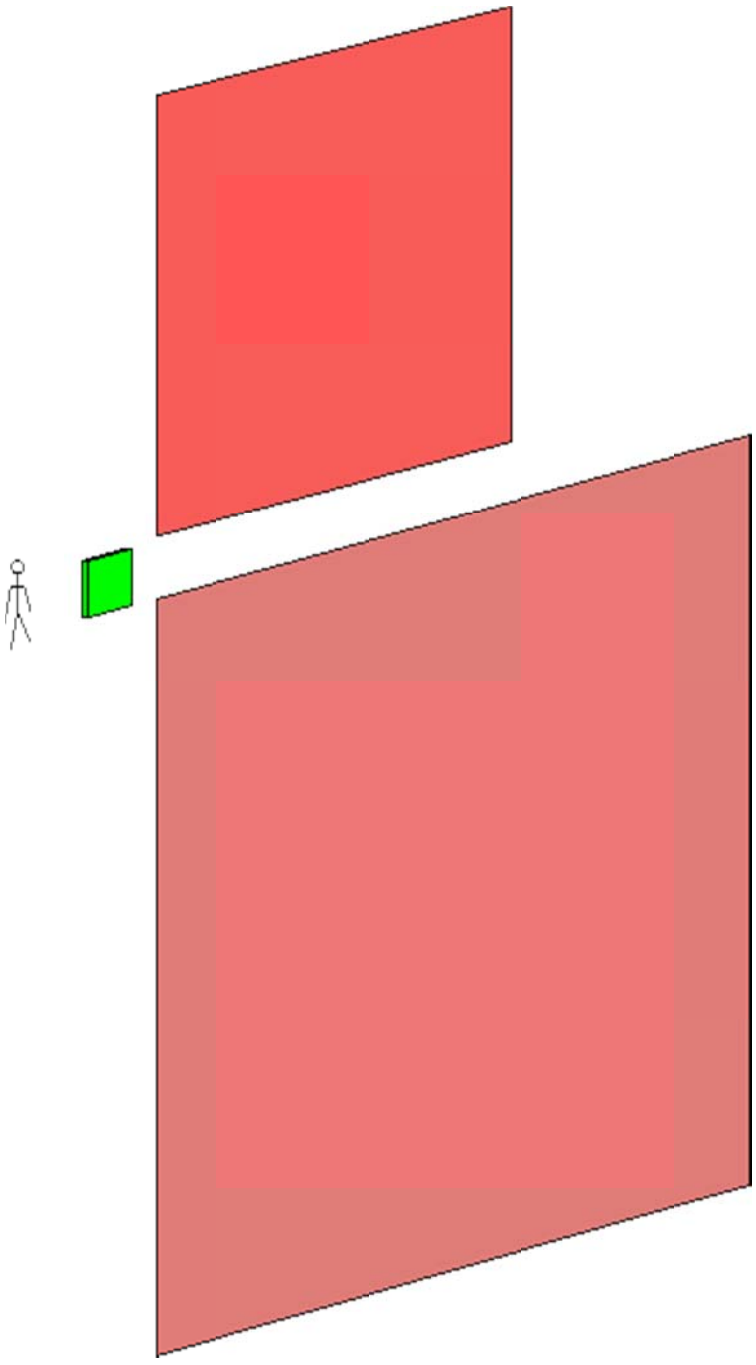
7. Wash all areas of skin potentially exposed to hazardous chemicals or infectious biological materials prior to leaving the laboratory and immediately after handling such materials.

8. Leave lab coats and other personal protective equipment (e.g. gloves) in the laboratory when you leave. When it comes time to launder lab coats, have them professionally laundered. Do not take them home. If they are potentially contaminated with hazardous chemicals, dispose of them as hazardous waste. Consider using disposable lab coats when working with non-volatile highly toxic chemicals, carcinogens or reproductive hazards or infectious biological materials.

9. Keep the work area clean and uncluttered, with chemicals and infectious biological materials, special hazards and equipment properly labeled and stored. Clean up the work area at the beginning of the day or before starting an operation and upon completion or at the end of each day.

10. Post warning signs in areas or at equipment where special or unusual hazards exist.

Your enormous surface area...



Lungs as sheet Skin as box Intestines as sheet

You've an enormous surface (~400 m^2, with skin merely ~2 m^2). With it, we interact with our environment – sensory communications, respiration and ingestion. Unfortunately, it is also susceptible to chemical, biological and other hazardous insults and entry from our environment. But the majority of your surface is easily forgotten, tucked away inside you as lungs and intestine. Here is a reminder...

Person is ~1.5 m tall and ~0.08 m^3 wide.

Skin is ~2 m^2, so a person as a box is ~1 m^2 × 0.1 m thick.

Lungs and intestine sheets are paper-thin. Lungs are ~100 m^2 and ~0.01 m^3, so lungs as a sheet are ~7 m^2 × ~10^{-4} m thick. Each day we breathe about 20,000 times (or about 7000 times in an 8-hr work day).

Intestines are ~300 m^2 and ~0.01 m^3, so intestines as a sheet is ~12 m^2 x ~10^{-4} m thick.