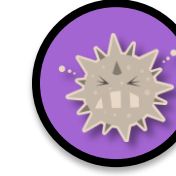


TOKENS



OR



## BACK DESIGN



## SECTION CARDS

### MICROBIOLOGY

The Microbiology Section identifies bacteria and fungi that cause diseases of public health importance in humans. Agents can be identified from a variety of specimen types usually through the use of traditional techniques such as growth in culture and/or biochemical analysis.

**Examples:** *Mycobacterium tuberculosis*, *Yersinia pestis*, *Staphylococcus aureus*

x 6

### VIROLOGY

The Virology Section identifies viruses that cause diseases of public health importance in humans. Agents can be identified from a variety of specimen types usually through the use of traditional techniques such as growth in culture and/or biochemical analysis or through the detection of antibodies.

**Examples:** *Rotavirus*, *Measles*, *HIV*

x 6

### MOLECULAR

The Molecular Biology Section identifies bacteria, fungi, and viruses that cause diseases of public health importance in humans. Agents can be identified from a variety of specimen types through the use of more modern techniques such as DNA or RNA amplification, sequencing, or molecular fingerprinting

**Examples:** *Norovirus*, *Coxiella burnetti*, *Vibrio cholerae*

x 6

# SPECIMEN CARDS

## Blood

Whole blood, serum or plasma specimens can be used to detect a number of infectious agents. This could be through the direct identification of the agent or by measuring antibodies that are generated against an infectious agent.

**Examples:** *Yersinia pestis*,  
*Listeria*, HIV

## Feces

Feces or a stool specimen is submitted when you have diarrhea, which can be caused by a number of different bacteria or viruses.

**Examples:** *Salmonella*,  
*Shigella*, Enterovirus

## Respiratory

A respiratory specimen can be anything from a nasal or throat swab to sputum (phlegm) and can be used to detect bacteria and viruses that cause nose throat or lung infections.

**Examples:** *Bordetella pertussis*,  
*Legionella*, Adenovirus

# SPECIMEN CARDS

## Wound/ Lesion

A wound or lesion is any condition where the skin is broken such as sores, insect bites, boils, or a physical injury. A swab of the wound or lesion can identify infectious agents like bacteria, viruses, or fungi

**Examples:** *Bacillus anthracis*,  
*Staphylococcus aureus*, *Varicella*  
*zoster*

## CSF

Cerebrospinal fluid (CSF) is a liquid that surrounds the brain and spinal chord. It is tested when meningitis is suspected which is a disease caused by many different bacteria, fungi, or viruses.

**Examples:** *Neisseria meningitidis*,  
*Coccidioides*, *Mumps virus*

## Environmental

Environmental samples include food, water, suspicious “white powder” samples or surface swabs of things like instruments, appliances, shower stalls etc. Many bacteria, viruses, and fungi can be identified from such samples.

**Examples:** *Vibrio cholerae*,  
*Pseudomonas*, *Rotavirus*

# INFECTIOUS AGENT CARDS

## **Yersinia pestis (Plague)**

**What is it?** A bacterium

**Where is it found?** In rats, squirrels, and other small rodents

**How is it spread?** Being bitten by fleas from infected animals. Can also be spread from person to person through inhalation of droplets

**What does it cause?** Bubonic, pneumonic, or septicemic plague

x 3

## **Coxiella burnetti**

**What is it?** A bacterium

**Where is it found?** Cattle, sheep, goats, and other farm animals.

**How is it spread?** Inhalation of barnyard dust, tick bites, or, ingestion of unpasteurized milk or dairy products.

**What does it cause?** Q-fever, brucellosis

x 3

## **Norovirus**

**What is it?** A virus

**Where is it found?** In the stool and vomit of infected people.

**How is it spread?** highly contagious and spreads from person to person, through contaminated food or water, and by touching contaminated surfaces.

**What does it cause?** Diarrhea, vomiting, and stomach pain, commonly called the stomach flu.

x 3

## **Bordetella pertussis (whooping cough)**

**What is it?** A bacterium

**Where is it found?** Humans are the only known host

**How is it spread?** From person to person through the air

**What does it cause?** Whooping cough, respiratory distress

x 3

## **Francisella tularensis**

**What is it?** A bacterium

**Where is it found?** Rabbits, rodents, deer, and certain birds such as chicken, turkey etc.

**How is it spread?** Through contact with an infected animal, through bites from ticks, mosquitos etc., through inhalation or ingestion of contaminated food

**What does it cause?** Tularemia; skin lesions and/or pneumonia

x 3

## **Neisseria meningitidis**

**What is it?** A bacterium

**Where is it found?** Occurs naturally in the nose of 5-15% of humans

**How is it spread?** Through the exchange of saliva and other respiratory secretions

**What does it cause?** Meningitis

x 3

## Haemophilus influenzae

**What is it?** A bacterium

**Where is it found?** Humans.

**How is it spread?** From person to person through the air

**What does it cause?** Respiratory flu-like symptoms, meningitis

x 3

## Brucella sp.

**What is it?** A bacterium

**Where is it found?** Cattle, sheep, pigs

**How is it spread?** Direct contact with infected animal, by ingesting infected food such as unpasteurized milk products, or inhaling bacteria from wool, fur etc.

**What does it cause?** Brucellosis

x 3

## Vibrio cholerae

**What is it?** A bacterium

**Where is it found?** Humans are the only known vertebrate reservoir. Can also be found in brackish water, certain seafood, and in the stool of an infected person.

