

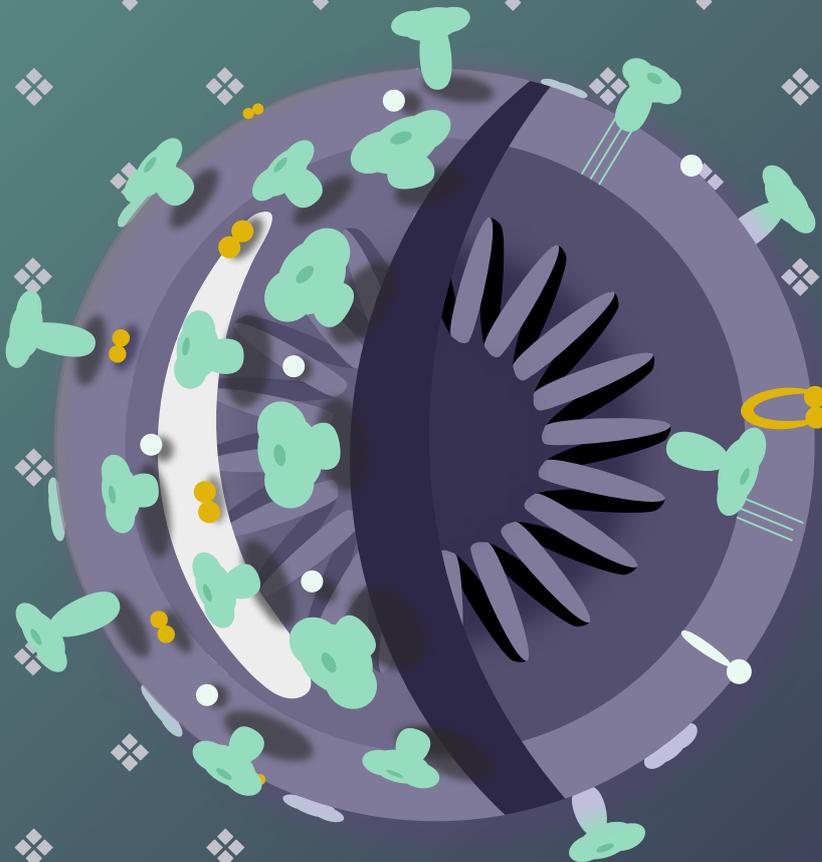


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## COVID-19 glossary

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# INTRODUCTION

This glossary will help you understand materials that describe the biology of the coronavirus that causes COVID-19 and how the infection spreads. It can assist in the reading of research papers and help you understand language used in drug and vaccine development. It also has a comprehensive list of international and UK organisations involved in public health, their institutional acronyms and descriptions of their work.

This glossary explains the most common scientific terms used in research that relates to COVID-19. The content is organised in several sections, each of which can help you understand different aspects of the COVID-19 pandemic. These sections are the following:

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# UNDERSTANDING THE BIOLOGY OF THE VIRUS

## Antigens

Proteins found on the surface of pathogens such as viruses and bacteria. Antigens are unique to each pathogen. The body recognises an antigen on the SARS-CoV-2 virus as foreign and this stimulates an immune response.

## Antigenic drift

Occurs when small changes in the pathogen's genetic material accumulate, so that its antigens become slightly different from their original version. It is a common phenomenon in RNA viruses such as SARS-CoV-2.

## Carriage

When a virus is present in the body without causing any harm to the person infected, who is asymptomatic or pre-symptomatic.

## Coronaviruses

A family of viruses that cause respiratory and gastrointestinal illnesses in people.

## COVID-19

Coronavirus disease first recognised in 2019. The disease caused by SARS-CoV-2.

## DNA

Deoxyribonucleic acid, a molecule that carries genetic information.

## Endemic disease

Disease constantly affecting a population in a certain geographical area. For example, malaria is endemic in some parts of Africa.

## Gene

Part of the genetic material of an organism that generally codes for the production of a specific protein.

## Mutation

A term used to describe how an organism's genetic material can change. Viral mutations are very common.

## Pathogens

Infectious organisms (such as viruses, bacteria or parasites) that can produce a disease. SARS-CoV-2 is a pathogen.

