On CDC’s website, the words explaining vaccine ingredients for both Pfizer and Moderna start with the same two sentences:

# All covid-19 vaccine ingredients are safe. nearly all the ingredients in covid-19 vaccines are ingredients found in many foods—fats, sugars, and salts. the <insert name of vaccine> COVID-19 vaccine also contains a harmless piece of messenger RNA (mRNA).

This, and the fact that different pharma companies’ vaccines showed different efficiency ratings in testing, got me thinking how different are they anyway? Since they’re all meant to fight COVID-19, aren’t they bound to be fairly similar in composition? I’m no biochemist, of course, but I wanted an easily digestible, data-backed explanation for myself. So, here we are!

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[The Pfizer/BioNTech and Moderna COVID-19 vaccines have received full approval by the Food and Drug Administration (FDA).](https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/full-fda-approval-of-a-covid-19-vaccine-what-you-should-know#:~:text=The%20Pfizer%2FBioNTech%20and%20Moderna,and%20Drug%20Administration%20(FDA).)

COVID Vaccines: Emergency Use Authorization vs. Approval

Not every vaccine is granted an emergency use authorization before full approval. The FDA authorized three COVID-19 vaccines (Pfizer, Moderna and Johnson & Johnson) to answer an urgent need to protect people from the coronavirus pandemic, which was (and continues to be) a public health emergency.

And not every authorized vaccine becomes fully approved. For example, in December 2021, due to potential blood clots following administration of the Johnson & Johnson vaccine, the CDC updated its recommendations. The CDC noted that the two mRNA vaccines from Pfizer and Moderna are preferred over the Johnson & Johnson vaccine, which remains available for those who prefer it and for use in certain circumstances.

Full approval is granted when, over time, the FDA has amassed even more scientific evidence to support use of the COVID-19 vaccines, showing that the benefits of the vaccine are greater than its risks, and that the vaccines can be manufactured reliably, safely and with consistent quality.

**Timeline:** [**CDC Museum COVID-19 Timeline**](https://www.cdc.gov/museum/timeline/covid19.html)

**Vaccine numbers’ data: From** [**Statista**](https://www.statista.com/statistics/1198516/covid-19-vaccinations-administered-us-by-company/) **and** [**Our World in Data**](https://ourworldindata.org/grapher/covid-vaccine-doses-by-manufacturer?country=~European+Union)