

## 14.0 VACCINES

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This section provides background information on the COVID-19 vaccines currently available in the U.S. and potential impacts on camp operations. As vaccines become available and vaccinations increase, they will provide an additional layer of risk mitigation for both individuals and the camp community. However, until vaccination rates reach effective community/herd immunity levels, the best protection from COVID-19 will be a combination of COVID-19 vaccinations along with the other non-pharmaceutical interventions (NPIs) presented in the Field Guide.

### VACCINE INFORMATION

#### Background

Vaccinations allow individuals to have protective immunity without the serious side effects of contracting the disease itself. Additionally, when communities are protected at sufficient levels against diseases, they are afforded the ability to gather safely. The COVID-19 vaccine is recommended because, for some individuals, becoming infected with COVID-19 can have serious, life-threatening complications (especially those with specific infirmities or co-morbidities who are at high risk). Even those who are not at a high risk of developing complications could spread the disease to friends, family, and others if infected with the virus.

#### Status of Vaccines (as of January 12, 2021)

As of January 12, 2021, there are currently two vaccines for COVID-19 available through emergency use authorization (EUA) in the U.S., produced by Pfizer and Moderna. The vaccines are being distributed and allocated with prioritization for health care providers, emergency responders, and those at greater risk of severe illness from COVID-19. The general population (ages 16+) is expected to start receiving vaccines in April 2021, based upon the current projections of vaccine manufacturing and distribution conditions, and is subject to change.

The Pfizer vaccine requires two injections 21 days apart. The Moderna vaccine requires two injections 28 days apart. The COVID-19 vaccine should not be taken within 14 days of receiving other types of vaccinations.

The Pfizer vaccine is approved for individuals over 16 years old, and the Moderna vaccine is approved for those 18 and older. These ranges were determined because the vaccines were tested in those age groups. Those who are pregnant, breastfeeding or have underlying health conditions (including allergies) are advised to consult with their healthcare provider before getting the vaccine.

Both of the currently available vaccines were shown to be safe and effective, regardless of gender, race, and ethnicity. The clinical trials reflected a diverse group of individuals. The

vaccine has also been shown to be safe and effective in people who have already had infection with COVID-19; it is recommended to get the vaccine to prevent reinfection.

There are vaccines from other companies still undergoing clinical trials that may only require one injection (e.g., Johnson & Johnson vaccine produced in partnership with Beth Israel Deaconess Medical Center).

### Pediatric Availability

Pfizer and Moderna have initiated trials with children as young as age 12, but tests have not yet included younger children.<sup>18</sup> These trials will need to be followed up by U.S. Food and Drug Administration (FDA) review before distribution.

The guidance provided by the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) recommends placing individuals ages 16 and over in Phase 2 (unless they have been placed in an earlier phase due to occupation or health conditions), so even though the Pfizer vaccine is approved for teens aged 16 and 17, they will not be able to immediately receive the vaccine.<sup>19</sup> The order of prioritization is determined by individual states.

## VACCINE SAFETY

### Vaccine Development

The vaccines were developed on a prompt schedule because of the pressing need to end the pandemic; however, the FDA required safety standards were not sidelined. Tremendous resources were devoted to the effort so that research and development processes could be conducted through parallel processes in order to speed up the effort.

### How the Vaccine Works

Individuals cannot get COVID-19 from the vaccine. There is no live or weakened virus in the vaccine. These two vaccines use a technology called mRNA (messenger ribonucleic acid) to deliver genetic instructions to cells to temporarily make a certain protein that looks like the COVID-19 virus to the immune system. This mRNA never enters the nucleus of the cells where DNA is, and it cannot change or interact with DNA. The presence of this protein will prompt the immune system to mount a natural defense against future exposure to the COVID-19 virus. This process is illustrated in Figure 14.1.

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<sup>18</sup> Connecticut Children's. *When Will the COVID-19 Vaccine Be Available for Kids, and Will It Be Safe for Your Family?* <https://www.connecticutchildrens.org/coronavirus/when-will-the-covid-19-vaccine-be-available-for-kids-and-will-it-be-safe-for-your-family/>

<sup>19</sup> Dooling K, Marin M, Wallace M, et al. 2021. *The Advisory Committee on Immunization Practices' Updated Interim Recommendation for Allocation of COVID-19 Vaccine — United States, December 2020*. CDC Morbidity and Mortality Weekly Report. <https://www.cdc.gov/mmwr/volumes/69/wr/mm695152e2.htm>

