The Facts About mRNA Medicines

Alliance for mRNA Medicines

Q: Do mRNA medicines permanently change your body?

A: No, mRNA medicines do not change or interact with your DNA. In fact, mRNA medicines leave your body. They utilize your body's natural process of making proteins that fight disease. The mRNA stays on the outer part of your cells and never enters the nucleus, where your DNA lives. After a protein is made, the mRNA naturally leaves the body, while the protein helps the body fight disease.

Q: Is mRNA technology new?

A: No, mRNA was first discovered in the U.S. in 1960, and American scientists have been studying its applications ever since. mRNA-based therapies have been proven safe and effective through decades of rigorous research.

Q: Are mRNA medicines properly regulated?

A: Yes, medicines delivered with mRNA must prove they are safe and effective before use. mRNA medicines undergo robust and comprehensive clinical testing, rigorous independent and FDA review processes, and ongoing safety monitoring. Like any other treatment or developed drug, health authorities closely monitor mRNA medicines to ensure continued safety and efficacy.

Q: Do mRNA medicines and vaccines have long-term side effects? Can mRNA-based therapies cause cancer or autoimmune disease?

A: Studies of mRNA medicines and vaccines have not found evidence of long-term side effects, and there is no evidence that mRNA medicines cause cancer or autoimmune disease. Scientists continue to monitor for long-term adverse effects, just as they do for all medicines. As with any medicine, mRNA vaccines have the potential to cause mild and short-lived side effects in some individuals.

Q: What are mRNA vaccines made of?

A: The main components of mRNA vaccines are mRNA, fats that help the mRNA enter cells, salts and buffers to preserve the vaccine during storage, and sugar to help protect the vaccine during freezing and thawing. The vaccine ingredients quickly depart the body in days. mRNA vaccines do not contain live virus, weakened virus, or inactivated virus, nor do they contain microchips or DNA.

Q: Are mRNA medicines less effective than other therapies?

A: Many mRNA therapies offer a highly targeted approach to treatment, and for some patients, an mRNA medicine could be the only treatment option. mRNA medicines are being developed with broad potential applications across infectious diseases, cancer, autoimmune conditions, and genetic diseases.

Q: Is the U.S. still investing in mRNA research?

A: Yes, America currently leads the global community in mRNA medicine advancement. In fact, the U.S. Department of Defense is investing in mRNA research to protect America's warfighters against deadly diseases abroad. Continued investment in mRNA medicines can protect patient health and ensure the U.S isn't overly dependent on other nations for breakthrough treatment.