How Do They Enter the Body?

- Virus
  - Can’t replicate without a host, but can exist on surfaces
  - Many virus infections don’t cause symptoms at all.
  - In some cases, viruses can cause significant disease, especially in certain groups of people (such as young kids, elderly adults, pregnant women)

- Bacteria
  - Can live on its own
  - Many bacteria are normally occurring, and help digest food, destroy disease-causing microbes, fight cancer cells and provide nutrients. However, bacteria can occasionally cause serious infections.

What’s the Difference?

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Size

- Virus
  - 10 to 100 times smaller than the smallest bacteria
  - DNA: 10 Nanometers

- Bacteria
  - Size varies between 0.2 and 10.0 micrometers in diameter
  - DNA: 100 Nanometers

Examples of Diseases Caused

- Virus
  - Common colds, chicken pox, measles, flu, COVID-19, pneumonia and other diseases

- Bacteria
  - Wound infections, ear infections, strep throat, pneumonia and tuberculosis

How Long Does It Live Outside the Body?

- Virus
  - Flu Viruses: Lasts for hours in the air at lower temperatures and for 24 hours on hard surfaces
  - SARS-CoV-2 Virus: Up to 3 hours in the air, up to 4 hours on copper, up to 24 hours on cardboard, up to 48 hours on steel, up to 72 hours on plastic, up to 14 days on glass

- Bacteria
  - Bacteria can survive independently, but they will die if they don’t find the right environmental conditions for growth.
  - Staphylococcus pneumoniae & S. pyogenes: Survive for more than 48 hours on soft things. (stuffed animals) Salmonella: Can last up to six months on a cookie or cracker. Escherichia coli: Can live up to a day. Staphylococcus aureus: Can survive for weeks on dry clothes.

How Do They Enter the Body?

- Virus
  - Direct contact with infected body fluids or lesions
  - Indirect contact with contaminated surfaces
  - Inhalation (contaminated air or droplets)
  - Contaminated food or water
  - Animal contact or insect bites

- Bacteria
  - Get vaccinated
  - Practice social distancing
  - Wear facemask

Diagnosed by Examining

- Virus
  - Blood and body fluids like cerebrospinal fluid, swabs from the respiratory tract, swabs from lesions, urine, stool, and infected tissue

- Bacteria
  - Blood and body fluids like cerebrospinal fluid, swabs from the respiratory tract, swabs from lesions, urine, stool, and infected tissue

Where Does It Live?

- Virus
  - Must live inside cells of person, animal, plant or even a bacterium
  - Survives outside living cells for only a short time, but cannot reproduce on its own

- Bacteria
  - Can grow and reproduce on its own
  - Can grow and reproduce in the human body and in human cells
  - Some can live in extreme hot, cold or even radioactive environments

How to Prevent Contact?

- Virus
  - Difficult to treat
  - Not affected by antibiotics
  - Antiviral medications block some, but not all, viruses from entering the body or stop some from reproducing

- Bacteria
  - Antibiotics

How Are Infections Treated?