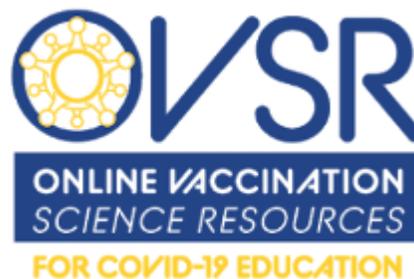


## Online Vaccination Science Resources for COVID-19 Education

### Student Instructions

#### Welcome

You are invited to make use of our “Online Vaccine Science Resources for COVID-19 Education” educational materials. Each module is assembled as a toolkit with 3-5 instructional videos, assessments, discussion questions, assignments, synthesis activities, and guides for dual infographic and virtual poster (science and general public audiences) activities. Our work focuses on the basic science for COVID-19 education and our modules and associated learning outcomes are in a table on the next page of these instructions. We hope that these materials will help you understand how science works, the SARS-CoV-2 virus, how vaccines are generated, and how we should communicate about the science of the virus and vaccines. Our ultimate goal is to reduce vaccine hesitancy and to help our communities ensure vaccine uptake in the face of the ongoing SARS-CoV-2 infection and subsequent evolution.



The modules can be found on our website <https://www.vaccine-science-education.org/>. Your professor has likely provided you with access to the modules via your learning management system. Each of the modules is centered on a YouTube video recording. Depending on your instructor, you may be using them in class or online, synchronously or asynchronously. For each of the recordings, there may be pre-assignments and post-assignments, and other activities such as discussions and assessments.

For each module follow the instructions of your instructor. Each one is slightly different and may require different activities.

We recommend that you find a quiet space in which to watch the videos and use a computer or tablet with stable internet. A transcript for each video is available and YouTube has the capacity to provide a translation in several languages as the videos progress. The videos can be viewed in succession or as standalone videos. Slides are also provided so you can print them out, download them and use them as needed.

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## Module 3

Topic	Module	Learning objectives - Having completed the module students will be able to:
Vaccine Science	3	<ol style="list-style-type: none"><li>1. Describe the basic science of immunity and vaccine activity</li><li>2. Interpret emerging information on Covid-19 vaccine development and distribution</li><li>3. Discuss benefits, risks, and priorities for vaccination</li></ol>

This module is focused on helping you understand the basic science of immunity and vaccines. You will also learn about COVID-19 vaccine development and how it is being distributed. You will also learn about the risks and priorities for vaccination along with the benefits. There are three parts of the module and several learning outcomes associated with the parts. Your instructor may ask you to engage with one or all of the parts depending on your course.

### Part 1: Immunity and Vaccine Action

You will watch the slides and complete the assignment as instructed. There is one assignment. Your instructor may ask you to do this before you review the slides and video associated with [Module 3 Part 1 - Immunity and Vaccine Action](#)

- This activity is best conducted before watching the videos or using other module materials. Your instructor will ask you to provide your answer to the prompt

*What scientific concepts, ideas, and emotions are associated with the term “vaccine”?*

- Your instructor may ask for your answer in writing or orally. They might ask you to do it as an individual or in a group.
- Depending on how you and your classmates respond, your instructor may follow up with clarifying statements and questions.

### Part 2: Vaccine Development and Testing

You will watch the slides and complete the assignment as instructed. Your instructor may ask you to do this before you review the slides and video associated with at least Module 3 Part 1 above and possibly [Module 3 Part 2 - Vaccine Development and Testing](#)

- Your instructor will ask you to provide your answer to the prompt

*What are the outcomes of a successful vaccination campaign?*

- Your instructor may ask for your answer in writing or orally. They might ask you to do it as an individual or in a group.

- Depending on how you and your classmates respond, your instructor may follow up with clarifying statements and questions.
- Your instructor will likely also ask you to think broadly about the effects on society when a vaccine is both widely available and widely adopted. Consider the following ideas
  - Short-term health-related effects - individual immunity, herd immunity, halt spread of disease
  - Longer-term health-related effects - decreased mortality and complications of the disease, improved hygiene, health awareness, and health communication
  - Other effects - Improved education access, social and political stability, economic equity, and personal mobility

### Part 3: Vaccination Strategies and Priorities

You will watch the slides and complete the assignments as instructed. Your instructor may again choose to administer these before or after you've viewed the slides and video associated with at least Parts 1 and 2 and possibly [Module 3 Part 3 - Vaccination Strategies and Priorities](#).

- Your instructor will ask you to provide your answer to the following prompts

*What types of COVID-19 vaccines have been developed or are being developed?*

*Where are they in the testing, approval and production/distribution processes?*

*How are they administered?*

*Who can receive them?*

- Your instructor will direct you to several websites while posing the questions above. These include

World Health Organization, "COVID-19 Vaccine Tracker and Landscape"

Available from: <https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines>

US National Library of Medicine, "Clinical Trials Database"

Available from: <https://clinicaltrials.gov/ct2/home>

US Food and Drug Administration, "Vaccines and Related Biological Products Advisory Committee"

Available from: <https://www.fda.gov/advisory-committees/blood-vaccines-and-other-biologics/vaccines-and-related-biological-products-advisory-committee>

- You will be asked for your answers in writing or orally. Your instructor might ask you to do it as an individual or in a group. Your instructor will ask you to discuss this as a collective.

- Your instructor will ask you to note the following information about vaccine candidates as you visit the various websites
  - Vaccine technology and composition (mRNA, protein fragment, attenuated virus)
  - Country of origin and associated regulatory process
  - Organization (private company, public/private partnership)
  - Vaccine type (novel and specific for SARS-CoV-2, existing cross-reactive vaccine)
  - Details on administration and distribution will depend on the vaccine type, country of origin, and approval timeframe. For example, cross-reactive vaccines will already have established distribution and production procedures. mRNA vaccines can be approved and produced rapidly but cannot be widely distributed or stored at ambient temperatures.