

GLOSSARY

Anaphylaxis

An immediate and severe allergic reaction to a substance such as a food or drug. Symptoms of anaphylaxis include breathing difficulties, loss of consciousness, and a drop in blood pressure. This condition can be fatal and requires immediate medical attention.

Anthrax

An acute infectious disease caused by the spore-forming bacterium

Bacillus anthracis

. Anthrax most commonly occurs in hoofed mammals but can infect humans.

Antibiotic

A substance that fights bacteria.

Antibody

A protein found in the blood, produced in response to foreign substances (e.g., bacteria or viruses) invading the body. Antibodies protect the body from disease by binding to invading organisms and destroying them.

Antigens

Foreign substances (e.g., bacteria or viruses) in the body that are capable of causing disease. The presence of antigens in the body triggers an immune response, usually the production of antibodies.

Antitoxin

A solution of antibodies against a toxin. Antitoxin can be derived from either human (e.g., tetanus immune globulin) or animal (usually equine) sources (e.g., diphtheria and botulism antitoxin). Antitoxins are used to confer passive immunity and for treatment.

Antiviral

Literally "against-virus" — a medicine capable of destroying or weakening a virus.

Arthralgia

Joint pain.

Arthritis

A medical condition characterized by inflammation of the joints, which causes pain and difficulty moving.

Association

The degree to which the occurrence of two variables or events is linked. Association describes a situation where the likelihood of one event occurring is related to the presence of another event or variable. However, an association between two variables does not necessarily imply a cause-and-effect relationship. The term association and relationship are often used interchangeably. See causal and temporal association.

Asthma

A chronic medical condition in which the bronchial tubes (in the lungs) become easily irritated. This irritation leads to constriction of the airways, which results in wheezing, coughing, difficulty breathing and production of thick mucus. The cause of asthma is not yet known, but environmental triggers, drugs, food allergies, exercise, infection, and stress all have been implicated.

Asymptomatic infection

The presence of an infection without symptoms. Also known as inapparent or subclinical infection.

Attenuated vaccine:

A vaccine in which a live virus is weakened (attenuated) through chemical or physical processes in order to produce an immune response without the severe effects of the disease. Attenuated vaccines currently licensed in the United States include measles, mumps, rubella, varicella, rotavirus, yellow fever, smallpox, and some formulations of influenza and typhoid vaccines.

Autism spectrum disorder (ASD)

A developmental disability that can cause significant social, communication, and behavioral challenges. ASD is usually diagnosed between 18 and 30 months of age. At this time, the cause of autism is not known although many experts believe it to be a genetically based disorder that occurs before birth.

B cells

Small white blood cells that help the body defend itself against infection. B cells are produced in bone marrow and can develop into plasma cells which produce antibodies. Also known as B lymphocytes.

Bacteria

Tiny one-celled organisms present throughout the environment that require a microscope to be seen. While not all bacteria are harmful, some cause disease.

Examples of bacterial disease include diphtheria, pertussis, tetanus, respiratory tract infections caused by

Haemophilus influenzae
and pneumococcus.

Bias

Flaws or undesired effects in the collection, analysis, or interpretation of research data that lead to incorrect or inaccurate conclusions.

Biological plausibility

A causal association (or relationship between two factors) consistent with existing medical knowledge.

Bone marrow

Soft tissue located within bones that produces all blood cells, including the ones that fight infection.

Booster shots

Additional doses of a vaccine needed periodically to "boost" the immune system and "reactivate" a immune response already developed by an individual. For example, a tetanus and diphtheria (Td) vaccine booster is recommended for adults every ten years.

Brachial neuritis

Inflammation of nerves in the arm causing muscle weakness and pain.

Breakthrough infection

Development of a disease despite a person's having been vaccinated.

Causal association

A relation in which the presence or absence of a variable (e.g. smoking) is responsible for an increase or decrease in another variable (e.g. cancer). A change in exposure leads to a change in the outcome of interest.

Chickenpox

See Varicella.