## Replication

When a virus makes several copies of itself.

## Reservoir

Organism or environment where a virus typically lives and reproduces.

## RNA

Ribonucleic acid. A molecule with some similarities to DNA. Its main role is in decoding genetic material to make proteins. In some viruses, RNA carries the genetic code instead of DNA. SARS-CoV-2 is an RNA virus. There are different types of RNA, including messenger RNA (mRNA) and self-amplifying RNA.

- **mRNA:** messenger RNA, the 'ready-to-read' instructions to produce proteins.

## SARS-CoV-2

Severe acute respiratory syndrome coronavirus 2, the virus that causes COVID-19.

## Shedding

The release of virus from an infected individual with the risk that it is transmitted to others.

## Spike protein

This is a club-shaped structural feature found on the surface of the SARS-CoV-2 virus. It is the part of the virus that attaches to human cells so the virus can enter and infect them. This protein is a therapeutic target for antivirals; drugs that can interfere in the interaction between the spike protein and the human cells could stop the virus from entering cells and replicating. The spike protein is also central to some COVID-19 vaccines in development. It is an antigen recognised by the body and stimulates an immune response, including the production of antibodies that can neutralise the virus.

## Vaccine-driven selection

Phenomenon occurring when a vaccine targeting a virus drives the emergence of vaccine escape mutants.

## Vaccine escape mutants

Variants of a virus that evolve to avoid the immune response triggered by a vaccine.

## Variant

As a virus replicates, it can accumulate mutations. A version of the virus with these mutations is called a 'variant'. Emergence of variants is a natural phenomenon. Most mutations have very little impact on the virus's properties, others facilitate transmission or infection of other species. See also antigenic drift.

## Virology

The scientific and medical discipline concerned with understanding the biology of viruses and viral diseases, their treatment and prevention. Virologists study common infections such as influenza and chickenpox as well as new and emerging viruses that cause Ebola, Zika and COVID-19.

## Virulence

Ability of a pathogen to cause damage in the organisms it infects.

## Viral load

Quantity of virus carried by an infected individual.

## Zoonotic disease

Diseases caused by pathogens that originally spread from animals to humans. COVID-19 is a zoonotic disease.

# UNDERSTANDING HOW COVID-19 SPREADS AND HOW IT CAN BE CONTAINED

## Accuracy of test

This is often used to describe both accuracy and reliability of a test. For COVID-19 this would mean how good a test is at confirming the presence or absence of an active or previous COVID-19 infection. No diagnostic test or antibody test is 100% accurate.

## Aerosol

Very small respiratory droplets that can move through the air. They are involved in the transmission of some viruses.

## Airborne transmission

Transmission occurring through very small virus-containing respiratory droplets produced by an infected individual. These can remain suspended in the air for hours and disperse further than 2 metres from the person producing them.

## Antibody test

Detects antibodies to SARS-CoV-2 virus from a current or previous infection.

## Antigen test

Detects viral material indicating a current infection. Tests for COVID-19 detect whether viral antigens found on the surface of SARS-CoV-2 are present in a sample.

## Asymptomatic

Having an infection but not showing any symptoms.

## Case fatality ratio

The proportion of people with symptoms that die.

## Contact tracing

Identifying the source and contacts linked to a confirmed case of an infectious disease. Contacts can be classified as high risk, low risk or no risk and given advice on what to do. This approach is used as a public health measure to contain the spread of an infection.

- **Forwards contact tracing** - finding the people that the person who tested positive could have passed the virus to.
- **Backwards contact tracing** - finding the individual who gave the virus to the person who subsequently tested positive.

## COVID-Status Certification

Documentation that indicates testing or vaccination data. See also Immunity passport and Vaccine passport.

## Diagnostic test

A test that can confirm if someone has an active SARS-CoV-2 infection.

## Doubling time

The time it takes for the number of infections to double.

## Droplet transmission

Transmission occurring through large virus-containing respiratory droplets that are deposited close to an infected individual, individual, with the risk that others nearby become infected.

