



Sioux Lookout
First Nations
Health Authority

CORONAVIRUS COVID-19

INFORMATION SHEET

Pfizer-BioNTech COVID-19 Vaccine Ingredients

April 23, 2021

Pfizer-BioNTech vaccine ingredients are simple. They include an active ingredient, salts, lipids (fats), sugar, and water. How do these items work together to protect us from COVID-19? This info sheet will help to answer that question.

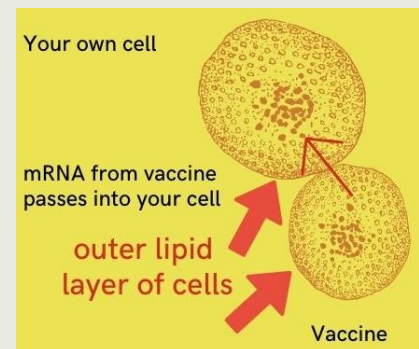
How does the vaccine work?

RNA stands for ribonucleic acid. RNA inside our cells contains recipes for making essential proteins.

mRNA stands for *messenger* RNA. The Pfizer vaccine uses mRNA to send a new recipe to your cells. The mRNA is inside an envelope made of lipids.

The outer lining of the vaccine cell and your own cell is also made of lipids. These are attracted to each other. When they come close together, the envelope carrying the mRNA can easily slide inside your cell.

Your cell uses the new recipe to make coronavirus spike proteins. Your cell shows these spikes on its outer layer. Your immune system reacts because the spikes do not belong. It makes antibodies to fight and destroy them. Your immune system will recognize the spike proteins on the COVID-19 virus and attack it if you are infected.





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mRNA is the active ingredient in the vaccine.

Lipids

The envelope needs to be sturdy so that the mRNA inside is protected until it arrives inside your cells. These lipids make up the envelope and help it to slide inside the cells easily. The following is a list of fats in the vaccine:

- ALC-0315 = (4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate)
- ALC-0159=2-[(polyethylene glycol)-2000]-N, N-ditetradecylacetamide
- 1,2-distearoyl-sn-glycero-3-phosphocholine strengthens the outer wall of the mRNA envelope
- Cholesterol helps give shape and structure that stabilizes the envelope when there are temperature changes.

Salts

pH is a measure of how acidic a liquid is. The normal pH of blood is between 7.35 – 7.45. Salt helps the Pfizer vaccine pH to match your blood pH.

- dibasic sodium phosphate dihydrate
- monobasic potassium phosphate
- potassium chloride

Sugar

Sucrose keeps the ingredients from sticking together when the vaccine is frozen.

Saline solution

The vaccine is mixed with water and ordinary salt so that the vaccine matches the salt content of your blood, much like an IV solution.



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This vaccine does NOT have:

There are no eggs, gluten, preservatives, blood products, human or animal cells.

There is no latex in the rubber stopper of the vial of vaccine. There is no risk to those with latex allergies.

If you have questions, write to us at: ACWinfo@sfnha.com

To learn more:

<https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/pfizer-biontech.html#a1.1>

<https://www.cdc.gov/vaccines/covid-19/hcp/mrna-vaccine-basics.html>

<https://covid-vaccine.canada.ca/info/pdf/pfizer-biontech-covid-19-vaccine-pm1-en.pdf>

https://www.pfizer.ca/sites/default/files/202103/Pfizer-BioNTech_COVID-19_Vaccine_PM_EN_249850_03-Mar-2021.pdf

<https://www.technologyreview.com/2020/12/09/1013538/what-are-the-ingredients-of-pfizers-covid-19-vaccine/>