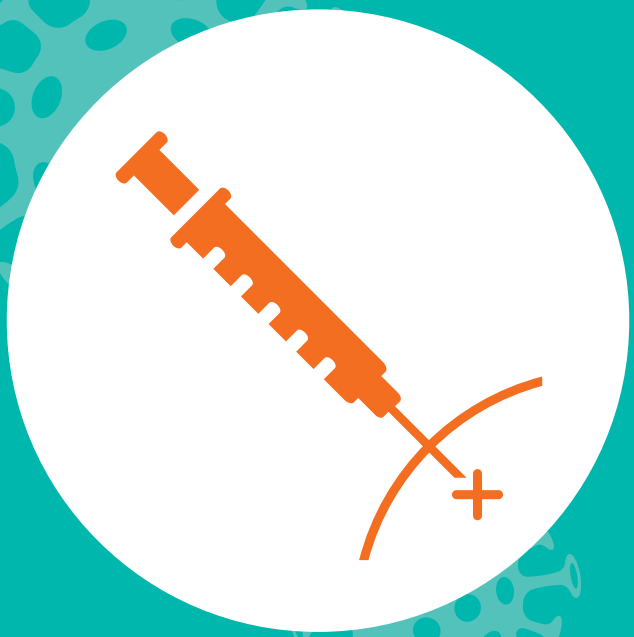
International Chamber of Shipping

Shaping the Future of Shipping

Coronavirus (COVID-19) Vaccination for Seafarers and Shipping Companies: A Practical Guide

Your Questions Answered



In collaboration with

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Acknowledgements

Thanks are extended to Professor Pierre van Damme, from the University of Antwerp, for some of the information used in this Guide.

Background

There have been over 100 million cases of Coronavirus (COVID-19) and more than two million COVID-19 deaths recorded worldwide. To date, nearly 200 million people have received one dose of the COVID-19 vaccine.

COVID-19 is spread primarily through droplets. A person with COVID-19 coughs or sneezes, spreading droplets into the air and onto objects and surfaces in close proximity. Other people breathe in the droplets or touch the objects or surfaces and then touch their eyes, nose or mouth.

COVID-19 vaccines reduce the severity of symptoms or prevent symptoms completely in a vaccinated person. However it is currently unknown if they prevent an individual carrying the virus and passing it on to others.

Physical distancing, washing hands with soap and water or the use of hand sanitiser, good respiratory hygiene, and use of a mask remain the main methods to prevent spread of COVID-19 and seafarers should continue these practices once vaccinated.

What is COVID-19?

COVID-19 is an illness caused by the new coronavirus, SARS-CoV-2. First reported in China at the end of 2019, it has now spread to 224 countries. In 80% of people, COVID-19 is not a severe disease and no hospital treatment is necessary. About 15% of those infected require oxygen and hospital care and an additional 5% need intensive care. While people over 60 years of age and/or those with underlying medical conditions are at higher risk of developing serious illness and requiring additional care, severe illness can develop in people of any age.

What is a vaccine and how does it work?

Vaccination is a safe, simple and effective way to protect people from a disease before actual exposure to it. Vaccines stimulate the immune system to produce antibodies and other cells that fight disease, just as if a person was exposed to the disease itself. When a vaccine is given, the immune system responds by:

- Recognising the germ (bacteria or virus) as foreign and identifying it;
- Producing antibodies. These are proteins produced naturally by the immune system to fight disease; and
- Remembering the disease and how to fight it. If the body sees the same germ again, it can recognise it and fight it quickly to stop the illness.

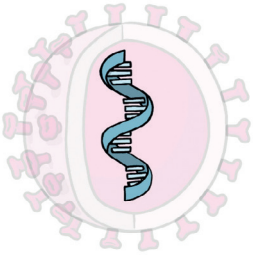
Vaccines only contain killed or weakened germs (bacteria or viruses), or material that mimics the germ. Therefore, a vaccine cannot cause the disease itself. However, it is not uncommon to have a mild reaction after a vaccine as the body responds to the introduction of something recognised as foreign.

Most vaccines, including the different COVID-19 vaccines, are given as an injection. Some require just one injection, others need more than one in a short time frame, annual doses, or multiple doses over many years. Additional doses are sometimes referred to as booster doses.