**How does it spread?** Through contaminated food, water or surfaces.

**What does it cause?** Cholera, profuse watery diarrhea

x 3



## Listeria

**What is it?** A bacterium

**Where is it found?** In the natural environment.

**How is it spread?** Ingestion of contaminated food.

**What does it cause?** Listeriosis  
May cause stillbirth or pre-mature delivery in pregnant women.

x 3

## E. coli

**What is it?** A bacterium

**Where is it found?** E. coli lives in the guts of ruminant animals, including cattle, goats, sheep, deer, and elk.

**How is spread?** Direct contact (e.g. petting zoo) and/or ingestion of food or water sources contaminated from cattle (or human) feces.

**What does it cause?** Severe stomach cramps, diarrhea and vomiting.

x 3

## Salmonella

**What is it?** A bacterium

**Where is it found?** Ubiquitously present in the environment and reside in the GI tracts of animals

**How is it spread?** Contaminated food, water, or contact with infected animals.

**What does it cause?** Diarrhea (sometimes bloody), fever, and abdominal cramps.

x 3

## Shigella

**What is it?** A bacterium

**Where is it found?** Intestinal tract of humans and apes.

**How is it spread?** From one infected person to the next in poor hygienic conditions or from eating contaminated food

**What does it cause?** diarrhea, fever, and stomach cramps

x 3

## Legionella

**What is it?** A bacterium

**Where is it found?** Living in amoeba in the natural environment.

**How is it spread?** Through inhalation of mist droplets from showers, swimming pools, spas, or cooling towers

**What does it cause?** Legionnaires' disease or Pontiac fever

x 3

## Mycobacterium tuberculosis

**What is it?** A bacterium

**Where is it found?** Humans and a few other mammals

**How is it spread?** Through inhalation of droplets when a n infected person coughs or sneezes

**What does it cause?** Tuberculosis

x 3

## **Bacillus anthracis (Anthrax)**

**What is it?** A bacterium

**Where is it found?** In the soil & dirt

**How is it spread?** Through skin contact, through ingestion or through inhalation

**What does it cause?** Anthrax (cutaneous, inhalation or gastrointestinal)

x 3

## **Staphylococcus aureus**

**What is it?** A bacterium

**Where is it found?** Naturally on human skin

**How is it spread?** Human to human contact, and contaminated food

**What does it cause?** Various conditions such as boils, pimples, endocarditis, toxic shock syndrome, pneumonia, meningitis

x 3

## **Coccidioides**

**What is it?** A fungus

**Where is it found?** In desert soil

**How is it spread?** Through inhalation of spores

**What does it cause?** Valley fever; acute respiratory illness

x 3

## Bacillus cereus

**What is it?** A bacterium

**Where is it found?** In soil and dirt

**How is it spread?** Through ingestion of contaminated food

**What does it cause?** Nausea, vomiting, and diarrhea

x 3

## Pseudomonas

**What is it?** A bacterium

**Where is it found?** Soil, water, skin, and most man-made environments

**How is it spread?** Through skin contact or accidental injection

**What does it cause?** Pneumonia, septic shock, urinary tract infection, gastric infections, or skin and soft tissue infections.

x 3

## HIV

**What is it?** A virus

**Where is it found?** Human blood and/or other human secretions.

**How is it spread?** Mucous membrane contact with infectious body fluids or through accidental injection.

**What does it cause?** AIDS

x 3

## Hepatitis A

**What is it?** A virus

**Where is it found?** Humans are the only reservoir .

**How is it spread?** Ingestion of contaminated food or water, or from person to person due to poor hand hygiene.

**What does it cause?** Impaired liver function, jaundice.

x 3

## Enterovirus

**What is it?** A virus

**Where is it found?** In respiratory secretions

**How is it spread?** Person to person or contact with fecally contaminated objects.

**What does it cause?** Mild upper respiratory symptoms ("summer cold"), a flu-like illness with fever and muscle aches, or an illness with rash.

x 3

## Measles

**What is it?** A virus

**Where is it found?** In humans alone

**How is it spread?** From person to person through the air from respiratory secretions

**What does it cause?** Measles (high fever, cough, runny nose, red eyes, rash)

x 3

## Adenovirus

**What is it?** A virus

**Where is it found?** In humans

**How is it spread?** From person to person through the air, or through fecal routes.

**What does it cause?** Respiratory disease, conjunctivitis, gastroenteritis

x 3

## Varicella zoster (Chicken pox)

**What is it?** A virus

**Where is it found?** In humans and other primates

**How is it spread?** From person to person through the air, or direct contact with rash secretions

**What does it cause?** Respiratory disease, conjunctivitis, gastroenteritis

x 3

## Herpes simplex

**What is it?** A virus

**Where is it found?** In humans and animals although only humans get the disease

**How is it spread?** Direct contact with a lesion or body fluid of an infected person

**What does it cause?** Blisters, Bell's palsy, encephalitis

x 3

## Mumps virus - Rubeolla

**What is it?** A virus

**Where is it found?** Humans are the only known reservoir

**How is it spread?** From person to person through respiratory secretions and saliva

**What does it cause?** Inflammation of salivary gland (mumps)

x 3

## Rotavirus

**What is it?** A virus

**Where is it found?** GI tract and feces (stool) of infected people

**How is it spread?** From person to person or exposure to contaminated surfaces due to poor hand hygiene

**What does it cause?** Vomiting, diarrhea

x 3

## Streptococcus pneumoniae

**What is it?** A bacterium

**Where is it found?** In the respiratory tract of humans

**How is it spread?** Person to person through close contact of respiratory secretions

**What does it cause?** Pneumonia, sepsis, meningitis, septic arthritis, etc.

x 3