Chronic health condition

A health-related state (e.g., cancer, asthma) that lasts for a long period of time.

Combination vaccine

A product containing components that can be divided equally into independently available routine vaccines.

Communicable

That which can be transmitted from one person or animal to another, infectious.

COVID-19

A disease caused by the SARS-CoV-2 virus. Symptoms can include fever or chills, cough, shortness of breath, difficulty breathing, fatigue, new loss of taste or smell, and more.

Crohn's Disease

A chronic medical condition characterized by inflammation of the bowel. Symptoms include abdominal pain, diarrhea, fever, loss of appetite, and weight loss. The cause of

Crohn's disease is not yet known, but genetic, dietary, and infectious factors may play a part.

Community immunity

A situation in which a sufficient proportion of a population is immune to an infectious disease (through vaccination and/or prior illness) to make its spread from person to person unlikely. Even individuals not vaccinated (such as newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community. Also known as herd immunity.

Conjugate vaccine

A vaccine in which two compounds (usually a protein and polysaccharide) are joined to each other to increase the vaccine's effectiveness.

Conjunctivitis

Inflammation of the mucous membranes surrounding the eye causing the area to become red and irritated. The membranes may be irritated because of exposure to heat, cold, or chemicals. This condition is also caused by viruses, bacteria, or allergies.

Contraindication

A condition in a recipient that increases their risk for a serious adverse reaction.

Convulsion

See Seizure.

Crib or Cot Death

See Sudden Infant Death Syndrome (SIDS).

Deltoid

A muscle in the upper arm where shots are usually given.

Demyelinating disorders

A medical condition in which the myelin sheath is damaged. The myelin sheath surrounds nerves and facilitates the transmission of impulses to the brain. Damage to the myelin sheath results in muscle weakness, poor coordination, and possible paralysis. Examples of demyelinating disorders include Multiple Sclerosis (MS), optic neuritis, transverse neuritis, and Guillain-Barre Syndrome (GBS).

Diabetes

A chronic health condition in which the body is unable to produce insulin or the insulin itself does not properly break down sugar (glucose) in the blood. Symptoms include hunger, thirst, excessive urination, dehydration, and weight loss. The treatment of diabetes may require daily insulin injections or oral medications to increase insulin production or activity in the body. Complications can include heart disease, stroke, neuropathy, poor circulation leading to loss of limbs, hearing impairment, vision problems, and death.

Diphtheria

A potentially fatal bacterial disease of the respiratory tract marked by the formation of a membrane around the tonsils, especially in the throat.

Disease

Sickness, illness or loss of health.

Efficacy rate

A measure used to describe how effective a vaccine is at preventing disease.

Encephalitis

Inflammation of the brain. Encephalitis can result in permanent brain damage or death.

Encephalopathy

A general term describing brain dysfunction. Examples include encephalitis, meningitis, seizures, and the effects of head trauma.

Epidemic

The occurrence of disease within a specific geographical area or population in excess of what is normally expected.

Endemic

Present in a given area, though usually at low or baseline levels.

Erythema Multiforme

A medical condition characterized by inflammation of the skin or mucous membranes (including the mouth, throat, and eyes). Erythema Multiforme has been reported following several infections. Symptoms persist anywhere from 2 days to 4 weeks and include skin lesions, blisters, itching, fatigue, joint pain, and fever.

Etiology

The cause of:

Exposure

Contact with infectious agents such as bacteria or viruses in a manner that promotes transmission and increases the likelihood of disease.

Febrile

Relating to fever; feverish.

Guillain-Barre Syndrome (GBS)

A rare neurological disease characterized by loss of reflexes and temporary paralysis. Symptoms include weakness, numbness, tingling, and increased sensitivity that spreads over the body. Muscle paralysis starts in the feet and legs, then moves upwards to the arms and hands. Paralysis can affect the respiratory muscles and cause breathing difficulties. Symptoms usually appear over the course of one day and may continue to progress for 3–4 days and up to 3–4 weeks. Recovery begins within 2–4 weeks after the progression stops. While most patients recover, approximately 15%–20% experience persistent symptoms. GBS is fatal in 5% of cases.