## Epidemiology

The study of what is causing a certain health outcome (diseases, environmental exposures, injuries), the distribution of diseases in different groups in the population, what causes them and changes over time. Knowledge from epidemiological research is used to design measures to control infectious disease.

## Epidemiologist

Scientist studying epidemiology.

## Excess mortality

Sometimes called excess deaths, this is the number of additional deaths in a time period that is a higher than would usually be expected. For example, if there were normally 500 deaths in 1 week, but 750 were reported, this would equal 250 excess deaths.

## False negative

An incorrect result. For example, when someone with a SARS-CoV-2 infection tests negative.

## False positive

An incorrect result. For example, when someone who does not have a SARS-CoV-2 infection tests positive.

## Flatten the curve

To reduce the peak rate of people being infected with the virus. 'Curve' refers to the number of new cases in a certain window of time. Reducing the peak will ensure that healthcare services are not overwhelmed.

## Growth rate

Figure indicating how quickly the number of infections changes on a daily basis.

## Immunity passport

Documentation that indicates an individual's immune status. For COVID-19 this could be based on whether someone has been immunised or has antibodies because of a previous infection. There is insufficient evidence about the effectiveness of immunity passports. This is because having SARS-CoV-2 antibodies does not necessarily mean that someone is protected against a second infection. The duration of immunity following vaccination is also unclear.

## Incidence

The number of new cases of a disease in a population during a particular time period. Calculating incidence rates can indicate how quickly an infectious disease is occurring in a population.

## Incubation period

The time between being infected and showing symptoms. For COVID-19 this is about 5 days on average.

## Infection fatality ratio

The proportion of infected people that die.

## Index case

The patient in an outbreak of a disease who is first identified by health authorities.

## LAMP test or RT-LAMP test (Reverse Transcription Loop-mediated isothermal AMPLification)

A scientific technique to detect and increase the amount of viral genetic material. Equipment using LAMP technology can be sited near to the person being tested and can give results in minutes instead of having to send samples for laboratory processing.

## Lateral flow test

A type of molecular test to detect an active infection. The tests contain antibodies that bind to proteins (antigens) on the surface of the virus if it is present in a sample. A positive result is seen as a dark band or a fluorescent glow on the test kit, usually within minutes.

## Mass spectrometry

A laboratory technique to identify specific molecules (such as viral proteins) in samples.

## Mass testing

Using tests in a large sample of asymptomatic people to detect those who are currently infected.

## Molecular test

A test that detects viral genetic material through PCR or newer laboratory techniques.

## Morbidity

A term used to describe illness, injury or disability. Comorbidity or multimorbidity are sometimes used and refer to when someone has more than one condition at the same time.

## Mortality

A term that means death. Mortality rates are an expression of the number of deaths for a given cause divided by the whole population.

## Non-pharmaceutical interventions (NPIs)

Non-drug measures to limit the transmission of an infectious disease. These can be measures at the individual level such as physical distancing, the use of face masks and coverings, and improved hygiene measures. They can also be measures to constrain activities, such as the closures of various premises including sporting venues, pubs or shops.

## PCR (Polymerase Chain Reaction) test

A specialised laboratory method used to increase the amount of DNA or RNA in a sample so there is enough to test it. PCR tests are used to detect RNA in samples from people to see if the samples contain SARS-CoV-2 virus.

## Point-of-care test

A diagnostic test performed at or near to the person by a trained operator (like a urine dipstick to check for urinary tract infections).

## Pooled testing

An approach to testing samples from a group of people using one test.

## Prevalence

A measurement that expresses the proportion of people who have a disease at or during a given time period. Prevalence rates for disease are calculated by dividing the number of cases by the total number of people in the sample. They can be expressed as percentages or as cases per 100,000 people. It is often used alongside incidence, but they mean different things. While incidence counts only new cases in a given time period, prevalence counts both existing and new cases.

## Primary case

The person who brings an infectious disease into a group of people, such as a country, city or workplace.

## R (Reproduction Number)

A measure of how a disease spreads. The R number is the average number of people that one infected person will pass the virus onto. If R is more than 1 then an infection will spread in a population. Different SARS-CoV-2 variants can have different R values. For example, without any measures, R for the 'original' version of SARS-CoV-2 (identified in 2019) is estimated to be around 3, while R for the Delta variant (B.1.617.2) is estimated to be around 7.

