

# Samples of biological hazards

Biological hazards refer to biological substances that can pose a threat to human health or the environment. Here are some examples of biological hazards:

1. **Pathogenic Microorganisms:** Bacteria, viruses, fungi, and other microorganisms that can cause diseases in humans or animals. Examples include Escherichia coli (E. coli), Salmonella, HIV, Influenza virus, and Tuberculosis bacteria.<sup>1)</sup>
2. **Toxins and Venoms:** Substances produced by certain organisms that can cause harm or illness. Examples include snake venom, botulinum toxin produced by Clostridium botulinum bacteria, and mycotoxins produced by moulds.<sup>2)</sup>
3. **Biological Waste:** Waste materials from biological sources, such as blood, bodily fluids, tissues, or laboratory specimens, which may contain infectious agents or harmful substances.<sup>3)</sup>
4. **Allergens:** Substances that can trigger allergic reactions in susceptible individuals. Examples include pollen, dust mites, certain foods (e.g., peanuts, shellfish), and animal dander.<sup>4)</sup>
5. **Biological Agents Used in Biowarfare or Bioterrorism:** Certain pathogens or toxins that can be intentionally used to cause harm or terror, such as anthrax, smallpox, or ricin toxin.<sup>5)</sup>
6. **Zoonotic Diseases:** Diseases that can be transmitted between animals and humans. Examples include rabies, avian influenza (bird flu), and Lyme disease.<sup>6)</sup>
7. **Biological Contaminants in Food:** Microorganisms or toxins that can contaminate food and cause foodborne illnesses. Examples include Salmonella, Campylobacter, and Staphylococcus aureus.<sup>7)</sup>

Bio hazards applicable to my workplace in counselling will be:

- Influenza virus
- Mycotoxins produced by moulds



Safety Plan

## To prevent the spread of the influenza virus (Control Measures)

The influenza virus primarily spreads through respiratory droplets when an infected person coughs, sneezes, or talks. When an infected person releases these respiratory droplets into the air, people nearby can inhale them and become infected. The virus can also spread by touching surfaces or objects contaminated with the virus and then touching the mouth, nose, or eyes.<sup>8)</sup>

The survival time of the influenza virus on surfaces can vary depending on various factors such as the specific strain of the virus, temperature, humidity, and the type of surface. Generally, studies have shown that the influenza virus can survive on surfaces for a few hours to several days.<sup>9)</sup>

Commonly known as the flu, it is important to follow preventive measures. Here are some preventive measures for the influenza virus:

- **Get Vaccinated:** The most effective way to prevent the flu is by getting an annual flu vaccine. Vaccination helps your body build immunity against the flu virus and reduces the severity of the illness if you do get infected.
- **Practice Good Hand Hygiene:** Wash your hands frequently with soap and water for at least 20 seconds, especially before eating or touching your face. If soap and water are not available, use an alcohol-based hand sanitizer.
- **Cover Your Mouth and Nose:** When coughing or sneezing, use a tissue to cover your mouth and nose. If a tissue is not available, cough or sneeze into your elbow, not your hands. Dispose of used tissues properly.
- **Avoid Close Contact:** Stay away from individuals who are sick with flu-like symptoms, and if you are sick, avoid close contact with others to prevent spreading the virus.
- **Clean and Disinfect Surfaces:** Regularly clean and disinfect frequently-touched surfaces and objects, such as doorknobs, light switches, and mobile phones, as the flu virus can survive on surfaces for some time.
- **Practice Respiratory Hygiene:** If you have flu-like symptoms, wear a face mask to prevent spreading the virus to others through respiratory droplets.
- **Stay Home When Sick:** If you have flu-like symptoms, it is important to stay home, rest, and avoid going to work, school, or public places until you have recovered and are no longer contagious.
- **Boost Immunity:** Maintain a healthy lifestyle by eating a balanced diet, getting regular exercise, managing stress, and getting enough sleep to support a strong immune system.

Please note that these preventive measures are general recommendations. It is always advisable to consult with healthcare professionals or follow guidelines from reputable health organizations, such as the Centers for Disease Control and Prevention (CDC) or the World Health Organization (WHO), for the most up-to-date and specific preventive measures for the influenza virus in your region.

