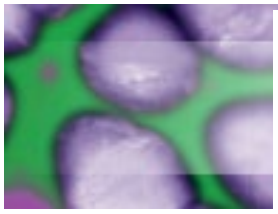


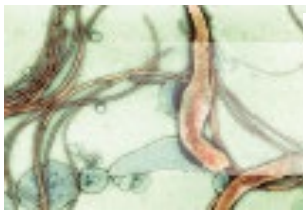
Streptococcus

Strep-Toe-Coccus

Bacterium

Max size (nm)	1,000
Number of species	21
Danger to humans	50
Usefulness to humans	75
Antibiotic resistance	50

Many *Streptococcus* species are harmless to humans and are the normal flora of the mouth and hands. However, Group A *Streptococcus* bacteria cause about 15% of sore throats.



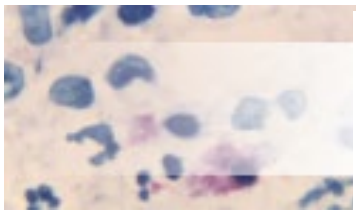
Treponema

Trep-O-Nee-Ma

Bacterium

Max size (nm)	2,000
Number of species	3
Danger to humans	115
Usefulness to humans	8
Antibiotic resistance	50

Syphilis is an extremely contagious disease, caused by Treponema bacteria. In severe cases syphilis can lead to brain damage or death. Syphilis can be cured with antibiotics however resistant strains are becoming more frequent.



Chlamydia

Clam-id-E-A

Bacterium

Max size (nm)	1,000
Number of species	3
Danger to humans	37
Usefulness to humans	1
Antibiotic resistance	70

Chlamydia is a sexually transmitted infection (STI) that is caused by the bacteria *Chlamydia trachomatis*. Although symptoms are generally mild i.e. discharge from the penis or vagina, it can lead to infertility.

Escherichia coli

Esh-Er-Ic-E-Ah

Bacterium

Max size (nm)	2,000
Number of species	7
Danger to humans	70
Usefulness to humans	184
Antibiotic resistance	80

Many strains of *E. coli* are harmless, and huge numbers are present in the human and animal gut. In some cases, however, *E. coli* cause both urinary infections and food poisoning.

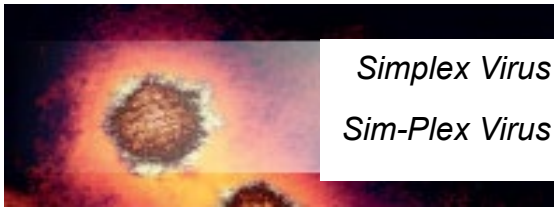
Influenza A

In-Flu-En-Za A

Virus

Max size (nm)	90
Number of species	1
Danger to humans	146
Usefulness to humans	12
Antibiotic resistance	n/a

The flu is an infection caused by Orthomyxoviridae. Every year 5 – 40% of the population get the flu but most people recover completely in a couple of weeks.

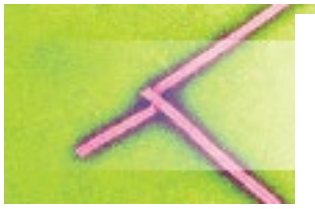


Simplex Virus

Sim-Plex Virus

Max size (nm)	200
Number of species	2
Danger to humans	64
Usefulness to humans	2
Antibiotic resistance	n/a

Herpes simplex is one of the oldest known sexually transmitted infections. In many cases, Herpes infections produce no symptoms, but scab-like symptoms do occur in about one third of people infected.



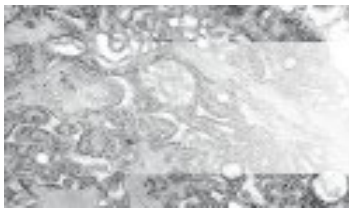
Tobamovirus

Tob-A-Mo-Virus

Virus

Max size (nm)	18
Number of species	125
Danger to humans	12
Usefulness to humans	34
Antibiotic resistance	n/a

Tobamovirus are a group of viruses that infect plants, the most common being tobacco mosaic virus, which infects tobacco and other plants. This virus has been very useful in scientific research.