## Rapid test

While this refers to tests that can give a result in minutes rather than hours, the test may still require specialised equipment and/or trained operators.

## Saliva test

A test that uses a saliva sample.

## S gene drop-out

Term used to describe the failure of a PCR test targeting the SARS-CoV-2 gene of the spike protein. This phenomenon allowed the identification of a new SARS-CoV-2 variant in the UK.

## Self-sampling

Describes when a person takes their own sample that is then sent elsewhere for processing and interpretation of results.

## Sensitivity

How well a test reports a positive result for people who have COVID-19.

## Sequencing

A scientific technique to 'read' the genetic code of organisms. Both DNA and RNA can be sequenced.

## Serial interval

The time between symptoms occurring in one person to symptoms appearing in the person they infect.

## Specificity

How well a test reports a negative result for people who do not have COVID-19.

## Super-spreader

Infected person who is highly contagious.

## Swab test and self-swabbing

A type of self-sampling that uses a technique to take samples from the nose and throat for testing.

## Transmissibility

The ability of a pathogen, like a virus, to spread from one person to another. See transmission.

## Transmission

Process by which a pathogen, like a virus, spreads from one infected person to another.

## Vaccine passport

Documentation confirming that an individual has received a vaccine against COVID-19. See immunity passport

# TERMS USED IN RESEARCH ABOUT COVID-19

## Clinical trials

- **Phase 1:** a small group of healthy people (<100) is given the vaccine to make sure there are no safety concerns, to see how well it stimulates an immune response and to work out an effective dose.
- **Phase 2:** the vaccine is tested in a larger group (several hundred people) to see whether the vaccine works consistently, to assess the immune response and to look for side effects.
- **Phase 3:** the vaccine is studied on a much larger scale (several thousand people) under natural disease conditions. This produces enough data to identify rare side effects and to evaluate how well the vaccine works in the real world; does it generate enough immunity to prevent and reduce disease?
- **Phase 4:** after licensing, research continues to monitor any adverse effects and to determine long-term effectiveness. This activity is called pharmacovigilance.

## Effectiveness

When discussing a drug such as a treatment for COVID-19 or a COVID-19 vaccine, this refers to how well the drug achieves the intended effect when it is used in real world settings. For example, while a therapeutic may reduce 90% of the disease (see efficacy) in a research study involving healthy young people under strict research conditions, this may not be achieved when it is used in a wider population of people with different characteristics, such as older people or those with underlying health conditions.

## Efficacy

The extent to which a drug works as intended when it is tested in ideal circumstances such as in controlled research study. For example, a COVID-19 vaccine may have 90% efficacy at preventing the disease. This means that cases of the disease were reduced by 90% in vaccinated vs. non-vaccinated people in the study.

## Human challenge study

Study where a pathogen is carefully given in controlled settings to healthy volunteers, who are therefore 'challenged' by it. These studies aim to better understand the infection process and find how to prevent and treat it.

## Placebo

A substance or treatment that should have no clinical effect. This is given to control groups so that the effects of an intervention can be distinguished from improvements that occur just from the placebo effect.

## Randomised control trial

An experiment where participants are randomly placed into a control group or an intervention group. Cluster randomised controlled trials involve random assignment to the control or intervention at a group level (such as assigning whole schools, hospitals or local councils). They are considered a particularly robust study type as the randomisation reduces the likelihood of bias from extraneous variables. As experiments, they can demonstrate causation.

# TERMS ABOUT RESEARCH PUBLICATION STATUS

## Journal

Periodical publication of new research in a specific academic field. Studies published in academic journals have all passed peer review.

## Manuscript

Final draft of a research study that is submitted to peer review before publication.

## Peer-review

Extensive 'quality control' system that manuscripts need to pass before being published in academic journals. During this process, experts assess quality and validity of the study's design, methods, analyses, and conclusions. Often reviewers ask the authors of the study for more data, analysis, or explanations. This process can take up to a year in normal circumstances.

