

Bioweapon



Special effect: The next pathogen removes all immunities concerning him, which includes vaccinations

0 Rd



Usage of bacterium, virus, protozoan, parasite, or fungus as a bioweapon (more than 1200 studied)

Epidemic



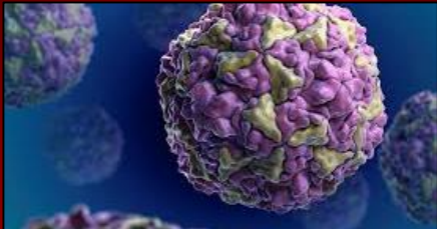
Special effect: The next pathogen except *E.coli* and *HCMV* affects also the player next to you. The effect will be deducted clockwise starting from the original victim

0 Rd



An Epidemic is the rapid spread of a diseases in a given population within a short period of time

Rhinovirus A



Special effect: none

-1 HP



Causes a **common cold**
single-stranded positive sense RNA genome



Smear infection
aerosol infection (rarely)



Not dangerous except for infants
Typ C can cause severe infections



sore throat/ runny nose/ sneezing/ cough/ muscle aches/ fatigue/ headache/ muscle weakness/ loss of appetite



No specific and antiviral therapy

Cough drops



+5 HP

Precondition: none

Special effect: curing of coughing



Caries, choking after swallowing



It is only effective when you put it in the correct body orifice

Immunity



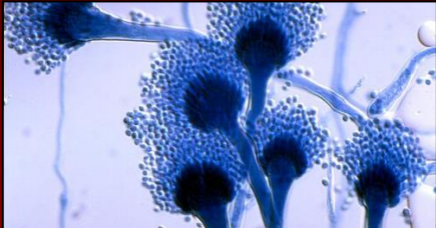
Special effect: Immunity (no damage)
against one bacteria or virus of your choice

5 Rd



The word immunity can be derived from the latin word immunitas and means „freedom from something“

Aspergillus fumigatus



Special effect: If HP below 30HP, you die

-0 HP



Causes **Aspergillosis**



Spread by Inhalation



A good immune system can deal with it



Symptoms include fever, chills, shock, delirium, seizures and blood clots



Antimykotika Amphotericin B and Flucytosin treatment

Listeria



-5 HP

Special effect: If „Immunsuppression“ is activ:
-30HP. If you have „Antibiotic“ on the hand: -10HP



Causes **Listeriosis**



Oral uptake with food



Lethal in 30% of the cases



Symptoms can include diarrhea, fever and meningitis



Cure with Aminopenicillinen and Aminoglycosiden

Painkiller



+15 HP

Precondition: Only valid within a range of 85 to 35 HP

Special effect: kills pain

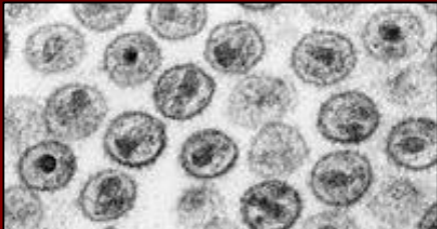


Most prominent painkillers Paracetamol and Aspirin. Morphium for hard cases and junkies.



Misuse can be lethal

Human Immunodeficiency Virus



-10 HP

Special effect: -10HP in every round until you reach 1HP. Absolut quarantine doesn't prevent this effect



Causes **AIDS**
Member of genus Lentivirus



By contact with bodily fluids like blood



With treatment: death after 70 years
Without treatment: death after 10 years

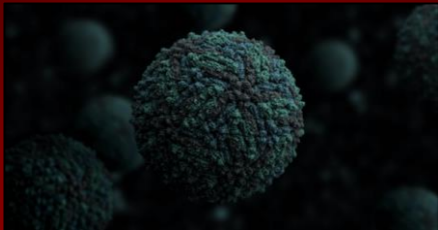


Stage 1: flu, body rash/ Stage 2: no effects for 10 years/ Stage 3: regular infections, weight loss



Highly active antiretroviral therapy and inhibitors

Zika virus



Special effect: none

-20 HP



Causes Zika fever



Spread by female *Aedes aegypti* mosquito, sex and vertical transmission



Adults: No proven death, possible linkage to GBS
Fetuses: Microcephaly, brain malformations



Fever/ red eyes/ joint pain/ maculopapular rash
Last normally less than 7 days



No vaccine present/ DNA vaccine in phase two clinical trial since March 2017

Absolute quarantine



Special effect: The next card that would change your HP, besides "Sagrotan-kid" and "Immunsuppression" has no effect. The card comes to its origin instead of your hand. HIV is not affected by this effect.