Haemophilus influenzae type b (Hib)

A bacterium that can cause severe respiratory infections (including pneumonia), otitis, and diseases such as meningitis.

Hepatitis A

An acute viral disease of the liver transmitted through contaminated food or water.

Hepatitis B

A viral liver disease transmitted by infected blood or blood products, or through unprotected sex with someone who is infected.

Hepatitis C

A viral liver disease caused by the Hepatitis C virus (HCV), which is found in the blood of persons who have the disease. HCV is spread by contact with the blood and body fluids of an infected person.

Hepatitis D

A viral liver diseases caused by a virus that needs the hepatitis B virus to exist. Hepatitis D virus (HDV) is found in the blood of persons infected with the virus.

Hepatitis E

A viral liver disease transmitted in much the same way as hepatitis A virus. Generally, it is more severe for pregnant women.

Herd immunity

See Community immunity.

Herpes Zoster

A disease characterized by painful skin lesions that occur mainly on the trunk (back and stomach) of the body but can also develop on the face and in the mouth. Complications include headache, vomiting, fever, and meningitis. Recovery can take up to 5 weeks. Herpes Zoster is caused by the same virus responsible for chickenpox. Most people are exposed to this virus during childhood. After the primary infection (chickenpox), the virus becomes dormant, or inactivated. In some people the virus reactivates years, or even decades, later and causes herpes zoster. Also known as the shingles.

Hives

The eruption of red marks on the skin that are usually accompanied by itching. This condition can be caused by an allergy (e.g., to a food or drug), stress, infection, or physical agents such as heat or cold. Also known as urticaria.

Hypersensitivity

A condition in which the body has an exaggerated response to a substance such as a food or drug. Also known as allergy.

Hyposensitivity

A condition in which the body has a weakened or delayed reaction to a substance.

Immunoglobulin

A protein found in the blood that fights infection. Also known as gamma globulin.

Immune system

The complex system in the body responsible for fighting disease. Its primary function is to identify foreign substances in the body (bacteria, viruses, fungi, or parasites) and develop a defense against them. This defense is known as the immune response. It involves production of protein molecules called antibodies to eliminate foreign organisms from the body.

Immunity

Protection against a disease. There are two types of immunity, passive and active. Immunity is indicated by the presence of antibodies or other components in the blood and can usually be determined with a laboratory test. See active and passive immunity.

Immunization

The process of being made immune or resistant to an infectious disease, typically by the administration of a vaccine. It implies that a vaccine will trigger an immune response.

Immunosuppression

A condition in which the immune system is unable to protect the body from disease. This condition can be caused by diseases such as HIV infection or cancer or by certain drugs, such as steroids or those used in chemotherapy. Individuals whose immune systems are compromised should not receive live, attenuated vaccines.

Inactivated vaccine

A vaccine made from viruses and bacteria that have been killed through physical or chemical processes, or contain parts/proteins of the infectious agents. These killed organisms cannot cause disease.

Inapparent infection

The presence of infection without symptoms. Also known as subclinical or asymptomatic infection.

Incidence

The ratio of new disease cases per population at risk reported over a given period.

Incubation period

The time from contact with an infectious agent (e.g., bacteria or viruses) to onset of disease (start of clinical manifestations).

Infectious

Capable of spreading from one person to another or from one living being to another, communicable.

Inflammation

Living organism response, including redness, swelling, heat and pain, resulting from injury, usually infectious, to tissue (parts of the body underneath the skin).

Inflammatory Bowel Disease (IBD)

A general term for a constellation of symptoms associated with inflammation of the bowel. Examples include colitis and Crohn's disease. Symptoms include abdominal pain, diarrhea, fever, loss of appetite, and weight loss.

Influenza

A contagious with epidemic potential viral disease characterized by fever, prostration, muscular aches and pains, and inflammation of the respiratory tract.

Intussusception

A type of bowel blockage that happens when one portion of the bowel slides into the adjacent one, much like the pieces of a telescope; it is treated in a hospital and may require surgery.