COVID-19 vaccines

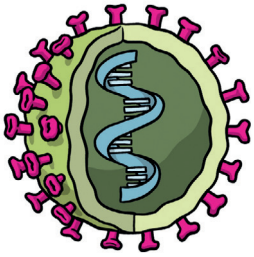
COVID-19 vaccines target the spike protein, the part of the virus that allows it to bind to and then enter human cells. Currently over 50 vaccines are in clinical trials and many more are in the pre-clinical stages.

Different types of COVID-19 vaccines



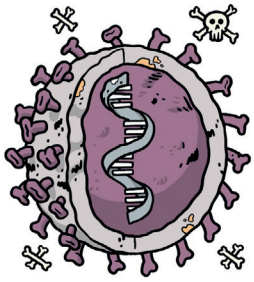
Nucleic acid (mRNA or DNA):
Pfizer BioNTech; Moderna

These contain genetic material from the virus that instructs human cells to make the spike protein. Once made, the viral genetic material is destroyed. The body then recognises the protein produced as foreign and stimulates an immune response. This type of vaccine is safe and does not affect the person's genes in any way. It is easy to develop and the technology has been used in cancer patients for many years.



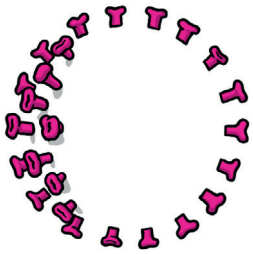
Viral Vector:
Oxford/AstraZeneca; Sputnik V/Gamaleya; Johnson & Johnson; CanSinoBIO

These contain a safe version of a live virus that does not cause harm, with genetic material from the COVID-19 virus inserted. Hence the first virus becomes a viral vector. Once inside the cells, the genetic material carried gives cells instructions to make a protein, usually the spike protein, unique to the COVID-19 virus. Using these instructions, the cells make copies of the protein that are recognised as foreign and stimulate an immune response. This technology has been successfully used in the Ebola vaccine and gene therapy.



Inactivated or weakened virus:
BBIBP-CorV/Sinopharm; CoronaVac; Covaxin

These vaccines use a form of the virus that has been inactivated or weakened by heat or chemicals so it does not cause disease, but is recognised by the body as foreign and stimulates an immune response. Many existing vaccines are similarly produced and are very safe, but it is difficult to increase production of this vaccine type.



Protein subunit:
EpiVacCorona

These include small pieces of virus protein, not the whole virus. The most common protein included is the spike protein or a key component of it. Once introduced to the body it is recognised as foreign and stimulates an immune response.

Source: World Health Organization (WHO)

Many COVID-19 vaccines authorised for use in different countries are reported to be more than 50% - and often over 90% - efficient in preventing disease in those vaccinated. However, in some cases, efficacy data is not yet published or peer reviewed.

Information on the availability of vaccines in individual countries can be found in the United Nations (UN) COVAX programme which is being updated daily. The programme is available from the online **Vaccine Market Dashboard** and outlines:

- Vaccines currently available;
- Who and which countries have agreements in place; and
- Quantities purchased.