1 Rd



Derives from the italian *quaranta die* (forty days), originating in the maritime empire of Venice

Antibiotics



+20 HP

Precondition: You have less than 50HP.

Special effect: none.



Antibiotics are widely in use for treating infectious diseases such as pneumonia and borreliosis.



The use of antibiotics can damage the enteric flora and cause bacteria to mutate and gain resistances.

Immunosuppression



Special effect: If you lose HP due to pathogens or measles party you lose an additional 10HP. You cannot fall below 1HP due to this effect.

1 Rd

i

Immunosuppressions weaken a bodie's immune system. It's utilized e.g. for implant despite higher risk for infections.

Enterohemorrhagic *E. coli*



-25 HP

Special effect: The next *E. coli* is going to gain the additional effect -35HP and is now called EHEC.



Causes EHEC

It caused an epidemic in 2011



Smear infection, lack of hygiene, foodborne infection



4321 people got the disease. 50 people died.
(in Germany only)



Gastro-intestinal disease, diarrhea



Antibiotics, regulation of the water and electrolyte household

Escherichia coli



+10 HP

Precondition: none

Special effect: If a player loses the card, he will also lose 20 HP

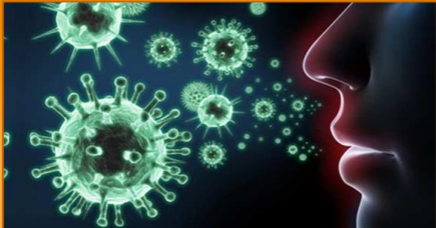


E. coli bacteria are a part of the human gastrointestinal tract



E. coli bacteria can lead to infections in other parts of the body

Infection



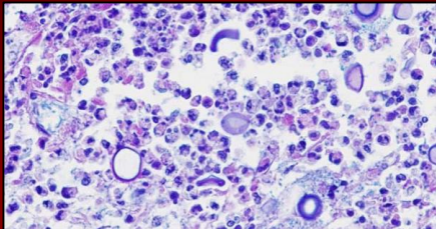
Special effect: Draw a card. If it was a pathogen, you would get the disease and you need to keep the card in your hand. If it is not a pathogen, then put it back in the middle.

0 Rd



The reproduction of bacteria, parasites, viruses etc. can cause an infection.

Cryptococcus neoformans



-20 HP

Special effect: -35HP, if you suffer under HIV infection



Causes **Cryptococcosis**

Can also be caused by *Cryptococcus gatti*



Droplet infection



Death rate: 10-30%

people living with aids: 30-70%



Headache, temperature, sensory disorder, meningitis



Antimycotics

Flu Vaccination



Special effect: Immunity against influenza

1 Rd



Due to high mutation rate of the virus, the vaccines usually protects only for a few years

Influenza A/B/C virus



Special effect: none

-35 HP



Causes **Influenza**

Influenza B effects nearly exclusively humans



Contact/ droplet infection/ Hand-to-eye, hand-to-mouth transmission



Death rate: 1-3%



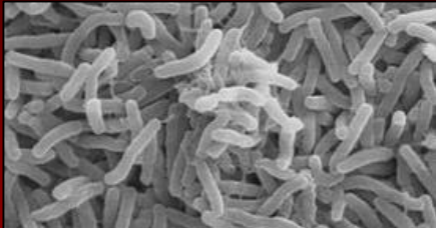
Headache, temperature, fatigue, limb pain, nausea, emesis, diarrhea, petechial rash



