

Maximizing Doses of Moderna COVID-19 Vaccine Max 15 dose vial

Vaccine dose = 0.5 mL

Last Updated 5/11/2021



Consistently maximizing doses per vial of COVID-19 vaccines is essential to administering vaccines to more people. Selection of syringe and needle type as well as technique for preparing doses to optimize vial pressure are key to maximizing doses for each Moderna maximum 15 dose vial. [The USP COVID-19 Vaccine Handling Toolkit: Operational Considerations for Healthcare Practitioners](#) helps ensure complete doses are withdrawn and additional safe practices. Visit www.usp.org/covid-vaccine-handling to learn more.


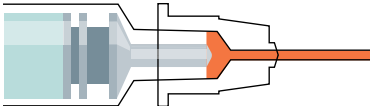
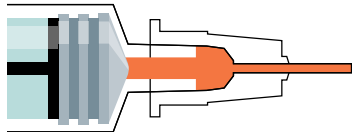
The [Moderna COVID-19 Vaccine resource](#) webpage provides preparation instruction that should be reviewed. Follow aseptic technique throughout vaccine preparation.

Syringe, needle, and other considerations

Maximize doses withdrawn from vials by utilizing low-dead volume (LDV) syringes/needles whenever possible. Practice settings that may not have adequate quantities of LDV syringes can maximize doses by utilizing a combination of LDV and non-LDV syringes. The ratio of LDV to non-LDV syringes should be dependent on the type of syringe and needle used. Additional considerations to support dose optimization include:

- Use 1-inch needles, 23-gauge or narrower (e.g., 25-gauge) to withdraw vaccine.
- Use a needle that is fixed to syringe, with safety mechanism.
- Use the correct needle gauge and length for the recipient patient based on age, gender and weight recommendations in [CDC's Vaccine Administration: Needle Gauge and Length guide](#).
- Vaccine dose for administration = 0.5 mL, regardless of needle/syringe type.

Per the EUA, vaccine should not be combined or pooled from multiple vials.

Moderna maximum 15 dose vial	Suggested combination of LDV and non-LDV syringes to yield at least 14 doses	
	<p>7 low dead-volume syringes/needles</p> 	<p>7 non low dead-volume conventional or luer-locked needle/syringes</p> 

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Preparing Moderna COVID-19 Vaccine

Thaw each vial before use. Vials may be thawed:

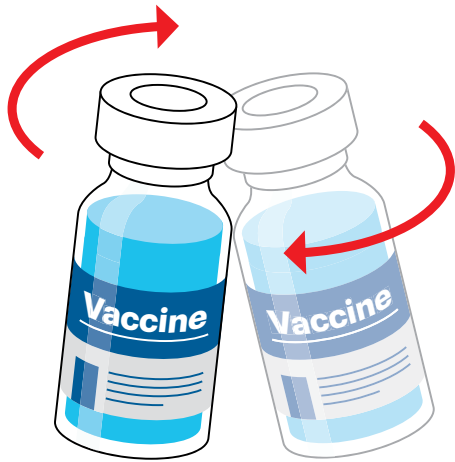
- In the refrigerator at 2°C to 8°C (36°F to 46°F) for 3 hours
- _____ or _____
- At room temperature at 15°C to 25°C (59°F to 77°F) for 1 hour and 30 minutes

Beyond-Use-Date (BUD)

Vial or pre-drawn syringe BUD is 12 hours from initial vial puncture when held at refrigerated to ambient room temperature at 2°C to 25°C (36°F to 77°F)

Draw up each dose of the vaccine

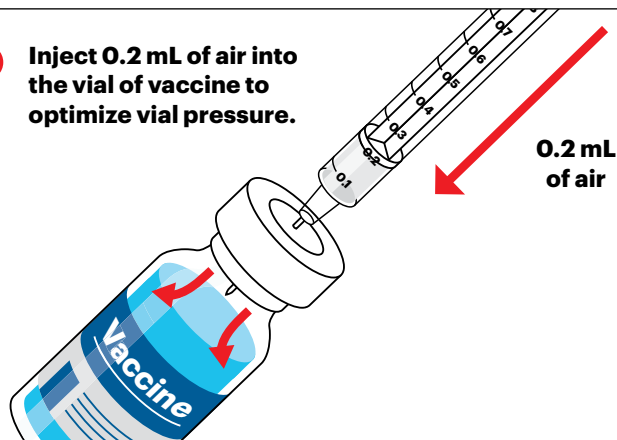
- 1 Swirl vial gently after thawing and between each withdrawal. Do not shake.