## Pre-print

A research study that has been made publicly accessible before completion of the peer-review process.

# TERMS ABOUT STATISTICS

## Absolute risk

A statistic that predicts the probability of an individual experiencing a particular event (such as developing a certain medical condition). See [absolute risk](#) in the research glossary.

## Adjusted odds ratio

Odds ratio that controls for other factors (such as age) that may have a role in a certain event happening in certain groups.

## Odds ratio

Compares the probability of an event happening in one group with the probability of it happening in another group. An odds ratio bigger larger than 1 means that the event is more likely in the first group rather than the second.

## Relative risk

A statistics that compares two absolute risks to give an indication of how much a selected factor increases or decreases the risk. See [relative risk](#) in the research glossary.

# TERMS USED IN DRUG DEVELOPMENT AND COVID-19 TREATMENTS

## Adverse event

This term is used to describe a range of reactions to drugs, including vaccines. They are sometimes called adverse drug reactions. Different drugs can produce varied effects. Side effects are those which can be linked to the vaccine. People can have reactions either as a direct result of the drug itself or because the individual has an underlying medical condition. Sometimes people may experience something when they take a drug, but which is completely unrelated. Extensive monitoring of drug safety can determine which reactions are linked to a drug from those that are not. Side effects from vaccines vary from predictable mild reactions such as a short-lived fever to more serious and rare outcomes such as allergic reaction.

## Antibody therapy

Therapies based on antibodies against SARS-CoV-2 that can be used to treat COVID-19 patients.

## Antivirals

Drugs used to prevent or treat viral infections. Some antivirals work by stopping the virus from entering cells while others inhibit stages of the viral life cycle, such as stopping the virus from replicating. Several antiviral drugs to treat COVID-19 are being evaluated but none has shown any significant clinical benefits so far in trials.

## Convalescent plasma

A treatment that uses antibodies against SARS-CoV-2 taken from patients who have recovered from COVID-19. The theory is that the donated antibodies in the plasma can neutralise the virus while the patient's own immune system mounts a response to the infection.

## Dexamethasone

A steroid drug used to treat a range of inflammatory and allergic disorders. In hospitalised COVID-19 patients, it reduces deaths of ventilated patients by 35% and reduces deaths of patients requiring oxygen by 20%.

## Good Manufacturing Practice (GMP)

This is the minimum standard that drug manufacturers must meet in the production process. This is to ensure that drugs are of consistent high quality across batches and that they meet the requirements specified by regulators in a drug's marketing authorisation.

## Licence to market a medicine

Also known as a marketing authorisation. Manufacturers must follow special procedures in order to sell a drug, such as a vaccine, in the UK and the EU. This is complex, with different processes depending on the medicine.

## Monoclonal antibodies

Biological therapies synthesised in a laboratory. They mimic natural antibodies by recognising a specific target protein on a cell's surfaces and then flagging these cells for killing, or by binding directly to the virus and stopping the virus from attaching to a human cell. Antibodies can be designed by using genetic sequences of interest from the virus. The main target of SARS-CoV-2 monoclonal antibodies is the spike protein on the surface of the virus, to block viral entry into cells. A combination of two monoclonal antibodies (casirivimab and imdevimab) developed by the company Regeneron has been proven effective in reducing the risk of death in those hospitalised with severe COVID-19 in the Randomised Evaluation of COVID-19 Therapy (RECOVERY).

## Pharmacovigilance

Detecting, collecting and monitoring data about adverse events that may be linked to a medicine (such as a new drug or vaccine) so that appropriate action can be taken.

## Proning

Positioning hospitalised COVID-19 patients on their stomachs. Research suggests that this benefits them because it improves oxygenation in the body.

## Remdesivir

An experimental anti-viral drug. Research to date shows that it can reduce the time to recover for some patients.

## Sarilumab

Anti-inflammatory drug used to treat moderate to severe rheumatoid arthritis. Research to date shows that it can reduce the risk of death in severe COVID-19 cases.

## Tocilizumab

Anti-inflammatory drug used to treat rheumatoid arthritis. Research to date shows that it can reduce the risk of death in severe COVID-19 cases.