Influenza vaccination for prevention

Antivirals are effective, some strains show resistance

Vibrio cholerae



Special effect: none

-35 HP



Causes **Anthrax**

Facultitive anaerobe, comma-shaped bacteria



Spread via contaminated water or food



Dehydration and electrolyte imbalance can lead to death in untreated children



Causes severe diarrhea

Can also lead to muscle cramps and vomiting



Prevention through oral vaccination or sufficient sanitation/hygiene

Mycobacterium leprae



Special effect: -30HP every turn down to 1HP

-30 HP



Causes **Leprosy**
Aerobe, rod-shaped bacteria



Spread via coughing or contact with fluids from nose of infected



Unnoticed wounds and infections can lead to loss of extremities or death



Gradual destruction of cutaneous nerves leads to loss of sensation of pain



Multidrug therapy with several antibiotics

Cholera vaccine



Special effect: Immunity to *vibrio cholerae* (cholera)

1 Rd



Developed in late 1800s
Today's cost to immunize is 0.1 - 4.0 USD

Plasmodium falciparum



-25 HP

Special effect: If player is younger than 25 years:
-30HP.



Causes **Malaria**

Parasitic protozoa, changes structure during life cycle



Spread by bite of a female *Anopheles* mosquito



Death rate usually <1%, but much higher for children



Fever/ chills/ headaches / sweating / dizziness /
muscle pain / vomiting / diarrhea



Artemisinin- or Chinin based drugs, oral intake

Paranoia



Special effect: The next effect, that would increase your HP, reduces them instead by the same value.

4 Rd



Paranoia differs from phobia by a general distrust and false accusations, phobia involves no blame.

DTP Vaccine



Special effect: You are now permanently immune against diphtheria, tetanus and pertussis.

∞ Rd



Combination vaccines are recommended due to reduced costs and vaccination dates.

Measles virus



Special effect: Permanent immunity against measles

-30 HP



Causes **Measles**

evolved from formerly widespread rinderpest virus



Aerosol infection, smear infection



Majority survives

Acute measles encephalitis can be fatal



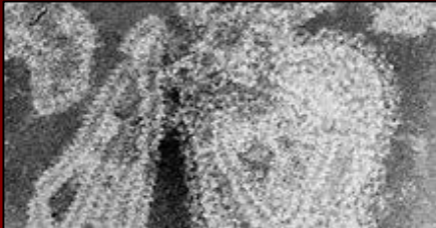
Fever, cough, runny nose/ Kopliks's spots/ red flat rash/ Complication: inflammation of brain, blindness



Measles vaccination preventing the disease

No specific treatment is available

Mumps virus



Special effect: Permanent immunity against mumps

-25 HP



Causes **Mumps**
Only infests human



Transmitted via respiratory droplets or direct contact.
Highly contagious and spreads rapidly



Death exceedingly rare/ very rarely: deafness,
meningitis, pancreatitis, sterility



Fever/ headache/ malaise
swelling of one or both parotid glands



Mumps vaccination for prevention
No specific treatment

Yersinia Pestis



-40 HP

Special effect: You don't lose HP if you can show the card „basic hygiene“



Causes Pest

Most common: bubonic-, septicemic-, pneumonic pest



Bite of infected fleas (bubonic and septicemic pest)/
aerosol infection (pneumonic pest)



Past death rate: 30-75% bubonic, 90-95% pneumonic,
99-100% septicemic
Today: no death risk if treated correctly



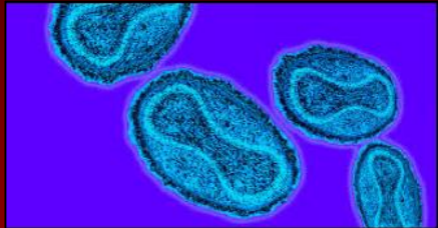
Fever/ limb pain/ gangrene/ Lymph gland swelling/
organ bleeding/ hemoptysis



No vaccination needed

Highly responsive to antibiotic therapy

Orthopoxvirus variolae



-40 HP

Special effect: none



Causes **Smallpox**
Family of the Virus: Poxviridae



Transmission through inhalation of virus, usually droplets expressed from an infected person.



Risk of death if untreated: 10% - 90%
(strain dependent)



Severe rash, fever, muscle pain, chills,
pharyngeal catarrh



Immunization through Variola-Virus / Vaccinia-Virus

Mass Vaccination - Smallpox



Special effect: each player receives permanent immunity to smallpox after his turn. Then remove this card from the game

∞ Rd



Mass vaccination was often performed with vaccine guns.

Chickenpox Vaccine



Special effect: You gain permanent immunity to chickenpox

∞ **Rd**



The pathogen of chickenpox is the varicella zoster virus, also the vaccine is based on this virus.

