COVID-19 Variant Handbook: How many there are and which vaccines effectively protect against them

As the pandemic has progressed, new coronavirus variants have been detected around the world.

Some that you may have heard of in the news are:

- B.1.1.7 (the variant first seen in the United Kingdom)
- B.1.351 (the variant first seen in South Africa)
- P.1 (the variant first seen in Brazil)

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A recent study looked into the effectiveness of the Moderna vaccine for the B.1.1.7 and B.1.351 variants. In order to do this, researchers used serum from individuals who had received the Moderna vaccine and test viruses containing the spike proteins from the variants.

It was found that test viruses with the B.1.1.7 spike protein were neutralized in a similar manner to earlier versions of the coronavirus.

However, neutralization of test viruses with the spike protein of B.1.351 was 6.4-fold lower.

According to the data released from clinical trials, the effectiveness of [the single shot Johnson & Johnson] vaccine 28 days after vaccination is:

- 66 percent effective overall
- 72 percent in the United States
- 66 percent effective in South America, where the P.1 variant is circulating
- 57 percent effective in South Africa, where the B.1.351 variant is circulating
- 85 percent effective at preventing severe COVID-19 symptoms across all geographical regions

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