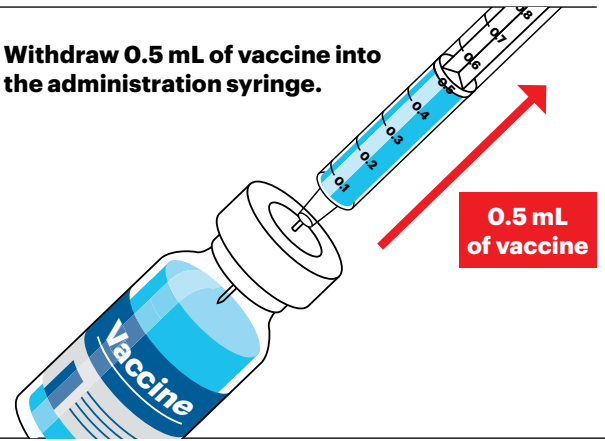
- 2 Wipe vaccine vial stopper using sterile alcohol swab.

- 3 If applicable, ensure needle and syringe are tightly luer-locked together.

- 4 Inject 0.2 mL of air into the vial of vaccine to optimize vial pressure.

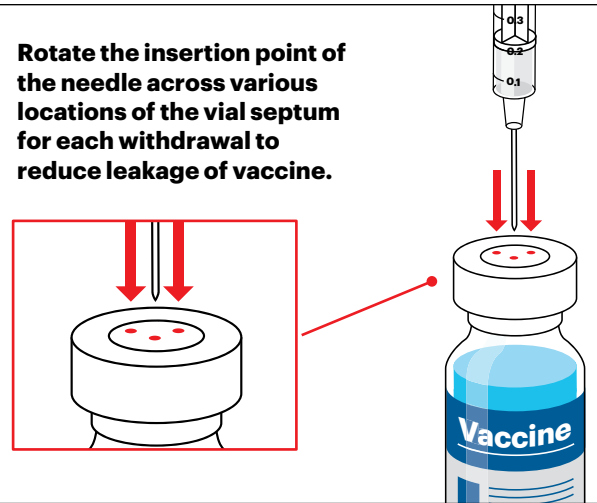


- 5 Withdraw 0.5 mL of vaccine into the administration syringe.

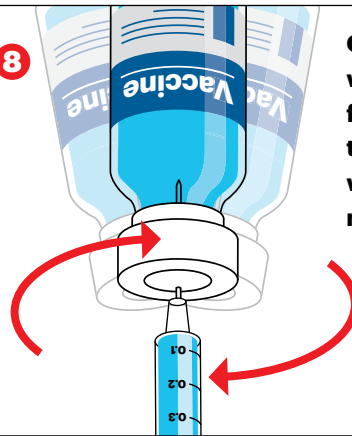


- 6 While small air bubbles can be ignored, large air bubbles can lead to underdosing and should be addressed. Minimize tapping of the syringe due to theoretical risk of inactivating the vaccine or degrading quality.

- 7 Rotate the insertion point of the needle across various locations of the vial septum for each withdrawal to reduce leakage of vaccine.



- 8 Gently swirl the vial when withdrawing the final dose to maximize the volume of vaccine withdrawn. Be careful not to bend the needle.



- 9 Utilize safe practices when recapping the needle after withdrawing and before administering.

This information will be updated as additional vaccines are authorized and other information becomes available.

Visit www.usp.org/covid-vaccine-handling for the latest and to sign up for updates.