Streptococcus pneumoniae



Special effect: every turn -3HP

-25 HP



Causes **Pneumonia / meningitis / bronchitis**
gram-positive, facultative anaerobic bacteria



Part of the normal upper respiratory flora.
Become pathogenic if immunesystem is supressed



Risk of death (if untreated): < 0,5% (no risk factor)
~ 30 % (worst case)

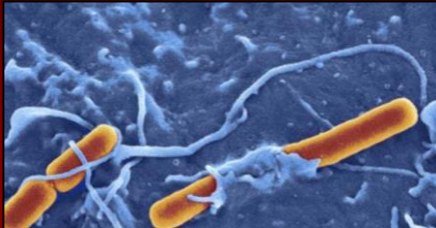


fever/ shortness of breath. The inflammatory
response causing plasma or blood fill the alveoli



pneumoccal vaccination

Shigella flexneri



Special effect: none

-30 HP



Causes **diarrhea**
gram-negative bacteria



Spread faecal-oral, via respiratory droplets or contaminated food



Watery diarrhea => inflammatory colitis => Ruhr
In rare circumstances dangerous

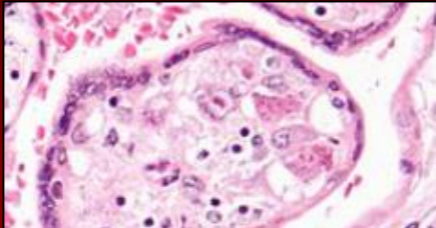


Symptoms are diarrhea, fever, nausea, vomiting, stomach cramps and flatulence



Infections can usually be treated with antibiotics, although some strains have become resistant

Human Cytomegalievirus (HCMV)



-5 HP

Special effect: only effects you, if you have a weak immune system, e.g. HIV



Causes **cytomegalovirus**



Infection via saliva, urine, sperm and blood



Typically unnoticed in healthy people
life-threatening for people with weak immune system

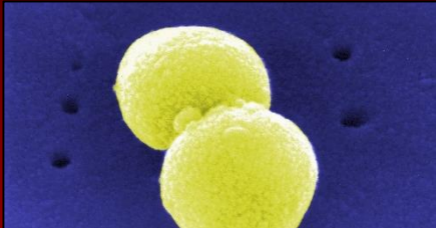


Infection of unborn child: congenital abnormalities
Immunocompromised patients: e.g. CMV hepatitis



Valganciclovir, that ist given orally or with the intravenous administered Ganciclovir

Pneumococci



-20 HP

Special effect: If you have more than 75 HP, you lose 35 HP



Causes **strong infections** (often in airways)
grampositive bacteria, are accumulated in pairs



Droplet infection



5-15% as result of pneumonia

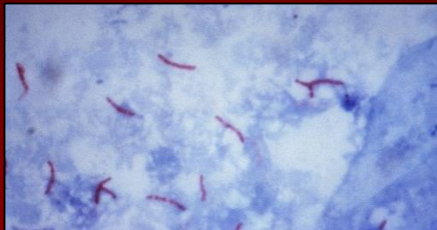


Cough, accelerated pulse, pale skin, fever



Use of penicillins or other antibiotics

Mycobacterium tuberculosis



Special effects: none

-40 HP



Causes **Tuberculosis**

aerobic, gram-positive, nonmotile rod bacteria



Through air, gastral and direct contact with infected tissue



death rate: one of the top 10 causes of death world wide over 95% of deaths occur in low- or middle-income countries



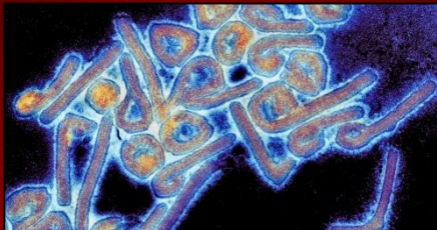
coughing (sometimes with blood), chills, fatigue, fever, weight loss, loss of appetite, night sweats



Prevention: vaccination of infants

Treatment: antibiotics

Marburg marburgvirus



Special effect: none

-100 HP



Causes **Marburg-Virus**

Most dangerous virus to mankind, Risk Group 4



Infection via NPC1 cholesterol transporter protein, transmitted by African Green Monkey and certain Bat



Fatality rates vary from 23% - 90%



Fever, chills, headaches and muscle aches, symptoms worsen to hemorrhagic fever and death



Treatment limited to supportive care, usually in intensive care unit

HAART



+5 HP

Precondition: HIV

Special effect: Solves the effect of HIV



Highly active antiretroviral therapy



Can cause many unique side effect because of old age, comorbidities and other prescribed medications.