# TERMS USED TO DISCUSS THE IMMUNE RESPONSE TO COVID-19, IMMUNISATIONS AND VACCINES

## Active component

Ingredient of a vaccine that stimulates the immune system.

## Active immune response

Immune response developed naturally by the body following the first encounter with a new pathogen. After a certain time, the body will start to produce antibodies able to specifically recognise the new pathogen.

## Adenovirus-based vaccines

Vaccines where a harmless virus has been modified to contain the genetic information of a pathogen's protein (antigen). Following vaccination, the body will produce this protein and develop an immune response against it. This strategy is used, for example, in the University of Oxford / AstraZeneca vaccine, which includes the genetic information of the SARS-CoV-2 spike protein.

## Adjuvant

An ingredient in a vaccine that enhances the immune system response.

## Adjuvanted vaccine

A vaccine containing adjuvants.

## Antibiotics

Drugs that prevent the growth of bacteria.

## Antibody

A 'tag' that binds specifically to part of a pathogen so that it can be recognised by the immune system. It is part of the 'adaptive' immune system and produced by B cells. Some antibodies are binding antibodies (they bind to the virus and activate parts of the immune system to enhance the body's response) and some are neutralising antibodies (they are able to bind and stop the virus). There are different types of antibodies. Two important ones are:

- **IgM**: the first antibodies produced by naïve B cells during the primary immune response. They are detected at similar levels during the secondary immune response.
- **IgG**: the major class of antibodies in the blood. They are produced during the primary immune response after IgM and their level increases substantially during the secondary response.

## Attenuated vaccine

See live-attenuated vaccine.

## B-cells

Type of white blood cell that produces antibodies. Naïve B cells are immature B cells not yet exposed to a pathogen. Once exposed, they can become memory B cells, able to secrete antibodies against that specific pathogen.

## Booster dose

Extra dose of vaccine after the 'prime dose'. It is used to boost the immune response against a pathogen.

## Cold chain

Refers to the supply chain of some drugs and vaccines, which need to be in temperature-controlled environments, from production to delivery.

## Correlate of protection

A quantifiable sign, such as a certain level of neutralising antibodies, that could confirm that a person is protected from the virus. At the moment the most reliable correlate is the level of neutralising antibodies that are able to recognise live SARS-CoV-2 virus. However, the absence of detectable neutralising antibodies does not necessarily mean someone is not immune to SARS-CoV-2 and other parts of the immune system (such as T-cells) may be just as important.

## Cytokines

Chemicals signalling the presence of a pathogen in the body. They are part of the innate immune system and cause inflammation.

## Disease modifying vaccine

Vaccines reducing the severity of diseases. In the case of COVID-19 for example, they can lead to fewer deaths following SARS-CoV-2 infection.

## DNA-based vaccines

Vaccines where DNA instructions to build a pathogen's protein are directly injected into the recipient. The US-based Inovio candidate or the Korean Genexine candidate use this strategy.

## Dosing interval

See vaccine interval.

## Eradication of disease

Complete and permanent elimination of a disease around the world without the ongoing need for interventions (such as vaccines). So far, smallpox is the only human disease that has been eradicated.

## Fill-finish

Process of filling vials with the vaccine and completing packaging for distribution.

## Herd immunity

When enough individuals in a population are immune to an infection so that those who are not immune are protected as well. It is also known as 'population immunity'.

## Immune response

Response developed by the body when infected by a pathogen.

- **Primary immune response** is the first response triggered by exposure to a pathogen. Immature (naïve) B cells are stimulated by antigens, become activated, and start producing antibodies that stick to these antigens. There will be an initial surge of antibodies and then, with time, these antibody levels will decrease as the infection is cleared.
- **Secondary immune response** occurs during second and subsequent exposures to the same pathogen. Memory B cells are able to recognise the antigens that they have been previously exposed to and start producing antibodies in higher quantities than during the primary response.

## Immunisation

When individuals become protected from a disease, either following natural infection or vaccination.

## Immunity

Ability to defend the body from a pathogen's infection.