## To prevent mycotoxins produced by molds

Here are some preventive measures you can take:

- **Control Moisture and Humidity:** Mold thrives in damp and humid environments. Ensure that your home or workplace has proper ventilation and control moisture levels to prevent mold growth. Fix any leaks or water damage promptly, use dehumidifiers if necessary, and ensure proper air circulation.
- **Regularly Inspect and Clean:** Regularly inspect areas prone to mold growth, such as basements, bathrooms, and kitchens. Clean and dry any visible mold promptly using appropriate cleaning methods. Vacuum with a HEPA filter to prevent spreading mold spores in the air.
- **Maintain Indoor Air Quality:** Use air purifiers with HEPA filters to help remove mold spores from the air. Regularly clean and maintain HVAC systems to prevent mold growth and circulation.
- **Reduce Clutter:** Cluttered spaces can provide ideal environments for mold growth. Keep your living and working areas clean, organized, and free from excessive clutter.
- **Monitor and Address Water Intrusion:** Regularly check for signs of water intrusion, such as leaks or condensation, and promptly address them to prevent mold growth and mycotoxin production.
- **Professional Mold Remediation:** If you have extensive mold growth or are dealing with a severe mold problem, consider seeking professional mold remediation services. Professionals

can safely remove and remediate mold-infested areas.

It is important to note that prevention is key, as mycotoxins can be harmful if ingested or inhaled. If you suspect significant mold growth or mycotoxin exposure<sup>10)</sup>, consult with a qualified professional, such as an environmental health specialist or a mold remediation expert, to assess and address the situation properly.

## slips, trips and falls hazards

Slips, trips, and falls are common hazards that can lead to injuries in various settings, including workplaces, public spaces, and homes. Here are some examples of slips, trips, and falls hazards:

1. **Wet or Slippery Surfaces:** Spills, wet floors, or recently cleaned surfaces can create slip hazards, especially if there are no caution signs or proper drying measures in place.
2. **Uneven or Damaged Flooring:** Loose floor tiles, cracked pavements, or uneven surfaces can cause trips and falls, particularly if they are not properly repaired or marked.
3. **Cluttered Walkways:** Objects, equipment, or debris left in walkways or aisles can be tripping hazards, obstructing safe passage.
4. **Poor Lighting:** Insufficient lighting can make it difficult to see potential hazards, leading to missteps or falls.
5. **Lack of Handrails or Guardrails:** Staircases, ramps, or elevated areas without proper handrails or guardrails can increase the risk of falls.
6. **Inadequate Step or Stair Design:** Inconsistent step heights, narrow stairs, or lack of traction on steps can contribute to slips, trips, and falls.
7. **Improper Use of Ladders or Step Stools:** Using ladders or step stools incorrectly, such as overreaching or not maintaining three points of contact, can result in falls.
8. **Weather Conditions:** Outdoor hazards like ice, snow, rain, or slippery surfaces due to weather conditions can increase the risk of slips and falls.

Preventing slips, trips, and falls involves implementing various preventive measures, including:

- Regular inspection and maintenance of flooring and walkways.
- Prompt cleanup of spills and proper signage to alert others.
- Clearing walkways from clutter or obstacles.
- Adequate lighting in all areas, especially in high-risk zones.
- Installation of handrails and guardrails in appropriate areas.
- Providing proper training on ladder safety and proper use of step stools.
- Implementing procedures for addressing and preventing hazards related to weather conditions.

It's important to assess specific environments and implement suitable preventive measures accordingly. Additionally, following applicable safety guidelines and regulations is crucial to ensure a safe environment and minimize the risk of slips, trips, and falls.

1)

<https://www.who.int/health-topics/>

2)

"The Venomous Reptiles of the Western Hemisphere" by Jonathan A. Campbell and William W. Lamar. Published by Cornell University Press, 2004.

3)

"Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" by the Centers for Disease Control and Prevention (CDC). Published in 2012.

4)

"Allergens and Allergen Immunotherapy: Subcutaneous, Sublingual, and Oral" by Richard F. Lockey and Dennis K. Ledford. Published by CRC Press, 2013.

5)

"The Demon in the Freezer: A True Story" by Richard Preston. Published by Random House, 2002.

6)

"Zoonoses: Infectious Diseases Transmissible from Animals to Humans" by J.S. Mackenzie, D.J. Jeggo, P.D. Daszak, J.E. Richt, and W.B. Karesh. Published by ASM Press, 2017

7)

"Food Microbiology: Fundamentals and Frontiers" by Michael P. Doyle and Robert L. Buchanan. Published by ASM Press, 2012.

8)

"Transmission of Influenza A in Human Beings" by Milton DK, Fabian MP, Cowling BJ, Grantham ML, McDevitt JJ. Published in The Lancet Respiratory Medicine, 2013.

9)

"Survival of Influenza A(H1N1) on Materials Found in Households: Implications for Infection Control" by Boone SA, Gerba CP. Published in PLoS ONE, 2010.

10)

"Mycotoxins and Their Impact on Human and Animal Health" by Martin Weidenbörner. Published by Springer, 2018.