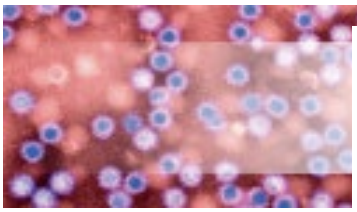
Lyssavirus

Lice-A-Virus

Virus

Max size (nm)	180
Number of species	10
Danger to humans	74
Usefulness to humans	5
Antibiotic resistance	n/a

The Lyssavirus infect both plants and animals. The most common Lyssavirus is the Rabies virus and is usually associated with dogs. Rabies results in over 55,000 deaths worldwide every year but can be prevented by vaccination.



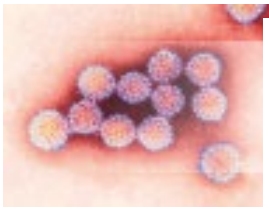
Norovirus

Nor-o-virus

Virus

Max size (nm)	35
Number of species	8
Danger to humans	25
Usefulness to humans	0
Antibiotic resistance	n/a

The flu is an infection caused by Orthomyxoviridae. Every year 5 – 40% of the population get the flu but most people recover completely in a couple of weeks.



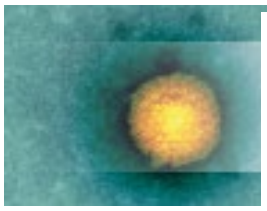
Papillomavirus

Pap-ill-O-Ma-virus

Virus

Max size (nm)	55
Number of species	170
Danger to humans	130
Usefulness to humans	0
Antibiotic resistance	n/a

Herpes simplex is one of the oldest known sexually transmitted infections. In many cases, Herpes infections produce no symptoms, but scab-like symptoms do occur in about one third of people infected.



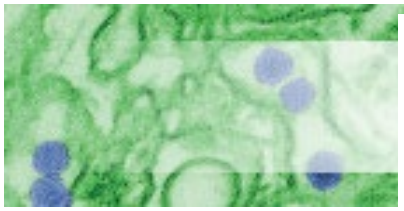
Varicellovirus

Var-E-Cell-O-Virus

Virus

Max size (nm)	200
Number of species	2
Danger to humans	21
Usefulness to humans	7
Antibiotic resistance	n/a

Tobamovirus are a group of viruses that infect plants, the most common being tobacco mosaic virus, which infects tobacco and other plants. This virus has been very useful in scientific research.



Zika

Zee-ka

Virus

Max size (nm)	40
Number of species	1
Danger to humans	98
Usefulness to humans	0
Antibiotic resistance	n/a

The Lyssavirus infect both plants and animals. The most common Lyssavirus is the Rabies virus and is usually associated with dogs. Rabies results in over 55,000 deaths worldwide every year but can be prevented by vaccination.

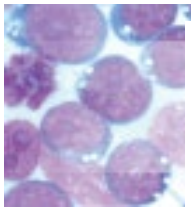
Mycobacterium

My–co–back–tear–e–um

Bacteria

Max size (nm)	4,000
Number of species	5
Danger to humans	150
Usefulness to humans	0
Antibiotic resistance	100

Tuberculosis (TB) is caused by the bacterium Mycobacterium tuberculosis and is one of the top 10 causes of death worldwide. Although treatable with antibiotics, many strains of TB are becoming resistant to multiple antibiotics.



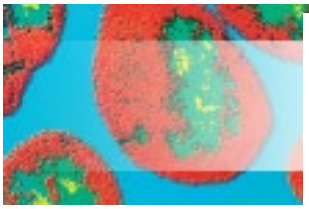
Lymphocryptovirus

Lim-Foe-Cryp-Toe Virus

Virus

Max size (nm)	110
Number of species	7
Danger to humans	37
Usefulness to humans	2
Antibiotic resistance	n/a

The Epstein-Barr virus, a type of Lymphocryptovirus, causes an illness known as the Kissing Disease or Glandular fever. Symptoms include sore throats and extreme tiredness. Transmission requires close contact such as kissing.



Neisseria

Nai–sheer–e-a

Bacterium

Max size (nm)	800
Number of species	13
Danger to humans	120
Usefulness to humans	0
Antibiotic resistance	20

Neisseria meningitidis is a bacterium that can cause meningitis, a life threatening disease. A vaccine is available to protect against the 4 main types of this bacteria A, C, W and Y.

