

The most important lab biosafety rules



1 Good practice principles

Training

Make sure you know local laws, the lab's emergency plans and rules, and ask for help or additional training if you are unsure of anything.

Lab set-up

Designate storage areas, make sure aisles, safety exits, and safety equipment are not obstructed, and keep your work zone clean and tidy.

Documentation

Document experiments and lab activities to ensure reproducibility, meet regulations, and enable any problems to be traced back to their source.

Hazard signs

Where necessary, stick hazard signs on equipment, lab containers, and materials to warn about potential dangers. The biohazard signs can be an orange-red colour (US) or yellow (Europe).



2 Do's and don'ts

- Never work alone, so that help is always available in case of an emergency, or carry a lone worker device.
- Don't use headphones, so you can hear alarms.
- Always leave the lab to eat, drink or apply cosmetics.
- Don't sniff or taste liquids to find out what's in an unlabelled tube or bottle!



3 Protect yourself

Dress code

Wear closed-toe shoes and long trousers when going to the lab. Do not wear jewellery or loose clothing, and tie your hair back. Avoid clothing made of synthetic fibres if you're working with flammable liquids.

Personal protective equipment

PPE is the last line of defence between you and harmful materials, and should include a lab coat, eye protection and gloves.



Hand hygiene

Never touch your face when working in gloves. Wash your hands before leaving the lab, having first taken off your lab coat, eye protection, and gloves.



4 Managing spills, waste, and accidents

Chemical spills

For minor chemical spills, alert people in the immediate area, put on appropriate PPE, confine the spill and use a spill kit to absorb and neutralise it. Major chemical spills require the assistance of safety and emergency personnel.



Biological spills

Slowly mop up minor biological spills with absorbent materials, such as paper towels, and disinfect the area. If a major biological spill occurs, leave the area – if possible – to allow aerosols to settle. Then put on appropriate PPE, mop it up, and disinfect the spill area.



Biological waste

Handle biological waste with the same care and caution as if working with biological agents. Waste should be placed in labelled, shatterproof containers, and immediately stored in a designated place marked by a biohazard sign. Containers should never be more than 75 % full, and you should avoid accumulation of large volumes of waste by regularly deactivating and disposing of it.

Accidents

Document and report any accident to the biosafety officer.

5 Minimising incident risk

Preventing aerosols

Laboratory-acquired infections often result from the inhalation of aerosols, so, if possible, always use aerosol-producing equipment, such as centrifuges, vortex mixers, blenders, and sonicators inside a biological safety cabinet.

Working with sharps

Be careful when handling sharps like syringes, tweezers, and scissors, especially when they have been contaminated with biological agents. Immediately place used sharps in dedicated puncture-proof containers, and treat them as infectious until autoclaved.



Decontaminating surfaces

Frequently wipe down your work surfaces and devices with a disinfectant solution to prevent cross-contamination and exposure to pathogens. If disinfectant residues could cause damage or be harmful for your skin, wipe them away with sterile water.