Investigational vaccine

A vaccine that has been approved by the Food and Drug Administration (FDA) for use in clinical trials on humans. However, because investigational vaccines are still in testing and under evaluation, they are not licensed for use in the general public.

Jaundice

Yellowing of the skin and eyes. This condition is often a symptom of hepatitis infection or hemolysis.

Lesion

An abnormal change in the structure of an organ due to injury or disease.

Live vaccine

A vaccine in which live virus is weakened (attenuated) through chemical or physical processes in order to produce an immune response without causing the severe effects of the disease. Live vaccines currently licensed in the United States include measles, mumps, rubella, varicella, rotavirus, yellow fever, smallpox, and some formulations of influenza, shingles, and typhoid vaccines. Also known as an attenuated vaccine.

Lupus

A disease characterized by inflammation of the connective tissue that supports and connects all parts of the body. Chronic swelling of the connective tissue causes damage to the skin, joints, kidneys, nervous system, and mucous membranes. The disease begins with fever, joint pain, and fatigue. Additional symptoms continue to

develop over the years, including nausea, fatigue, weight loss, arthritis, headaches, and epilepsy. Problems with heart, lung, and kidney function may also result. This condition is diagnosed most frequently in young women but occurs in children as well.

Lymphocytes

Small white blood cells that help the body defend itself against infection.

Macrophage

A large white cell that helps the body defend itself against disease by surrounding and destroying foreign organisms such as (viruses and bacteria).

Macular

Non-raised skin lesions, normally red-colored.

Measles

A contagious viral disease marked by the eruption of red circular spots on the skin. Also known as rubella.

Memory cell

A group of cells that help the body defend itself against disease by remembering prior exposure to specific organisms such as viruses and bacteria. Consequently, these cells are able to respond quickly when these organisms repeatedly threaten the body.

Meningitis

Inflammation of the membrane covering the brain and spinal cord that can result in death.

Meningoencephalitis

Inflammation of the brain and meninges (membranes) that involves both the encephalon (area inside the skull) and the spinal cord.

Microbes

Tiny organisms (including viruses and bacteria) that can be seen only with a microscope.

mRNA vaccine

A vaccine that uses mRNA to teach our cells how to make a protein - or even just a piece of a protein - that produces an immune response to a disease.

Mucosal membranes

The soft, wet tissue that lines body openings, specifically the mouth, nose, rectum, and vagina.

Multiple Sclerosis (MS)

A disease of the central nervous system characterized by the destruction of the myelin sheath surrounding neurons, resulting in the formation of "plaques." MS is a progressive and usually fluctuating disease with exacerbations (patients feeling worse) and remissions (patients feeling better) over many decades. In most patients, remissions eventually do not reach baseline levels and permanent disability and sometimes death occurs. The cause of MS is unknown. The most widely held hypothesis is that MS occurs in patients with a genetic susceptibility and that some environmental factors "trigger" exacerbations. MS is three times more common in women than men, with diagnosis usually made as young adults. See demyelinating disorders.

Mumps

Acute contagious viral illness marked by swelling, especially of the

Outbreak

The occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area, and/or season, but below epidemic numbers.

Neuritis

Inflammation of the nerves.

Neuropathy

A general term for any dysfunction in the peripheral nervous system. Symptoms include pain, muscle weakness, numbness, loss of coordination, and paralysis. This condition may result in permanent disability.

Optic neuritis

A medical condition in which vision deteriorates rapidly over hours or days. One or both eyes may be affected. Optic neuritis results from the damage to the optic nerves, though the cause is unknown in most cases. Patients may regain their vision or be left with permanent impairment. See demyelinating disorders.

Orchitis

Inflammation of the testicles, a complication of mumps infection occurring in males who are beyond puberty. Symptoms begin 7–10 days after onset of mumps and include inflammation of the testicles, headache, nausea, vomiting, pain, and fever. Most patients recover, but sterility occurs in rare cases.