Filovirus

File-o-vi-rus

Virus

Max size (nm)	1,500
Number of species	1
Danger to humans	200
Usefulness to humans	0
Antibiotic resistance	n/a

Filovirus causes a disease more commonly known as Ebola. It is one of the more dangerous viruses known to humans. 25 – 90% of victims died from the disease before the development and approval of a vaccine in 2019.

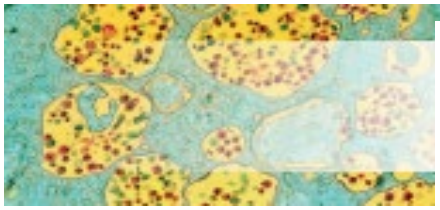
Rhinovirus

Rhino-virus

Virus

Max size (nm)	25
Number of species	2
Danger to humans	28
Usefulness to humans	14
Antibiotic resistance	n/a

There are over 250 different kinds of cold viruses but Rhinovirus is by far the most common. Rhinovirus can survive three hours outside someone's nose. If it gets on your fingers and you rub your nose, you've caught it!



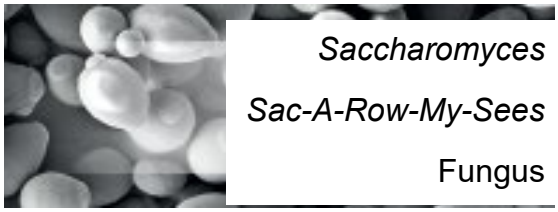
HIV

HIV

Virus

Max size (nm)	120
Number of species	2
Danger to humans	150
Usefulness to humans	0
Antibiotic resistance	n/a

The human immunodeficiency virus (HIV) is a sexually transmitted infection (STI) which leads to acquired immunodeficiency syndrome (AIDS). Individuals with this condition are more at risk of infection and cancer.



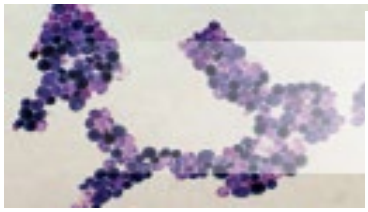
Saccharomyces

Sac-A-Row-My-Sees

Fungus

Max size (nm)	1,000
Number of species	19
Danger to humans	1
Usefulness to humans	184
Antibiotic resistance	n/a

For at least 6,000 years, Saccharomyces cerevisiae (Brewers yeast) has been used to make beer and bread! It is also used to make wine and it is widely used in biomedical research. One yeast cell can turn into 1,000,000 in only six hours.



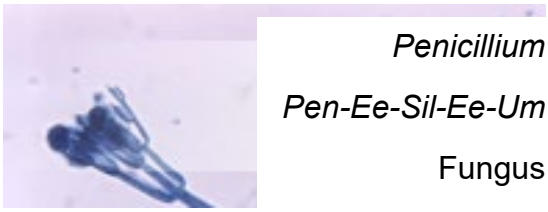
Candida

Can-Did-a

Fungus

Max size (nm)	10,000
Number of species	44
Danger to humans	74
Usefulness to humans	175
Antibiotic resistance	n/a

Candida is naturally found living in the human mouth and gastrointestinal tract. Under normal circumstances these fungi live in 80% of the human population with no harmful effects, although overgrowth results in candidiasis (Thrush).



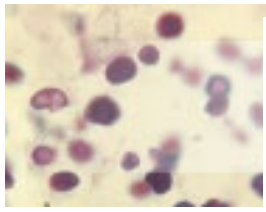
Penicillium

Pen-Ee-Sil-Ee-Um

Fungus

Max size (nm)	332,000
Number of species	16
Danger to humans	64
Usefulness to humans	198
Antibiotic resistance	n/a

Penicillium is a fungus that naturally produces the antibiotic penicillin. Since this discovery, the antibiotic has been mass produced to fight bacterial infections. Unfortunately, due to its overuse many bacterial species have become resistant to this antibiotic.



