

# 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
- Tuberculosis
- Mycotoxins produced by moulds

## To prevent the spread of the influenza virus

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.

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.

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.

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.