- **Innate immunity** consists of a series of non-specific mechanisms that prevent pathogens from invading the body. It includes physical barriers, such as the skin, and the cell linings of internal body parts, such as airways and lungs. The innate immune system also consists of several types of specialised cells and signalling chemicals.
- **Acquired immunity** describes how the body builds immunological memory – so that if the person is exposed to the same infection again the body's response is enhanced. It is also known as 'adaptive' immunity. This is the basis for immunisation with vaccines. Key features of this adaptive response are that it is specific for the structures on a specific pathogen and that immune memory facilitates an improved response on subsequent encounters. It involves antibodies, B cells and T cells. This type of immunity can be strong or weak, short- or long-lived, and this is a complex result of several factors. It can take up to 3 weeks to develop this type of immunity.

## Inactivated vaccine

Vaccines where a pathogen has been killed and therefore cannot multiply in the human body. The Valneva vaccine candidate currently in Phase 3 clinical trials, uses this strategy.

## Inactivated virus

Virus that has been killed and therefore cannot multiply in the human body.

## Live-attenuated vaccine

Vaccines using a weakened version of the pathogen that causes the disease. When injected, they resemble the natural infection and for this reason are able to trigger a strong immune response.

## mRNA vaccine

Vaccine containing mRNA to produce a pathogen's antigen, that can be directly produced by the human body. This strategy is used in the Pfizer/BioNTech and Moderna vaccines, which both use mRNA instructions to produce the SARS-CoV-2 spike protein.

## Naturally acquired immunity

Immunity that is acquired when a person becomes infected by a pathogen and develops an immune response against it (see Active immune response and Immune response).

## Neutralising antibodies

Antibodies able to bind and stop the virus.

## Passive immunity

When a person (who is not able to produce antibodies against a pathogen) receives them externally and become protected from the pathogen. This can be 'maternal', when antibodies are passed from the mother to the child (for example in breast milk) or 'artificial', when antibodies are administered via an injection (such as in the case of antibody therapy). It is not a long-lasting immunity.

## Platelets

Blood cells that stop bleeding following an injury through the formation of blood clots.

## Preservatives

Ingredients in a vaccine to prevent contamination during distribution (such as when a multi-dose vial is opened).

## Prime dose

First dose of the vaccine, to trigger the initial immune response.

## Priority groups

Groups of people identified by the Joint Committee on Vaccination and Immunisation who are given the vaccine before it is available for the general population.

## Protein-based vaccines

Contain a protein found on the surface of a pathogen that is used to trigger the

immune response. This strategy is used by the GSK / Sanofi Pasteur candidate, currently in Phase 3 clinical trials.

## Recombinant protein-based vaccines

See protein-based vaccines.

## Self-amplifying RNA

RNA able to create several copies of themselves before being read to make proteins. The Imperial College vaccine candidate currently in Phase 1 clinical trials, uses this technology.

## Stabilisers

ingredients to extend the shelf life of a vaccine.

## Sterilising vaccine

Vaccine able to stop the pathogen from replicating in the body, so that the infected person cannot transmit it to others.

## Thrombocytopenia

Low levels of platelets. This is an extremely rare side effect of some SARS-CoV-2 vaccines.

## Thrombosis

Formation of blood clots that stop blood circulation in blood vessels. It can create serious damage and death. Thrombosis is an extremely rare side effect of some SARS-CoV-2 vaccines.

## Trial batches

Initial vaccine batches used to check the production process.

## T cells

Type of white blood cell that kills infected cells in the body.

## Vaccination

Protecting individuals from a disease by treating them with a vaccine.

## Vaccine

The most effective public health intervention to protect people against infectious diseases. Vaccines train the immune system to recognise a pathogen and to defend the body from it at the next encounter.

## Vaccine candidate

New vaccine under development.

## Vaccine coverage

Percentage of the population who has received a vaccine.

## Vaccine interval

Time between the prime dose and the booster dose of a vaccine. Also known as dosing interval.

## Vaccine take up

Accepting a vaccine when it is offered by public health authorities.

## Vectored vaccines

See viral-vector vaccines.