Otitis Media

A viral or bacterial infection that leads to inflammation of the middle ear. This condition usually occurs along with an upper respiratory infection. Symptoms include earache, high fever, nausea, vomiting, and diarrhea. In addition, hearing loss, facial paralysis, and meningitis can result.

Pandemic

A worldwide epidemic such as AIDS, H1N1, or SARS-CoV2.

Papular

Marked by small elevations of the skin.

Passive immunity

Protection against disease through antibodies produced by another human being or animal. Passive immunity is effective, but protection is generally limited and diminishes over time (usually a few weeks or months). For example, maternal antibodies are passed to the infant prior to birth and protect the baby for the first 4–6 months of life.

Pathogens

Organisms (such as bacteria, viruses, parasites and fungi) that cause disease in human beings.

Pertussis

Bacterial infectious disease marked by a convulsive spasmodic cough, sometimes followed by a crowing intake of breath. Also known as whooping cough.

Petechiae

A tiny reddish or purplish spot on the skin or mucous membrane, commonly part of infectious diseases such as typhoid fever.

Placebo

A substance or treatment that has no effect on living beings, usually used as a comparison to vaccine or medicine in clinical trials.

Pneumonia

Inflammation of the lungs characterized by fever, chills, muscle stiffness, chest pain, cough, shortness of breath, rapid heart rate, and difficulty breathing.

Polio

Polio An acute infectious viral disease characterized by fever, paralysis, and atrophy of skeletal muscles. Also known as polio.

Polysaccharide vaccines

Vaccines composed of long chains of sugar molecules that resemble the surface of certain types of bacteria. Polysaccharide vaccines are available for pneumococcal disease.

Potency

A measure of strength.

Precaution

A condition in a recipient that might increase their risk for a serious adverse reaction, might cause diagnostic confusion, or might compromise the vaccine's ability to produce immunity.

Prevalence

The ratio of cases of a condition or diseases (new and existing) within a population.

Prodromal

An early symptom indicating the onset of an attack or a disease.

Quarantine

A way to prevent the spread of disease by isolating a person or animal who has not been diagnosed with a communicable disease but who was exposed or is likely to have been exposed to that disease.

Recombinant

Of or resulting from new combinations of genetic material or cells; the genetic material produced when segments of DNA from different sources are joined to produce recombinant DNA.

Reye Syndrome

Encephalopathy (general brain disorder) in children following an acute illness such as influenza or chickenpox. Symptoms include vomiting, agitation, and lethargy. This condition is often associated with the use of certain medicines (e.g., aspirin) and may result in coma or death.

Residual Seizure Disorder (RSD)

See seizures.

Risk

The likelihood that an individual will experience a certain event.

Rotavirus

A category of viruses that cause diarrhea in children.

Rubella

(German measles) Viral infection (describe the main symptoms) but as damaging to the fetus when it occurs early in pregnancy.

Rubeola

See Measles.

Seroconversion

Development of antibodies in the blood of an individual who previously did not have detectable antibodies

Serology

Measurement of antibodies and other immunological properties present in blood serum.

Serosurvey

A study measuring the proportion of persons in a community that have antibodies (due to vaccination or previous exposure) to a given agent

Seizure

The sudden onset of a jerking (localized or generalized) or staring spell. Seizures following a vaccination can be caused by fever. Also known as convulsions.

Severe Combined Immune Deficiency (SCID)

A group of rare, life-threatening disorders caused by at least 15 different single gene defects that result in profound deficiencies in T- and B- lymphocyte function.

Shingles

See herpes zoster.

Side effect

Undesirable reaction resulting from a vaccine or medicine.

Smallpox

An acute, highly infectious, often fatal disease caused by a poxvirus and characterized by high fever and aches with subsequent widespread eruption of pimples that blister, produce pus, and form pockmarks. Also known as variola.

Strain

A specific version of an organism. Many agents causing diseases, including HIV/AIDS and hepatitis, have multiple strains.

Subclinical infection

The presence of infection without symptoms. Also known as inapparent or asymptomatic infection.