Sagrotan Kid



Special effect: If you lose HP due to pathogens or Measles-Party, you lose an extra 5HP (until a minimum of 1HP). Not permanent, the effect ends as soon as you acquire a new immunity.

0 Rd

i

It is evident that a too sterile environment protects children from developing a normal functioning immune system.

Pneumococcal Vaccine



Special effect: You acquire immunity against the bacteria *Streptococcus pneumoniae*.

1 Rd



The vaccine protects against the included serotypes even if they are already antibiotic-resistant.



Parents who reject vaccinations



Special effect: Vaccinations have no effect;
already acquired immunities remain

∞ R_d



Vaccinations are the administration of antigenic material to stimulate an individual's immune system.

Corynebacterium diphtheriae



-40 HP

Special effect: might cause croup, a respiratory disease that was often fatal before vaccinations



Causes **Diphtheria**

gram-positive, produces exotoxin (diphtheriatoxin)



Through air, direct contact and contact with skin lesions
indirect (contaminated surfaces/objects)



fatality rate: 5% - 10%,

in children < 5 and adults > 40 years up to 20%



fever, chills, fatigue, cyanosis, sore throat, hoarseness,
cough, headache, painful swallowing, difficulty
breathing, lymphadenopathy, myocarditis, polyneuritis



Vaccination for prevention

Treatment: diphtheria antitoxin, antibiotics, quarantine

Medical Check Up



Special effect: You have to reveal the cards you present and the cards in your hand to all players. If your HP change (except due to the effect of this card) you get +10HP prior to the effect of the other card.

2 Rd



Early diagnosis can save life!

Mutation

Normal



BEAST

Substitution



FEAST

Insertion



BREAST



Deletion



BEST



A

Inversion



BEATS

Special effect: The next pathogen ignores all immunities.

1 Rd



90-95% of cancer are due to environmental factors, only 5-10% are directly due to inherited gene defects.

Ebola virus



-60 HP

Special effect: After drawing this card, draw again. If it is a healing card you only lose 30 HP.



Causes **ebola fever**
Incubation time: 2-21 days



Spreading through direct contact with body fluid like blood, excrements and vomit



High mortality risk (50-90%)



Chills, nausea, headache, muscle soreness, hemorrhagic fever and mucosal bleedings



Rehydration, symptomatic treatment and blood transfusions in an early state, also equine antibodies

Toxoplasma gondii



-10 HP

Special effect: Remove any number of your hand cards and replace them from the middle stack.



Causes **Toxoplasmosis**

Afflicts primarily cats. Humans can act as an intermediate host



Spreading through eating rare meat or through contact with cat excrements.



Immunosuppressed people (e.g. newborns, AIDS-patients) may suffer from neurological breakdown.



Asymptomatic in case of an intact immune system. Rarely: slight fever, tiredness, limb pain



You normally produce antibodies to protect you from another infection.

Pandemy



Special effect: The next pathogen except HCMV and E.coli will affect every player. The pathogen effects clockwise, starting with the original aim. As long as the card „Epidemy“ is active, this card has no effect.

1 Rd



A pandemy signifies a transnational spreading of a disease, even across continents.

Homeopathy



+0 HP

Precondition: none

Special effect: not effective for treating any condition



Is a system of alternative medicine; „like cures like“, no more effective than a placebo



Renunciation of normal medical care can be life-threatening, possible intoxications and allergic reactions

Placebo effect

If you believe it will affect you

it will

If you don't

it won't

+5 HP

Precondition: none

Special effect: none



It's an inactive substance, e.g. sugar, distilled water, saline solution



Can also induce negative effects, called nocebo effect or none

Basic hygiene



Special effect: preserve your health and protect against diseases

5 Rd



Too much hygiene, especially in childhood, can weaken the immune system

Bordetella pertussis



-15 HP

Special effect: if you have more than 65HP, you lose 25HP



Causes **whooping cough**

Gram-negative, aerobic, rod-shaped bacterium



Spreading of toxin überover coughing, sneezing, etc.