## Viral-vector vaccines

Vaccines where a virus has been modified to contain the genetic information of a pathogen's protein. There are two kinds of viral vectors:

- **Replicating viral vectors:** they can multiply in the body
- **Non-replicating viral vectors:** they are not able to multiply in the body. One example of non-replicating viral vectors vaccines are adenovirus-based vaccines.

## Virus Like Particles (VLPs)

Protein-based structures resembling the shape of a virus without containing any genetic material. They can be used as active component in vaccines.

## Whole inactivated viral vaccines

Vaccines using an entire inactivated virus to trigger an immune response.

# ORGANISATIONS INVOLVED IN THE COVID-19 RESPONSE

## International organisations involved in public health and medicines regulation

### CDC

Centers for Disease Control and Prevention. The US's federal health protection agency.

### EMA

European Medicines Agency. A European agency that facilitates development and access to medicines, and evaluates new medicines so that they can be approved for use in people.

### FDA

Food and Drug Administration. A US agency that regulates the safety, effectiveness and quality of medicines. It has a wider role in public health such as food safety and regulating tobacco products.

### WHO

World Health Organization. A UN agency focused on directing and coordinating international health.

## UK organisations involved in public health, medicines regulation, decision-making and scientific advice in response to COVID-19

### CSA

Chief Scientific Adviser. Most senior government adviser providing government departments with scientific advice. Most government departments have one. There are also CSAs for each of the devolved administration. [The list is available here.](#)

### CMO

Chief Medical Officer. A qualified medical practitioner who is the most senior government adviser on health matters.

### CHM

Commission on Human Medicines. An advisory non-departmental public body that advises ministers on the safety, efficacy and quality of medicinal products.

## DHSC

Department for Health and Social Care. A ministerial government department with overall responsibility for health and care services. It sets strategy, funds and oversees the health and care system in England, with equivalent counterparts in the devolved nations.

## GCSA

Government Chief Scientific Adviser. Chief Scientific Adviser providing scientific advice to the Prime Minister and members of Cabinet and coordinating the Chief Scientific Adviser network.

## JCB

Joint Biosecurity Centre. Established in May 2020. It provides evidence-based analysis to inform local and national decision-making in response to COVID-19 outbreaks. It will become part of the NIHP once this is set up.

## JCVI

Joint Committee on Vaccination and Immunisation. A scientific advisory committee that advises the UK health departments on immunisation.

## MHRA

Medicines and Healthcare products Regulatory Agency. An executive agency of the Department of Health and Social Care. It regulates medicines, medical devices and blood components used in transfusions in the UK. It decides whether to approve new medicines such as vaccines.

## NERVTAG

New and Emerging Respiratory Virus Threats Advisory Group. A scientific committee that advises the Government on the threat posed by new and emerging respiratory viruses. Advice from NERVTAG has been used by SAGE.

## NICE

National Institute for Health and Care Excellence. An executive non-departmental public body sponsored by the Department of Health and Social Care. Its role is to improve patient outcomes by producing national guidance and advice, and quality standards that set out what high quality and cost-effective care should look like.

## PHE

Public Health England. An executive agency of the Department of Health and Social Care, it is responsible for all aspects of public health from reducing health inequalities to responding to public health emergencies.

## SAGE

Scientific Advisory Group for Emergencies. Provides scientific and technical advice to the UK Government during emergencies.

## SPI-B

Independent Scientific Pandemic Influenza Group on Behaviours. A scientific committee that provided advice about behavioural science. In the context of COVID-19 the committee has provided advice about how people can be helped to adhere to interventions that have been recommended. It provides reports to SAGE.

## SPI-M

Scientific Pandemic Influenza Group on Modelling. A scientific committee that provides advice on scientific matters relating to the UK's response to infectious disease. Its advice is based on expertise on epidemiology and modelling. It reports to SAGE.

## UK HSA

UK Health Security Agency. A new organisation replacing Public Health England. It is responsible for public health protection and infectious disease capability. It combines key elements of Public Health England with the Joint Biosecurity Centre (JBC), and NHS Test and Trace. It is expected to be fully operational in October 2021.

## VTF

Vaccine Taskforce. The steering group focusing on the development and production of a COVID-19 vaccine.