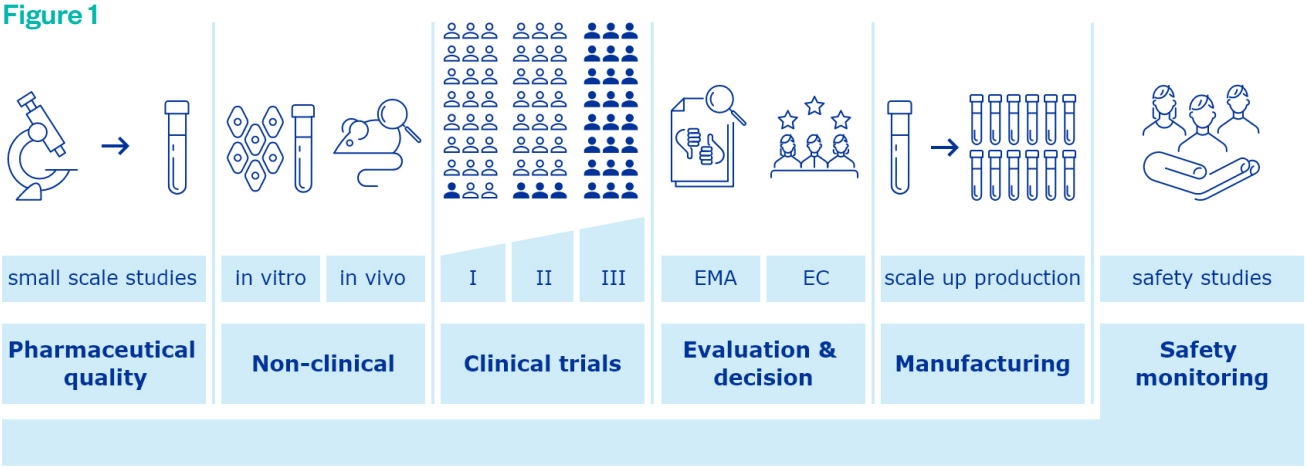
Key questions

1. Are vaccines safe?

All vaccines must undergo many phases of trials, first in a laboratory and then in human volunteers, before approval for use in the wider population. Appropriate national, regional or international authorities review and analyse the trial results (see question 10 for more detail on the phases of a clinical trial).

The authorities review the vaccine components, their quality, safety and effectiveness. When national and regional authorities are satisfied that the vaccine is both effective at preventing disease in humans and safe to administer to people, it is authorised for use in the country or region. The World Health Organization (WHO) comprehensively evaluates available evidence and regularly updates its vaccine position papers. The process to develop and monitor vaccines is described in Figure 1 below.

Figure 1



Source: European Medicines Agency (EMA)

2. Who can have the COVID-19 vaccines?

Everyone should be encouraged to have the vaccine including:

People who have been diagnosed with COVID-19 following testing	Studies show that people who have had COVID-19 may be infected again, and that immunity after clinical disease may not protect a person against the new mutations. Protection from the vaccine is likely to be broader and people can be vaccinated shortly after recovery from the disease. No testing is necessary. However, due to the limited supply of vaccines, vaccinations may be deferred for a number of months or the vaccination schedule modified.
Women wishing to have children	There is currently no evidence that COVID-19 vaccines have a negative effect on fertility or cause problems with becoming pregnant.

Vaccination in the following groups should be discussed with a healthcare professional and a decision taken on an individual basis:

People with allergies to any component of the vaccine	Although there have been few severe allergic (anaphylactic) reactions to the vaccine, those with allergies to any vaccine component should not be vaccinated until reviewed by an appropriate doctor. Others with a history of allergy, anaphylaxis or severe asthma should undergo a risk assessment and if vaccinated, be monitored closely for the recommended period of time.
People who are currently unwell	These people should mention this to their healthcare provider to ensure that it is appropriate to be vaccinated at the time.
Pregnant women	Although pregnant women are at higher risk of severe disease, and COVID-19 is associated with an increased risk of preterm birth, insufficient data is currently available to routinely recommend vaccination. If a pregnant or breastfeeding woman is at unavoidable risk of high exposure or has a significant underlying medical condition, vaccination should be considered on an individual basis.
Breastfeeding women	It is not yet clear whether COVID-19 vaccines can be excreted through breastfeeding and if they are, what effect they may have on the milk or infant. mRNA vaccines are not thought to have any effect on the infant. People who are breastfeeding should discuss the risks and benefits of vaccination with their healthcare provider.
Young people	Currently vaccines are being tested to see if they are appropriate for young people and advice should be taken as to whether the specific vaccine being proposed has been authorised for people under 18 years of age.

3. How soon does protection start after having the vaccine?

Protection starts to develop approximately 12 days after the injection is given.

4. How can I get the vaccine?

Currently COVID-19 vaccines can only be accessed through national, government-run vaccination programmes. The industry is reviewing ways for seafarers to obtain authorised vaccines in the near term.

5. How long does immunity last and how often will I need a vaccine?

Ongoing studies to establish how long a person is immune to the COVID-19 virus after vaccination with different vaccines will determine how often a vaccine is required, for example, annually like the flu vaccine or less frequently.

