



EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH

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# COVID-19 vaccine safety update

## SPIKEVAX

Moderna Biotech Spain, S.L.

The safety of Spikevax is continuously monitored and safety updates are regularly provided to the public. This document outlines the outcomes from the assessment of emerging worldwide safety data carried out by EMA's [Pharmacovigilance Risk Assessment Committee](#) (PRAC) (see section 1). It also contains high-level information from the reporting of suspected adverse reactions, which PRAC takes into account in its assessments (see section 2).

This safety update follows the update of 14 July 2021.

## Main outcomes from PRAC's latest safety assessment

No further updates to the product information are currently recommended.

The safety updates are published regularly at [COVID-19 vaccines: authorised](#). All published safety updates for Spikevax (previously known as COVID-19 Vaccine Moderna) are available at [Spikevax: safety updates](#).

Since its marketing authorisation in the European Union (EU) on 6 January 2021 until 29 July 2021, more than 43.5 million doses of Spikevax have been administered in the EU/EEA<sup>1</sup>.



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## 1. Updates on safety assessments for Spikevax

PRAC assessed new safety data, including the latest Monthly Summary Safety Report (MSSR)<sup>2</sup> from the marketing authorisation holder and data reported by patients and healthcare professionals to EudraVigilance (see section 2), during its meetings on 22 July and 5 August 2021. No further updates to the product information are currently recommended.

### Erythema multiforme

PRAC started an assessment of erythema multiforme (EM; a hypersensitivity (allergic) reaction with characteristic round skin lesions, which may also affect mucous membranes in internal body cavities) to establish whether it is a side effect of Spikevax. The assessment follows a small number of cases reported after vaccination with Spikevax to EudraVigilance (see section 2). Reported cases concern suspected side effects, i.e. medical events that have been observed after vaccination, but which are not necessarily related to or caused by the vaccine.

Further data and analyses have been requested from the marketing authorisation holder to support the ongoing assessment by PRAC.

### Glomerulonephritis and nephrotic syndrome

PRAC started an assessment of glomerulonephritis (inflammation of tiny filters in the kidneys) and nephrotic syndrome (kidney disorder causing the kidneys to leak too much protein in the urine) to establish whether they may be side effects of Spikevax. Affected patients may present with

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<sup>1</sup> The [European Centre for Disease Prevention and Control \(ECDC\)](#) collects these exposure data from EU Member States as well as from the additional countries of the European Economic Area (EEA) Norway, Iceland and Liechtenstein.

<sup>2</sup> Monthly Summary Safety Reports, also referred to as pandemic summary safety reports, will be compiled by the marketing authorisation holders to support timely and continuous benefit-risk evaluations for COVID-19 vaccines used during the pandemic. These reports complement the submission of [Periodic Safety Update Reports](#) (PSURs).

bloody or foamy urine, oedema (swelling of the eyelids, feet or abdomen), or fatigue. The assessment follows a small number of cases reported after vaccination with Spikevax in the medical literature, including cases where patients experienced relapse of pre-existing kidney conditions. Further data and analyses have been requested from the marketing authorisation holder to support the ongoing assessment by PRAC.

## Menstrual disorders

PRAC discussed reported cases of menstrual disorders occurring after vaccination against COVID-19. No causal association between COVID-19 vaccines and menstrual disorders has been established so far.

Menstrual disorders are very common in the general population and can occur without an underlying medical condition. Causes can range from stress and tiredness to conditions such as fibroids and endometriosis. Women experiencing unexpected vaginal bleeding (e.g. in postmenopausal women) or who are concerned about prolonged or severe menstrual disturbances may want to seek medical advice.

The marketing authorisation holders for all COVID-19 vaccines authorised in the EU have been requested to provide further data as part of the MSSRs. PRAC will review all available evidence, including reports of suspected side effects and scientific literature, and will continue monitoring the issue.

## 2. How safety is monitored

As for all COVID-19 vaccines, relevant new information emerging on Spikevax is collected and promptly reviewed. This is in line with the [pharmacovigilance plan for COVID-19 vaccines](#) of the EU regulatory network (comprising the regulatory bodies of the EU Member States, EMA and the European Commission).

### Case reports of suspected side effects

Collecting reports of medical events and problems that occur following the use of a medicine, and therefore might be side effects, is one of the pillars of the EU safety monitoring system. Healthcare professionals and vaccinated individuals are encouraged to report to their national competent authorities all suspected side effects individuals may have experienced after receiving a vaccine even if it is unclear whether the vaccine was the cause. For more information on how to report, see [Reporting suspected side effects](#).

