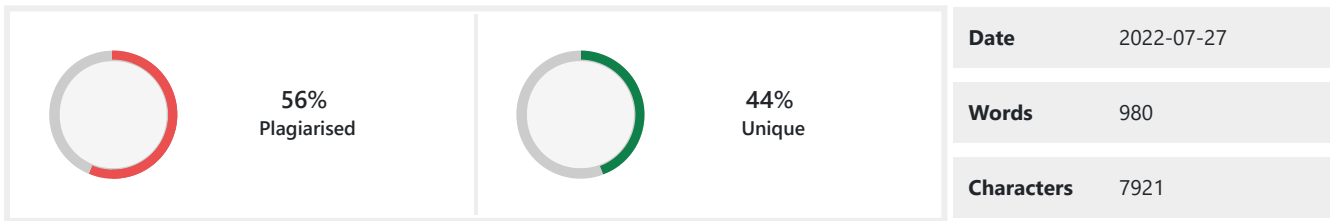


PLAGIARISM SCAN REPORT



Content Checked For Plagiarism

In the case of the Johnson and Johnson vaccine, the Adenovirus has been modified to be incapable of replicating itself in the human body. **The DNA from the Adenoviruses cannot interact with the human DNA and will be eventually degraded by our cells.**

No. The Pfizer and Moderna mRNA vaccines use only a piece of genetic material from the virus **which makes the SARS-Cov2 spike protein to stimulate the immune system.** There is no virus that can cause Covid-19 in these vaccines. **Johnson & Johnson and AstraZeneca use an Adenovirus as a vehicle to deliver the piece of genetic material that makes the SARS-Cov2 spike protein to the body; however, Adenoviruses are well recognized by the human immune system and do not cause harm to humans.** **There are four main ways to make vaccines: (1) Attenuated vaccines involve weakening a virus to non-dangerous strength (these vaccines have viruses with attenuated virulence); (2) Inactivated virus vaccines are typically inactivated chemically with formalin making the virus inert; (3) Fractionation or a separation process is when the virus is broken up into components to make vaccines out of fragments of proteins; (4) Some vaccines are based on the ability to copy a piece of the virus' genetic material (a gene) of interest from the virulent virus that codes a protein and deliver this gene to the body to make the necessary viral protein. This, in turn, activates the immune system; (4a) Example showing the use of other viruses as vectors to deliver the gene of interest to the human body via the vaccine; (4b) Shows how a lipid coat (orange) can be used to protect the piece of DNA or RNA that codes the viral protein delivered to the body via the vaccine; (4c) Summarizes a vaccine made of fragments of viral proteins to activate the immune system.**

The figure below is a summary of the four main ways vaccines are made.

Both the Pfizer-BioNTech and Moderna vaccines deliver a "genetic message" or a specific nucleotide sequence (mRNA) from the virus to be inserted into the human host cell. This genetic message (mRNA) is protected by a lipid coat. **The unique mRNA contains instructions for making the spike viral proteins that surround SARS-CoV2 (purple spikes below). The host cell translates this mRNA to make the spike viral protein in the human body. Given the right amount (or dose) of mRNA and spike viral proteins, the immune system will be able to respond by making specific antibodies as well as alert other immune cells as part of an immune system learning process to know how to fight this viral protein.** In a subsequent SARS-CoV2 infection, the body will recall the "memo" it previously made against the spike viral protein and mitigate the severity of Covid19 by being prepared and equipped for the fight.

Instead of using a lipid coat to deliver the genetic message (mRNA) to the human cell (described in question 11), both the Johnson & Johnson and AstraZeneca vaccines use an Adenovirus as a vehicle to deliver the mRNA that makes the viral spike protein to the body (see figure, question 10). Adenoviruses are recognized by our immune system and do not cause any harm. Moreover, Adenoviruses can be altered so as to not be able to replicate in the human body. **The Adenovirus from the vaccine acts as a vehicle to go deeper into the human cell (i.e., in the nucleus) to deliver and transcribe the genetic message before making the spike viral protein outside of the nucleus (i.e. in the cytoplasm of the cell) of the human cell.** Subsequently, the immune system will prepare to fight the spike viral protein with antibodies and other

immune responses. **Should the body become infected with the actual coronavirus, the immune system will be equipped to fight.**

The Johnson & Johnson vaccine trial comprised 43,700 participants of which 468 symptomatic cases were reported—which is a good number to proceed to filing an Emergency Use Authorization (EUA). The trial included four different geographies. Johnson & Johnson reported 66% overall efficacy (every country combined), 72% efficacy in the United States, 66% efficacy in Latin America, and 57% efficacy **South Africa 28 days after vaccination of the single dose.**

Efficacy in the case of the Johnson & Johnson vaccine is defined as preventing moderate to severe Covid19. Importantly, the Johnson & Johnson vaccine is 85% effective at preventing severe disease and 100% effective at preventing hospitalization and death, thus far (based on the trial).

Moreover, the Johnson & Johnson trial revealed that after 49 days after the vaccine, no moderate or severe Covid-19 cases were noted. This means that, unsurprisingly, it takes time to create an immune response.

The different vaccines are still being evaluated against the new variants, and the data to date suggest different efficacy for the various vaccines and variants of the virus.

Overall there does seem to be a drop in efficacy against the South African strain but less of a drop in efficacy in cases of the UK variant. **It is important to make note of the different types of efficacy or end points scientists talk about.** For example, there is efficacy against moderate disease, efficacy against hospitalizations, or efficacy against severe diseases or death. **If a vaccine prevents hospitalization or death and is a safe vaccine, then it is worthwhile to take the vaccine and to vaccinate the population.**

Boosters that cover these variants, and other strains it is hoped, are already being planned and **developed. It is too early to know if they will be needed, but it is reassuring to learn that scientists are already working on them.** **Importantly, at least for the Johnson & Johnson vaccine, which was tested in South Africa, there still appears to be very good protection against severe disease which may normally have resulted in hospitalization and death, even if vaccine participants became infected.**

Matched Source

Similarity 100%

Title:[www.easterndioocese.org > files > 2021Covid-19 vaccines: How they are made and how they work to ...](#)

In the case of the Johnson and Johnson vaccine, the Adenovirus has been modified to be incapable of replicating itself in the human body. The DNA from the Adenoviruses cannot interact with the human DNA and will be eventually degraded by our cells. 9. Does the Covid-19 vaccine cause Covid-19? Answer: No.

<https://www.easterndioocese.org/files/2021/Covid19-VaccineTech.pdf/>

Similarity 48%

Title:[Covid-19 vaccines: How they are made and how they work to ...](#)

<https://www.otsamerica.net/wp-content/uploads/2021/03/Covid19-VaccineTech.pdf>

Similarity 15%

Title:[Covid-19 vaccines: How they are made and how they work to ...](#)

vaccines are typically inactivated chemically with formalin making the virus inert; (3) Fractionation or a separation process is when the virus is broken up into components to make vaccines out of fragments of proteins; (4) Some vaccines are based on the ability to copy a piece of the virus' genetic material (a gene) of interest from the virulent virus that codes a protein and ...

[Check](#)

Similarity 6%

Title:

[www.readkong.com > page > covid-19-vaccines-how-theyCOVID-19 VACCINES: HOW THEY ARE MADE AND HOW THEY ... - ReadkonG](#)

Answer: Both the Pfizer-BioNTech and Moderna vaccines deliver a "genetic message" or a specific nucleotide sequence (mRNA) from the virus to be inserted into the human host cell. This genetic message (mRNA) is protected by a lipid coat.

Check By:  Dupli Checker