Can be deadly for children younger than 6 months



Cough in different strengths/ runs in 3 stages(catarrhale, convulsivum, decrementi)



Preventative vaccination

In hard cases antibiotics

Closteridium tetani



-20 HP

Special effect: At next turn: cards are presented face up and presenter choses first



Causes **Tetanus**

Gram-positive, anaerobic bacterium/ endospores



Tetanospasmin and tetanolysin(toxins) find its way into the body over wounds



Risk of death if untreated : 100% / treated: 10-20%



Strong, enduring muscle cramps / Sweating /swallowing disorders



Preventative vaccination/ wound washing/ antibiotics (Metronidazol)/ antibodies for toxin-neutralisation

Bacillus anthracis



Special effect: none

-40 HP



Causes **Anthrax**

Anaerobe, rod-shaped bacterium/survives centuries



Spread by spores of bacteria/ Infectio via skin, inhalation, interstitial and injection



Risk of death if untreated: skin 25%/ intestinal 25-75%/ respiratory 50-80%



Small blister/ fever/ chest pain/ shortness of breath/ nausea/ vomiting/ abdominal pain



Intravenous or oral antibiotics (eg. Penicilin)

Human herpesvirus 3



-5 HP

Special effect: Your direct teammates are getting also chickenpox. You all get a permanent immunisation against chickenpox



Causes **chickenpox**
Five clades of the this virus exist



Airborne: spreads through coughs and sneezes of an infected person



Reactivation to herpes zoster/ Affection of central nervous system/ postherpetic neuralgia/ myelitis

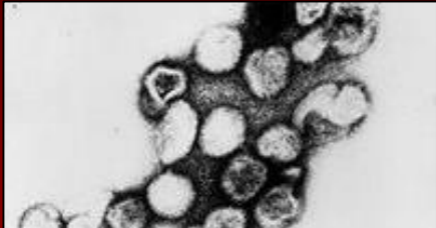


Symptoms are skin rash that forms small itchy blisters and it may include fever and headaches.



Preventable with varicella vaccine. No specific treatment but diminish discomfort of symptoms.

Rubella virus



-20 HP

Special effect: You get a permanent immunisation against rubella



Causes **rubella**
Singel-stranded RNA genome



Spread through the air via coughs of people who are infected



Infection during pregnancy may result in a child born with deafness, heart and brain problems.



Symptoms are rash, low grade fever, swollen glands and headache.



Preventable with rubella vaccine. No specific treatment but diminish discomfort of symptoms.

Pox party



Special effect: Immunisation against pox.
-20 HP if one of the other teammates gets pox within the next 5 rounds.

5 Rd



social activity where children are deliberately exposed to an infectious disease, supposedly to promote immunity

Antibiotic resistance



Over-prescribing of antibiotics



Patients not finishing their treatment



Over-use of antibiotics in livestock and fish farming



Poor infection control in hospitals and clinics



Lack of hygiene and poor sanitation



Lack of new antibiotics being developed

Special effect: Resistance of bacteria to an antibiotic. Bacteria are not resistant any longer when another antibiotic is used

5 Rd



Infections – such as pneumonia, tuberculosis, blood poisoning and gonorrhoea – are becoming harder, and sometimes impossible, to treat.

Zika vaccine



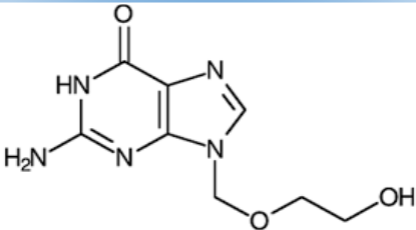
Special effect: You are now immune to the Zika virus.

5 Rd



You can not already get vaccinated against Zika virus, but researchers reached immunity of mice.

Aciclovir



+20 HP

Precondition: Being exposed to herpes

Special effect: medication for treatment of herpes



Aciclovir inhibits metabolism of cells, but Aciclovir is just active in infected cells.



Nausea/ vomiting/ diarrhea/ encephalopathy/ headache/ hair loss/ rash/ sore throat