The Medical Letter®

on Drugs and Therapeutics

Volume 67 July 21, 2025

ISSUE No. 1733

IN THIS ISSUE

The Medical Letter®
on Drugs and Therapeutics

Volume 67 (Issue 1733) July 21, 2025

COVID-19 UPDATE

mNEXSPIKE — A New Moderna mRNA Vaccine for COVID-19

The FDA has licensed *mNEXSPIKE* (Moderna), an mRNA vaccine, for prevention of COVID-19 in previously vaccinated adults ≥65 years old and in persons 12-64 years old who have a condition that puts them at high risk for severe outcomes from COVID-19.[1] *Spikevax*, the original Moderna mRNA COVID-19 vaccine, remains in production[2]; it is licensed for use in persons ≥12 years old and is available under an Emergency Use Authorization (EUA) for children 6 months to 11 years old.

THE NEW VACCINE — *Spikevax* and *Comirnaty*, the Pfizer/BioNTech mRNA COVID-19 vaccine, code for the whole spike protein of SARS-CoV-2. In contrast, *mNEXSPIKE* codes only for the N-terminal domain and the receptor-binding domain of the spike protein of the virus (Omicron variant JN.1); these domains are the targets of most effective anti-SARS-CoV-2 antibodies.[3] The more targeted vaccine formulation allows for administration of a smaller mRNA dose (10 mcg vs 50 mcg with *Spikevax*).

CLINICAL STUDIES — Licensure of the new vaccine was based on the results of a randomized, observer-blind noninferiority trial (available as a presentation) in 11,454 persons ≥12 years old who had previously received a primary series of a COVID-19 vaccine (adults ≥18 years old had also received at least one booster dose). Subjects received a single dose of *mNEXSPIKE* or *Spikevax* (both bivalent formulations targeting the original and BA.4/5 Omicron strains of SARS-CoV-2). After a median follow-up of 8 months, the incidence of COVID-19 occurring ≥2 weeks after immunization was 9.9% with *mNEXSPIKE* and 10.8% with *Spikevax*; *mNEXSPIKE* met the prespecified criteria for noninferiority to *Spikevax* (relative efficacy 9.3% [95% CI -6.6% to 22.8%]). Results in adults ≥65 years old were similar to those in the overall population (relative vaccine efficacy 13.5% [95% CI -7.7% to 30.6%]). Seroresponse rates and geometric mean neutralizing antibody titer levels were higher with the new vaccine.[4]

ADVERSE EFFECTS — In the pivotal trial, adverse effects with *mNEXSPIKE* were similar to those with *Spikevax* and included injection-site pain, fatigue, headache, myalgia, arthralgia, chills, axillary swelling or tenderness, and nausea/vomiting. Serious adverse events occurred in 0.2% of patients who received *mNEXSPIKE* and in 0.3% of those who received *Spikevax*; no cases of myocarditis or pericarditis were reported with either vaccine.[4]

PREGNANCY AND LACTATION — The new vaccine has not been studied in pregnant women. In female rats, administration of an 80-mcg dose of *mNEXSPIKE* (8 times the recommended human dose) twice before mating and twice during gestation was not associated with impaired fertility or fetal harm. Administration of COVID-19 vaccines to nursing mothers is considered safe.[5] The American College of Obstetricians and Gynecologists has recommended that all pregnant and breastfeeding women be vaccinated against COVID-19.[6]

DOSAGE, ADMINISTRATION, AND AVAILABILITY — The *mNEXSPIKE* vaccine is supplied in 10 mcg/0.2 mL prefilled syringes. The recommended dosage is a single 10-mcg intramuscular injection; *mNEXSPIKE* should not be given within 2 months after another COVID-19 vaccine. The syringes should be frozen during storage; after thawing, they can be kept in a refrigerator for up to 90 days or at room temperature for up to 24 hours (*Spikevax* can be refrigerated for up to 60 days or kept at room temperature for up to 12 hours after thawing). According to the manufacturer, *mNEXSPIKE* is expected to be available in the US for the 2025-2026 respiratory virus season.[2] ■

1. CDC. Underlying conditions and the higher risk for severe COVID-19. February 6, 2025. Available at: https://bit.ly/3SzSe0I. Accessed July 2, 2025.
2. Moderna Press Release. Moderna receives U.S. FDA approval for COVID-19 vaccine mNEXSPIKE. May 31, 2025. Available at: https://bit.ly/4mBC98i. Accessed July 2, 2025.
3. GBE Stewart-Jones et al. Domain-based mRNA vaccines encoding spike protein N-terminal and receptor binding domains confer protection against SARS-CoV-2. Sci Transl Med 2023;15:eadf4100.

4. B Rizkalla. Overview of Moderna's investigational next generation COVID-19 vaccine, mRNA-1283, in individuals ≥12 years of age. CDC Advisory Committee on Immunization Practices Presentation. April 15, 2025. Available at: https://bit.ly/4dVr2Dq. Accessed July 2, 2025.
5. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Institute of Child Health and Human Development; 2006-. COVID-19 vaccines. [Updated 2025 April 15]. Available at: https://bit.ly/3Sv9dkG. Accessed July 2, 2025.
6. American College of Obstetricians and Gynecologists. COVID-19 vaccination considerations for obstetric-gynecologic care. June 4, 2025. Available at: https://bit.ly/4dMlESY. Accessed July 2, 2025.