

## Game: What Causes the Disease?

### Goal

Can you guess if a disease is caused by viruses, bacteria, or something else?

### Materials

- Game boards: **BACTERIA**, **VIRUS** and **NEITHER** (pp. 2-4)
- Disease card sets (pp. 5-16)
  - Sets are designed to contain at least one card for each disease category.
  - Each set is pre-sorted for easy printing. The card set pages should be printed using the 2-sided setting as the spacing has been formatted for each set. We recommend printing each game card set on different colored paper, or color coding the cards with highlighters/markers.
  - Empty blocks are provided if you want to add other diseases to the game.
  - Alternatively, you can write the disease names on sticky notes or index cards.
- Game answer key (pp. 17 & 18)
- Additional disease information (pp. 19 & 20)

### Instructions

- Divide players into teams and give each team a set of disease game cards.
- Each card should be placed on the board that the team identifies as the cause: Virus/Bacteria/ Neither.
- After the teams have finished placing their cards, use the answer key to identify the correct cause for each disease. Depending on time, you can reveal the correct responses, or you can have players share their guesses and why.
- Score the results. Teams get one point for each correctly placed card. The team with the most points wins.
- You may wish to prepare a few tie-breaker cards in case of a tie.

# VIRUS

# BACTERIA

# NEITHER

SET 1

**TYPHOID**

**EBOLA**

**RINGWORM**

**DIPHTHERIA**

**CERVICAL  
CANCER**



SET 2

**SALMONELLOSIS**

**MONONUCLEOSIS**

**CANCER**

**LYME  
DISEASE**

**CHICKENPOX**



SET 3

**ALZHEIMER'S  
DISEASE**

**HEPATITIS B**

**TETANUS**

**RUBELLA**

**MALARIA**



SET 4

**JAPANESE  
ENCEPHALITIS**

**PERTUSSIS**

**DIABETES**

**MEASLES**

**ROTAVIRUS  
GASTROENTERITIS**



SET 5

**ZIKA**

**MENINGOCOCCAL  
MENINGITIS**

**CHOLERA**

**CTE**

**CHRONIC  
TRAUMATIC  
ENCEPHALOPATHY**

**COMMON  
COLD**



BLANK SET





## Answer Key: What Causes the Disease?

| GROUP A                           | GROUP B                   | GROUP C                         | GROUP D                               | GROUP E                                            |
|-----------------------------------|---------------------------|---------------------------------|---------------------------------------|----------------------------------------------------|
| Cervical Cancer (HPV)<br><b>V</b> | Mononucleosis<br><b>V</b> | Alzheimer's Disease<br><b>N</b> | Japanese Encephalitis<br><b>V</b>     | Chronic Traumatic Encephalopathy (CTE)<br><b>N</b> |
| Diphtheria<br><b>B</b>            | Cancer<br><b>N</b>        | Malaria<br><b>N</b>             | Diabetes<br><b>N</b>                  | Cholera<br><b>B</b>                                |
| Ringworm<br><b>N</b>              | Lyme Disease<br><b>B</b>  | Tetanus<br><b>B</b>             | Pertussis<br><b>B</b>                 | Meningococcal Meningitis<br><b>B</b>               |
| Ebola<br><b>V</b>                 | Salmonellosis<br><b>B</b> | Hepatitis B<br><b>V</b>         | Measles<br><b>V</b>                   | Common Cold<br><b>V</b>                            |
| Typhoid<br><b>B</b>               | Chickenpox<br><b>V</b>    | Rubella<br><b>V</b>             | Rotavirus Gastroenteritis<br><b>V</b> | Zika<br><b>V</b>                                   |

## Answer Key: What Causes the Disease?

| EASY                          | MODERATE                 | DIFFICULT                    |
|-------------------------------|--------------------------|------------------------------|
| Amoebiasis – N                | AIDS – V                 | Alzheimer's – N              |
| Chickenpox – V                | Cancer – N               | Autism – N                   |
| Common Cold – V               | Cholera – B              | Cervical Cancer – V          |
| Diabetes – N                  | CTE – N                  | Chagas Disease – N           |
| Ebola – V                     | Dengue – V               | Japanese Encephalitis – V    |
| Hepatitis A – V               | Diphtheria – B           | Meningococcal Meningitis – B |
| Hepatitis B – V               | Lyme Disease – B         | Mononucleosis – V            |
| Hepatitis C – V               | Malaria – N              | Syphilis - B                 |
| Influenza – V                 | Mumps – V                | Tick-borne encephalitis - V  |
| Measles – V                   | Pertussis – B            |                              |
| Norovirus Gastroenteritis – V | Pneumococcal disease – B |                              |
| Poliomyelitis – V             | Rabies – V               |                              |
| Rotavirus Gastroenteritis – V | Ringworm – N             |                              |
| Rubella – V                   | Tetanus – B              |                              |
| Salmonellosis – B             | Tuberculosis – B         |                              |
| Thyroid – N                   | Yellow Fever - V         |                              |
| Typhoid – B                   |                          |                              |
| Zika – V                      |                          |                              |

