

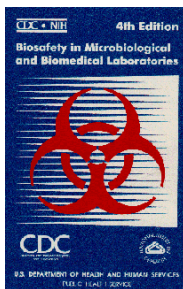
# Biosafety Information For the TSRI New Hire



**Biohazards:** Biohazards are biological organisms (bacteria, viruses, fungi, etc.) or biological toxins that are hazardous to humans, animals, or plants. Wherever they are used around campus you will be greeted by the international biohazard symbol [see **LEFT**].

**BIOSECURITY:** The CDC has compiled a list of 40 “select agents”. If your lab uses these agents additional safety precautions will be in effect.

**Who Can Work with Biohazardous Material?:** In order to use biohazardous material in the lab, the PI will have to submit an application to the TSRI Biosafety Committee and everyone involved with the project must complete biohazard training. Anyone who wants to use human blood, blood products, tissues, fluids or any other potentially infectious material (OPIM) must complete online Bloodborne Pathogen Training. The online training for biohazards and bloodborne pathogens is offered through the EH&S website.



**Universal Precautions:** This phrase describes the approach to infection control that must be used whenever working with human blood, body fluids, or other potentially infectious materials, including human cell lines. All of these items must be treated as infectious. Appropriate PPE (which might include gloves, gowns or lab coats, dust masks or respirators, and safety glasses) must be worn at all times. Furthermore, routine washing of the hands, general disinfection, and good housekeeping are essential safe practices. EH&S Biosafety personnel will assist you with any questions.

**Biosafety Levels:** Biohazardous materials are categorized as described below.

**BSL-1** Not known to cause disease in humans: may be used at the bench. (i.e. yeast, lactobacilli).

**BSL-2** Can cause illness in humans: must be used in a bio-safety cabinet (tissue culture hood). (i.e. influenza, salmonella)

**BSL-3** May be transmitted by aerosol, may cause illness that is not easily treated, may be exotic agent: must be used in a restricted access facility. (i.e. HIV, SARS)

**BSL-4** Agents are exotic, life threatening, and treatment is difficult: Not used at TSRI. (i.e. Ebola virus, Lassa Fever virus)



**Sharps and Wastes:** All needles, syringes, scalpels and razor blades are considered biohazardous “**sharps**” waste. Do not recap or clip needles since the majority of needle sticks occur while trying to recap a needle. Place the entire syringe with needle into the biohazardous sharps waste container.



## Radiation Safety Information For the TSRI New Hire

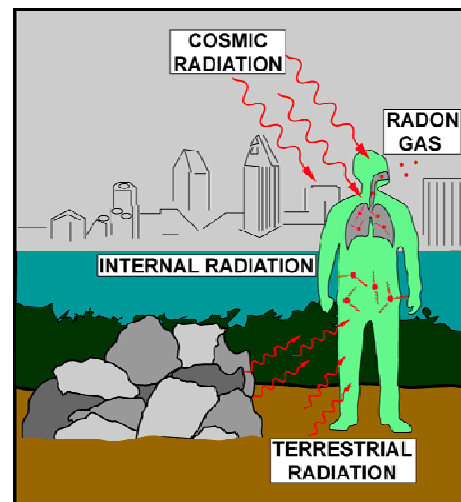


**Warning Signs:** Throughout campus, you will see the “Radioactive Materials” warning sign [see **LEFT**] on doors, refrigerators, waste containers, equipment, etc. It is important that you understand what this means.

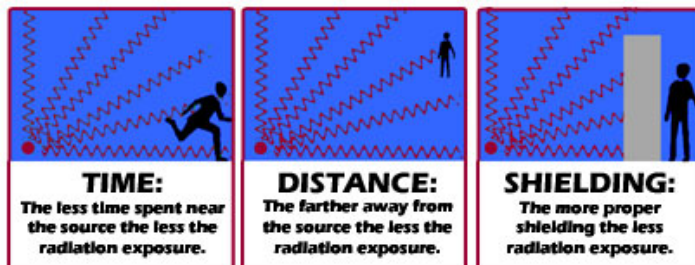
Radioactive materials may be used or stored in these locations. It does not indicate an exposure hazard. If any exposure hazard were expected a “Radiation Area” sign [**RIGHT**] would be posted. These are rare at TSRI since we work with fairly low levels of lower energy radioactive isotopes.

Despite the fact that the average person has been raised to fear the words “radiation” and “radioactive materials”, the radioactive materials used at TSRI are far less likely to cause actual harm to you than many of the other hazards in your lab. For that matter, there may be a few chemicals in your home that can cause more harm to you!

**Natural Background:** Many people are surprised to hear that they are being exposed to radiation every day of their lives from what is called “background radiation”. Currently the average person in the US receives approximately 360 mrem per year from cosmic, terrestrial (rocks & soils), internal (from the foods we eat!), radon (from the air we breathe), and other sources. The highest occupational exposures recorded among radioactive materials workers at TSRI hovers around 100 mrem per year while the majority of workers receive doses that are indistinguishable from the background readings. To put these numbers into perspective, the federal government allows occupationally exposed individuals to receive up to 5000 mrem per year since even these amounts are unlikely to cause health effects over the course of your entire lifetime.



**Protection Principles:** However, if you are still concerned about the risks associated



with radiation exposure in the lab there are three easy things you can do to reduce your potential exposure. Remember the safety principles, “Time, Distance, and Shielding”. If you can minimize the time you spend near radioactive materials, increase the distance between you and these

materials, or provide appropriate shielding between you and the materials, then you should be able to limit your exposure to As Low As Reasonably Achievable (ALARA).

Additional **Safety Training** is required for those working with Radioactive Materials.