## How the RNA vaccine would work

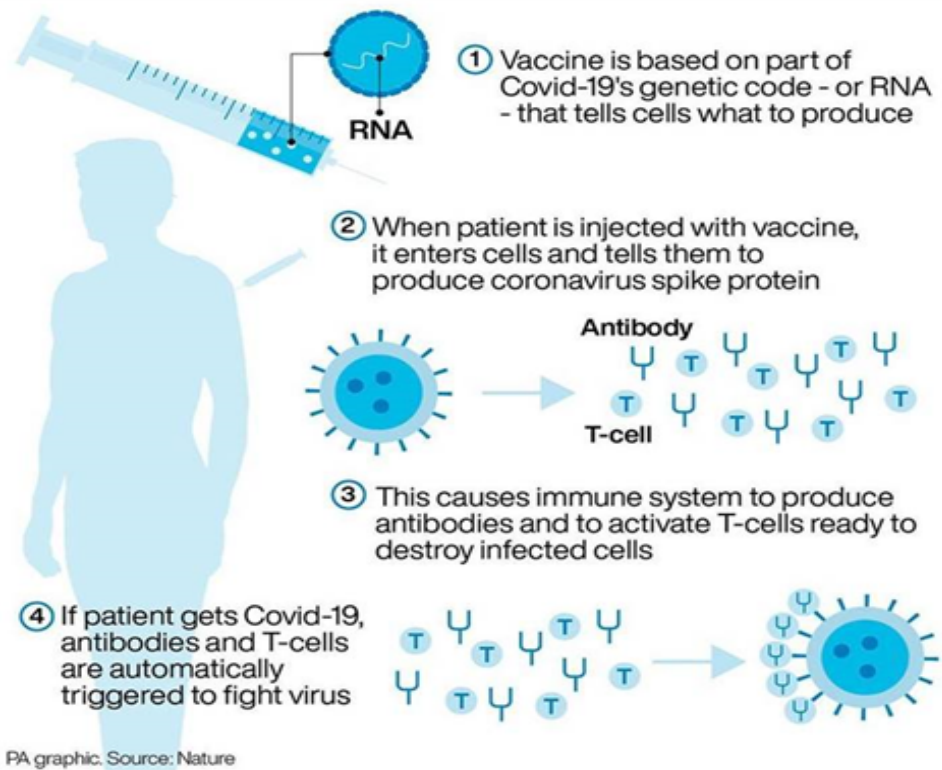


Figure 14.1 How the RNA Vaccine Would Work (PA Graphic. Source: Nature)

### Vaccine Safety Monitoring

The CDC has expanded efforts to monitor possible side effects of the vaccine that were not presented during clinical trials.<sup>20</sup> Experts quickly investigate any potential safety concerns to determine if changes are needed to vaccine recommendations. The FDA also closely monitors and studies any potential side effects that are either rare or may more acutely impact individuals who have a higher risk of side effects than those in the clinical trial (e.g., older individuals and those with chronic medical conditions).<sup>21</sup> This information is used to adjust recommendations and, if necessary, to balance the benefits of the vaccine with its risk.

### VACCINATED CAMPERS AND STAFF

#### Vaccination

Right after vaccination, individuals can expect some soreness in the arm and some people may experience a low-grade fever, fatigue, body aches, chills, and headache. These are normal symptoms that show the body is building immunity and that the vaccine is working as intended.

<sup>20</sup> CDC. *Ensuring the Safety of Vaccines*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety.html>

<sup>21</sup> FDA. *Ensuring the Safety of Vaccines in the United States*.

<https://www.fda.gov/files/vaccines,%20blood%20&%20biologics/published/Ensuring-the-Safety-of-Vaccines-in-the-United-States.pdf>

Individuals who are vaccinated will receive a certificate of vaccination. Vaccinated individuals will not test positive on tests for current viral infection. However, they may receive a positive result from an antibody test at some point after the vaccination, which shows that the vaccine is working (i.e., the body will produce the antibodies needed to fight infection after receiving the vaccination).

### Post-Vaccination Behavior

It is recommended that individuals still use NPIs after receiving the vaccine, including but not limited to maintaining 6 feet of physical distance, wearing a face covering, and washing hands frequently. This will offer the best protection from getting or spreading the disease. It takes about 2 weeks for the body to develop a defense to the virus after getting the vaccine, so vaccinated individuals would still be vulnerable to infection during that time.

It is currently unknown if those who are vaccinated can spread the virus. It will take many months for enough people to be protected (herd immunity) by vaccination before other NPIs can begin to be discontinued.

### Camp Immunization Policies and Camper and Staff Intake Records

Camps should review their immunization policies and consider the policy statement and recommendations of the American Academy of Pediatrics (AAP) as published in the journal *Pediatrics* in July 2019.<sup>22</sup> This policy statement has been reviewed and is supported by the American Camp Association and Association of Camp Nursing.

Camps should provide space to indicate vaccine status on camp intake and personnel forms, according to the camp's existing process for other vaccinations. This information will help health center staff to determine if symptoms identified during health screenings could be related to vaccination (if symptoms appear shortly after vaccination) or other illnesses (if symptoms appear after the individual has been vaccinated for about 2 weeks).

At this time, it is not recommended to exclude campers or staff who have not received the vaccination as there are limitations related to access the vaccine and age restrictions for vaccination.

### At Camp

Camps should continue to implement NPIs for all campers and staff (including those vaccinated), such as maintaining 6 feet of physical distance, wearing face coverings, and washing hands frequently. Camps should communicate this expectation of behaviors for those vaccinated in pre-camp materials (including expected behaviors in the days leading up to camp).

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<sup>22</sup> AAP. *Improving Health and Safety at Camp*. <https://pediatrics.aappublications.org/content/144/1/e20191355>

If the camp has implemented a testing program, those who are vaccinated should still be included in their testing group. Vaccination currently protects the individual from the disease; however, we currently do not know if those vaccinated can still spread the illness to others. Therefore testing for active illness can continue to be a helpful activity to support health of the community.

## REFERENCES AND RESOURCES

CDC. *Frequently Asked Questions about Vaccination*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html>

FDA. *COVID-19 Vaccinations*. <https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines>

American Society of Health-System Pharmacists. *COVID-19 Vaccines*. <https://www.ashp.org/COVID-19/Vaccines?loginreturnUrl=SSOCheckOnly>

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FDA. *Ensuring the Safety of Vaccines in the United States*. <https://www.fda.gov/files/vaccines,%20blood%20&%20biologics/published/Ensuring-the-Safety-of-Vaccines-in-the-United-States.pdf>