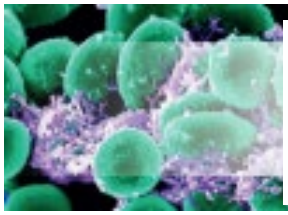
Cryptococcus

Cryp-Toe-Coccus

Fungus

Max size (nm)	7,500
Number of species	37
Danger to humans	98
Usefulness to humans	37
Antibiotic resistance	n/a

Cryptococcus is a fungus which grows as a yeast. It is known for causing a severe form of meningitis in people with HIV/AIDS. The majority of Cryptococci live in the soil and are not harmful to humans.



Staphyloccus

Staff-ill-O-coccus

Bacterium

Max size (nm)	1,000
Number of species	19
Danger to humans	174
Usefulness to humans	20
Antibiotic resistance	90

Meticillin resistant Staphylococcus aureus (MRSA) are a type of Staphylococcus aureus that have mutated to become resistant to most antibiotics. They can cause severe infection in humans.

Lactobacillus

Lac-Toe-Ba-Sil-Us

Bacterium

Max size (nm)	1,500
Number of species	125
Danger to humans	0
Usefulness to humans	195
Antibiotic resistance	10

Lactobacilli are very common and usually harmless to humans; they make up a small portion of the gut flora. These bacteria have been extensively used in the food industry - in yoghurt and cheese making.

Salmonella

Sam-on-ella

Bacterium

Max size (nm)	1,000
Number of species	3
Danger to humans	89
Usefulness to humans	15
Antibiotic resistance	60

Salmonella are most commonly known for causing food poisoning. Symptoms range from vomiting to diarrhoea. Salmonella is becoming resistant to antibiotics with an estimated 6,200 resistant cases per year in the US.

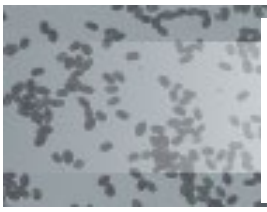
Pseudomonas

Sued-O-Moan-Us

Bacterium

Max size (nm)	5,000
Number of species	126
Danger to humans	50
Usefulness to humans	150
Antibiotic resistance	90

Pseudomonas are one of the most common microbes found in almost all environments. Although some may cause disease in humans, other species are involved in decomposition. Some Pseudomonas species are becoming resistant to multiple antibiotic treatment.



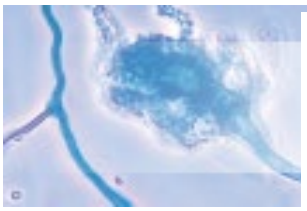
Stachybotrys

Stack-Ee-Bo-Trys

Fungus

Max size (nm)	72,000
Number of species	2
Danger to humans	83
Usefulness to humans	2
Antibiotic resistance	n/a

Stratchybotrys (or straw mould) is a black toxic fungus that although itself is not pathogenic, it does produce a number of toxins that can cause rashes or life-threatening reactions for those with respiratory problems.



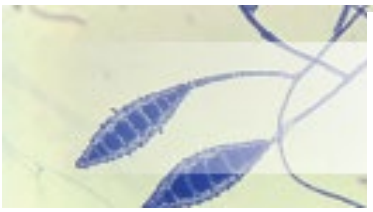
Aspergillus

Ass-Per-Gill-Us

Fungus

Max size (nm)	101,000,000
Number of species	200
Danger to humans	47
Usefulness to humans	124
Antibiotic resistance	n/a

Aspergillus is both beneficial and harmful to humans. Many are used in industry and medicine. It accounts for over 99% of global citric acid production and is a component of medications which manufacturers claim can decrease flatulence!



Tinea

Tin-Ea-A

Fungus

Max size (nm)	110,000
Number of species	12
Danger to humans	43
Usefulness to humans	14
Antibiotic resistance	n/a

Although a variety of fungi can cause foot rashes, Tinea cause the itchy, cracked skin between toes known as Athlete's foot, which is the most common fungal skin infection. Athlete's foot affects nearly 70% of the population.

Verticillium

Ver-Tee-Sil-Ee-Um

Fungus

Max size (nm)	8,500,000
Number of species	4
Danger to humans	1
Usefulness to humans	18
Antibiotic resistance	n/a

Verticillium is a widely distributed fungus that inhabits decaying vegetation and soil. Some may be pathogenic to insects, plants, and other fungi but very rarely cause human disease.