Sudden Infant Death Syndrome (SIDS)

The sudden and unexpected death of a healthy infant younger than 1 year of age. A diagnosis of SIDS is made when an autopsy cannot determine another cause of death. The cause of SIDS is unknown. Also known as crib death or cot death.

Susceptible

A living being that at risk of contracting a disease.

Temporal association

Two or more events that occur around the same time whether causally related or not, chance occurrences.

Teratogenic

Of, relating to, or causing developmental malformations in a fetus or unborn baby.

Tetanus

Toxin-producing bacterial disease marked by strong muscle spasms.

Thimerosal

A mercury-containing preservative used in some vaccines and other products since the 1930s. There is no convincing evidence of harm caused by the low concentrations of thimerosal in vaccines, except for minor reactions like redness and swelling at the injection site. However, in July 1999, the Public Health Service agencies, the American Academy of Pediatrics, and vaccine manufacturers agreed that thimerosal should be reduced or eliminated in vaccines as a precautionary measure. Today, except for some flu vaccines, all routinely recommended childhood vaccines manufactured for the U.S. market contain either no thimerosal or only trace amounts. Thimerosal-free influenza vaccines are available.

Typhoid Fever

Typhoid fever is a life-threatening illness caused by the bacterium

Salmonella

Typhi. Persons with typhoid fever carry the bacteria in their bloodstream and intestinal tract.

Titer

The detection of antibodies in blood through a laboratory test, the concentration of antibodies detected in such a test.

Transverse Myelitis

Sudden-onset inflammation of the spinal cord. Symptoms include general back pain followed by weakness in the feet and legs that moves upward. There is no cure, and many patients are left with permanent disabilities or paralysis. Transverse Myelitis is a demyelinating disorder that may be associated with Multiple Sclerosis (MS). See demyelinating disorders.

Urticaria

The eruption of red marks on the skin that are usually accompanied by itching. This condition can be caused by an allergy (e.g., to a food or drug), stress, infection, or physical agents such as heat or cold. Also known as hives.

Vaccination

The physical act of administering any vaccine.

Vaccinia

A virus related to the smallpox and cowpox viruses, which is used in smallpox vaccine.

Vaccine

A suspension of live (usually attenuated) or inactivated microorganisms (e.g., bacteria or viruses), fractions of the agent, or genetic material of the administered to induce immunity and prevent infectious diseases and their sequelae. Some vaccines contain highly defined antigens (e.g., the polysaccharide of Haemophilus influenzae type b or the surface antigen of hepatitis B); others have antigens that are complex or incompletely defined (e.g.

Bordetella pertussis

antigens or live attenuated viruses).

Vaccine Adverse Event Reporting System (VAERS)

A national program managed by the CDC and the US Food and Drug Administration (FDA) to monitor the safety of all vaccines licensed in the United States. VAERS is a system for collecting and reviewing reports of adverse events that occur after vaccination.

Vaccine Safety Datalink Project (VSD)

A collaboration between CDC and eight large Health Management Organizations (HMOs) to continually evaluate vaccine safety and increase knowledge of vaccine adverse events. Medical records of more than 6 million people are monitored for potential adverse events following vaccination, which supports vaccine safety studies and enables timely investigations.

Varicella

An acute contagious disease characterized by papular and vesicular lesions. Also known as chickenpox.

Variola

See smallpox.

Vesicular

Characterized by small fluid-containing elevations of the skin (blisters).

Viral vector vaccine

A vaccine that uses a modified, harmless fraction of a different virus (a vector virus) associated with an antigen that can induce production of important instructions that are delivered to the body's cells.

Viremia

The presence of a virus in the blood.

Virulence

The relative capacity of a pathogen to overcome body defenses and elicit symptoms.

Virus

A tiny organism that multiplies within cells and causes diseases such as chickenpox, measles, mumps, rubella, and hepatitis. Viruses are not affected by antibiotics, the drugs used to kill bacteria.

Waning immunity

The loss of protective antibodies over time.

Whooping Cough

See Pertussis.