| Disease                                | Pathogen/Cause                                                                                                                                              | Agent    |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| AIDS                                   | Human immunodeficiency virus (HIV)                                                                                                                          | Virus    |
| Alzheimer's                            | Multiple (combination of genetic, lifestyle, environmental factors)                                                                                         | Neither  |
| Amoebiasis (amoebic dysentery)         | Amoeba                                                                                                                                                      | Neither  |
| Autism                                 | Multiple (Genetics, paternal age, some viral infections (e.g., maternal rubella infection during pregnancy, and environmental exposures (e.g. thalidomide)) | Neither  |
| Cancer                                 | Multiple (Genetics, environmental exposures, chronic viral infections (e.g. HPV, hepatitis B))                                                              | Neither  |
| Cervical cancer                        | Human Papillomavirus (HPV) (Also some anal, vulvar, vaginal, penile and oropharyngeal cancers)                                                              | Virus    |
| Chagas disease                         | Trypanosoma cruzi                                                                                                                                           | Neither  |
| Chickenpox                             | Varicella zoster                                                                                                                                            | Virus    |
| Cholera                                | <i>Vibrio cholerae</i>                                                                                                                                      | Bacteria |
| Common cold                            | Rhinoviruses and Coronaviruses                                                                                                                              | Virus    |
| Chronic Traumatic Encephalopathy (CTE) | Injury or trauma                                                                                                                                            | Neither  |
| Dengue                                 | Flavivirus                                                                                                                                                  | Virus    |
| Diabetes                               | Multiple (Genetic and environmental factors)                                                                                                                | Neither  |
| Diphtheria                             | <i>Corynebacterium diphtheriae</i>                                                                                                                          | Bacteria |
| Ebola                                  | Ebola virus                                                                                                                                                 | Virus    |
| Hepatitis A                            | Hepatitis A virus                                                                                                                                           | Virus    |
| Hepatitis B                            | Hepatitis B virus                                                                                                                                           | Virus    |
| Hepatitis C                            | Hepatitis C virus                                                                                                                                           | Virus    |
| Influenza                              | Influenza virus                                                                                                                                             | Virus    |
| Japanese encephalitis                  | JE Virus                                                                                                                                                    | Virus    |
| Lyme disease                           | <i>Borrelia burgdorferi</i>                                                                                                                                 | Bacteria |
| Malaria                                | <i>Plasmodia</i>                                                                                                                                            | Neither  |

| Disease                                        | Pathogen/Cause                                                                                                              | Agent    |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------|
| Measles                                        | Measles virus                                                                                                               | Virus    |
| Meningococcal meningitis                       | <i>Neisseria meningitidis</i>                                                                                               | Bacteria |
| Mononucleosis                                  | Epstein Barr virus                                                                                                          | Virus    |
| Mumps                                          | Mumps virus                                                                                                                 | Virus    |
| Norovirus gastroenteritis                      | Norovirus                                                                                                                   | Virus    |
| Pertussis                                      | <i>Bordetella pertussis</i>                                                                                                 | Bacteria |
| Pneumococcal disease                           | <i>Streptococcus pneumoniae</i>                                                                                             | Bacteria |
| Pneumonia, epiglottitis bacteremia, meningitis | <i>Haemophilus influenzae</i> type b                                                                                        | Bacteria |
| Poliomyelitis                                  | Polio virus                                                                                                                 | Virus    |
| Rabies                                         | Rabies virus                                                                                                                | Virus    |
| Rotavirus gastroenteritis                      | Rotavirus                                                                                                                   | Virus    |
| Ringworm                                       | <i>Trichophyton</i> and <i>Microsporum</i> fungi                                                                            | Neither  |
| Rubella                                        | Rubella virus                                                                                                               | Virus    |
| Salmonellosis                                  | Salmonella                                                                                                                  | Bacteria |
| Syphilis                                       | <i>Treponema pallidum</i>                                                                                                   | Bacteria |
| Tetanus                                        | <i>Clostridium tetani</i>                                                                                                   | Bacteria |
| Thyroid disease                                | Multiple (Autoimmune diseases, treatments for disease (e.g. radiation therapy, surgery), and too much or too little iodine) | Neither  |
| Tick-borne encephalitis                        | Tick-borne encephalitis virus                                                                                               | Virus    |
| Tuberculosis                                   | <i>Mycobacterium tuberculosis</i>                                                                                           | Bacteria |
| Typhoid                                        | <i>Salmonella typhi</i>                                                                                                     | Bacteria |
| Yellow fever                                   | Yellow fever virus                                                                                                          | Virus    |
| Zika                                           | Zika virus                                                                                                                  | Virus    |