These spontaneous reports are collected in EudraVigilance, the EU database used for monitoring and analysing suspected side effects. Publicly available information can be accessed via [EudraVigilance – European database of suspected drug reaction reports](#) in all EU/EEA

languages. Search for "COVID-19 MRNA VACCINE MODERNA (CX-024414)" to see all suspected side effect cases reported for Spikevax.

As of 29 July 2021, a total of 48,788 cases of suspected side effects with Spikevax were spontaneously reported to EudraVigilance from EU/EEA countries; 392 of these reported a fatal outcome<sup>3,4</sup>. By the same date, about 43.5 million doses of Spikevax had been given to people in the EU/EEA<sup>5</sup>.

**These reports describe suspected side effects in individuals, i.e. medical events observed following the use of a vaccine. The fact that someone has had a medical issue or died after vaccination does not necessarily mean that this was caused by the vaccine. This may have been caused, for example, by health problems not related to the vaccination.**

The EU regulatory network continuously monitors EudraVigilance to detect any new safety issues. EudraVigilance relies on individual healthcare professionals and patients to report their own experience. The monitoring detects unusual or unexpected patterns in the reports received for further investigation and risk assessment. EMA's detailed assessments take into account all available data from all sources to draw a robust conclusion on the safety of the vaccine. These data include clinical trial results, reports of suspected side effects in EudraVigilance, epidemiological studies monitoring the safety of the vaccine, toxicological investigations and any other relevant information.

## Planned and ongoing studies

The company that markets Spikevax will continue to provide results from the main clinical trial, which is ongoing for up to two years. It will also conduct additional studies to monitor the safety and effectiveness of the vaccine as it is used in vaccination campaigns and other clinical practice. For the list of planned and ongoing safety studies for Spikevax, see the [risk management plan](#).

A [paediatric investigation plan](#) (PIP) for Spikevax is in place. This describes how the company will collect data on the vaccine's efficacy and safety for its potential use in children.

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<sup>3</sup> These figures have been calculated excluding cases reported from Northern Ireland (EU reporting requirements for suspected adverse reactions to EudraVigilance apply to Northern Ireland in accordance with the Protocol on Ireland/Northern Ireland).

<sup>4</sup> Source: EudraVigilance. These figures cannot be extracted directly from the public database of suspected adverse reactions, which groups information per type of side effects. As more than one suspected side effect may have been included in a single case report, the total number of side effects will never match the number of individual cases. Similarly, this public database does not provide the total number of cases reported with a fatal outcome.

<sup>5</sup> The [European Centre for Disease Prevention and Control \(ECDC\)](#) collects these exposure data from EU Member States as well as from the additional countries of the European Economic Area (EEA) Norway, Iceland and Liechtenstein.

In addition, EMA is coordinating [observational studies](#) in EU Member States looking at real-world data from clinical practice to monitor the safety and effectiveness of COVID-19 vaccines, including in pregnant women.

### 3. Other information for Spikevax

Spikevax (previously known as COVID-19 Vaccine Moderna) is a vaccine that was authorised in the EU on 6 January 2021 to prevent COVID-19 when infected with the coronavirus SARS-CoV-2. COVID-19 is a potentially severe disease that may result in death. The initial marketing authorisation was for use in people aged 18 years and older; on 23 July 2021, the marketing authorisation was extended to use in individuals aged 12 years and older.

Spikevax contains a molecule called mRNA, which the body uses to temporarily produce the SARS-CoV-2 spike protein. The mRNA is broken down shortly after vaccination. The spike protein does not cause COVID-19.

Before Spikevax was granted an EU marketing authorisation, the efficacy and safety of the vaccine were assessed through pre-clinical studies and large clinical trials. More than 14,000 participants had been given the vaccine in clinical trials.

Like all medicines, this vaccine can cause side effects, although not everybody will experience them. The most common side effects known for Spikevax are usually mild or moderate and get better within a few days after vaccination.

More information on how Spikevax works and its use is available in all EU/EEA languages in the [medicine overview](#). This includes information on use in pregnant and breastfeeding women and immunocompromised individuals.

The full [product information](#) with the summary of product characteristics and the package leaflet is also available in all EU/EEA languages.

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