6. Are there any side effects of the COVID-19 vaccine?

Side effects of the COVID-19 vaccines are reported to be mild and short lived, lasting up to 48 hours. Serious side effects are reported to be extremely rare. Side effects can occur after the first or second dose. Local reactions such as pain, redness and swelling are not uncommon, particularly in those under 55 years. Up to 50% may suffer headache, fever or fatigue. These side effects respond well to Paracetamol and usually settle within two days. If symptoms persist, the seafarer should approach the officer responsible for medical care who should then contact Telemedical Advisory Services (TMAS).

7. Do I need to observe all rules, quarantine and travel restrictions after being vaccinated?

Yes, you currently need to observe all quarantine rules and travel restrictions. These may change over time.

8. Can I pass the virus to others once I have had the vaccine?

It is currently unknown whether a vaccinated person can still carry the virus in their nose and throat without any symptoms and whether they can pass it on to others. Until this is clear, it is essential that everybody, vaccinated or not, follows the guidelines for physical distancing, washing hands with soap and water or the use of hand sanitiser, good respiratory hygiene and the use of masks where appropriate.

9. Is the vaccine effective against the new mutations of the virus?

Manufacturers and governments are investigating whether the different vaccines are effective against the identified virus mutations. Early laboratory trials indicate that vaccines currently authorised are effective against the new known variants.

10. What is the process of clinical trials?

Clinical trials typically involve several thousand healthy volunteers and usually last for many years. Trials are bound by strict regulations, can often take many years to complete, and involves three main phases:

Phase I
Small groups (approximately 20-50 people) receive the vaccine. This phase will assess the safety, side effects, appropriate dosage, method of administration and composition of the vaccine. If successful it will proceed to Phase II.

Phase II
Vaccine is usually given to several hundred people with the same characteristics (e.g. age, sex) as people to whom the vaccine will be given. After successful Phase II trials the vaccine will proceed to Phase III.

Phase III
Vaccine is usually given to thousands of people to help ensure it is safe and effective for broader use.

Studies may also take place after a vaccine is introduced. These studies enable scientists to monitor efficacy and safety among an even larger number of people, over a longer time frame.

11. How have the COVID-19 vaccines been produced so quickly?

The US Centre for Disease Control (CDC), World Health Organization (WHO) and European Medicines Agency (EMA) clearly state that the safety requirements for their approved COVID-19 vaccines are as rigorous as for any other vaccines and there has been no change in their standards.

The timelines have been significantly improved by:

- Prioritising development and production of COVID-19 vaccines by pharmaceutical companies;
- Fast track procedures by regulatory bodies;
- Production of the vaccine before trials are completed;
- Mobilising more people simultaneously to analyse the results from earlier studies more quickly and to outline the next steps regarding resources, funding and regulatory strategy;
- Combining clinical trial phases or conducting some studies in parallel where safe to do so; and
- Building on existing technology that has already been used safely in other vaccines and medicines.

12. Is it important to know what type of vaccine I have been given?

Yes it is important. It is currently unclear whether the authorities in different countries will accept all vaccines available today or in the near future to permit entry within their borders. It is always recommended that information about the vaccine is obtained and hard or electronic copies to certify proof of vaccination are obtained and are kept safely together with the seafarers' travel documents. Where possible, proof of vaccination should be recorded in the national language and with an English translation. Current recommendations are that a second dose of vaccine where required should be the same make of vaccine as the first although this may change with the results of ongoing trials.

13. Will consuming food affect the efficacy of the vaccination?

No, vaccinations are not affected by having food before or after the injection is administered. It is advisable to avoid alcohol before having any vaccine and for a few days afterwards.

14. Do the vaccines contain animal products?

Historically pork gelatine has been used in some vaccines. The Pfizer-BioNTech, Oxford AstraZeneca and Moderna COVID-19 vaccines do not contain pork gelatine.

Further reading

https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html

https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/coronavirus-disease-covid-19/treatments-vaccines/covid-19-vaccines-key-facts

https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html

The information contained in this Guide is continuously being reviewed and updated, but is correct at the time of publication.

First Edition 2021

Published by
Marisec Publications
38 St Mary Axe
London EC3A 8BH

Tel: +44 20 7090 1460
Email: publications@ics-shipping.org
Web: www.ics-shipping.org

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Shaping the Future of Shipping

Seafarers' Trust

Local printing funded by the ITF Seafarers' Trust

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