

Unit 2: Lesson 4 – Vaccine History and Research**GLOSSARY****COVID-19**

An infectious respiratory disease caused by the SARS-CoV-2 virus, a type of novel coronavirus that emerged in 2019. It spreads through respiratory droplets. Because SARS-CoV-2 was a new type of coronavirus the world population had not encountered before, people did not have any immunity which allowed COVID-19 disease to cause a global pandemic in 2020.

Cowpox

A virus in the same family as smallpox but causing milder symptoms. Milkmaids infected with this virus were immune to infection with smallpox. This realization led Edward Jenner to develop the first vaccine.

Eradication

A complete reduction of a disease so that none exists in the world or a specific region.

Hepatitis B

A virus that infects people and can lead to liver disease and cancer. The virus is transmitted through blood.

Human papillomavirus (HPV)

A virus that infects skin, genital and anal areas, and the lining of the cervix. HPV is transmitted from one person to another by genital contact. Some of the more than 100 types of HPV cause warts while others are capable of causing cancers. HPV is responsible for nearly all cases of cervical cancer.

Lipid nanoparticle

Extremely small fat particles that are used to envelop mRNA in vaccines. The lipid nanoparticles protect the mRNA and help it get taken up by specialized cells of the immune system.

Meningitis

Inflammation of the lining of the brain and spinal cord that can result from certain viral or bacterial infections. Symptoms may include fever, headache, vomiting, fatigue and stiff neck. In some cases, it can rapidly progress causing convulsions, coma or death.

Messenger RNA (mRNA)

A type of genetic material found in cells that carries the information needed to produce proteins.

Mumps

A virus that infects people and causes swelling of the glands just below the ear (parotid glands). If the virus infects the brain or spinal cord, a person can become deaf. If it infects a pregnant woman early during pregnancy, her unborn child may be harmed or she may be at risk for miscarriage. The virus spreads by coughing and sneezing.

Polio

A virus that infects people's intestines, and sometimes, the brain and spinal cord, leading to paralysis and in some cases, death. The virus spreads from hand to mouth.

Rabies

A virus that infects people by attacking the brain and spinal cord. It spreads through the bite of an infected animal. A person can be vaccinated after they are bitten and the vaccine still works because of the long time between exposure and illness. But, if a person is not vaccinated, they are almost certain to die from the infection.

Smallpox

A virus that killed about 3 of every 10 people infected. Survivors were often left with pock marks that were disfiguring. A vaccine led to the complete eradication of this virus. No one in the world has to worry about getting this disease unless a bioterrorist attack would re-introduce it.

Tissue culture

A lab method in which cells are grown in a lab to allow scientists to complete experimental procedures, such as growing viruses, without needing people or animals to do so.

Valency

In vaccines, valency refers to the number of distinct strains of one type of pathogen that a vaccine protects against. A vaccine can be monovalent (one strain) or multivalent (more than one strain).

Variolation

Inoculation of a healthy person with dried material from the scabs of another person who was infected with smallpox to protect the healthy person from getting smallpox. This technique carried significant risk of contracting the disease and was later replaced with vaccination.

Virulence

The degree to which a pathogen is capable of overcoming a host's defenses to cause disease.