

Can mRNA COVID-19 vaccines alter your DNA? Here's what the CDC and 'Fact-Checkers' got wrong.

JRH jeremyrhammond.com/2022/09/15/can-mrna-covid-19-vaccines-alter-your-dna

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The CDC and media “fact checkers” have systematically misinformed the public about the theoretical possibility of COVID-19 vaccine mRNA altering human DNA.

Summary of Key Points

- The entire “public health” establishment and the mainstream media’s censorship-promoting “fact checkers” have maintained since even before mRNA COVID-19 vaccines were available that scientists *know* with *absolute certainty* that the mRNA from the vaccines cannot alter human DNA. However, the arguments used to support that conclusion consist of factual and logical errors.
- One argument presented by the establishment is that the mRNA (and spike protein) from COVID-19 vaccines is eliminated from the body within hours or days at the most. But that is false. Scientists have shown that the mRNA (and spike protein) can persist in the body for months.
- The main argument used by the CDC and others is that the mRNA does not enter the cell nucleus, where the DNA is located, and therefore it is impossible for the genetic instructions from the vaccine to be integrated into the DNA of the vaccinated person. But that is a non sequitur fallacy. In fact, there is a mechanism, long understood by scientists, by which mRNA is “reverse transcribed” into DNA, which then is potentially capable of entering the cell nucleus and being incorporated into the host DNA.
- While the CDC and most “fact checkers” contented themselves with that non sequitur, a few prominent sources did acknowledge the ability of mRNA to be changed into DNA via the enzyme reverse transcriptase. They argued that the vaccine mRNA does not encode for that enzyme and therefore it is impossible for the mRNA to be reverse transcribed into DNA. But that is another non sequitur fallacy. It overlooks the fact that the body makes its own reverse transcriptase, and thus the theoretical possibility remains.
- A study published in February 2022 demonstrated reverse transcription of COVID-19 vaccine mRNA into DNA in human cells in a lab. This study did not prove that this occurs in the living body. The researchers also did not go so far as to determine whether that DNA could then integrate itself into the DNA of the cell line they used for the study. What it proved, however, is that the key claims made to deny the biological plausibility of this outcome, which we have been constantly bombarded with by the establishment, are false.

- In another study that has not yet been peer reviewed, another group of scientists reported the finding that mice exposed to the mRNA-encapsulating lipid nanoparticles from a COVID-19 vaccine had altered gene expression that was *inheritable* by their offspring. This does not mean that the vaccine altered the DNA of the mice because alteration of DNA is not necessary for genetic traits to be inheritable. The field of science known as “epigenetics” is dedicated to understanding how gene expression is altered by environmental factors such as heavy metals, pesticides, bacteria, viruses, *and vaccines*.
- The media’s “fact checkers” have claimed that mRNA COVID-19 vaccines are *not gene therapy* while self-contradictorily attempting to reassure the public that the technology used in these vaccines is *not new*, which alludes to years of prior research and development of mRNA technology *for gene therapy*.
- Correcting for the errors made by the CDC and others leads us inescapably to the conclusion that scientists do not yet know whether a consequence of mass vaccinating billions of people will be inheritable alterations to genes or gene expression. They do not know because it has not been studied. The “public health” establishment has instead been acting on *faith* that this will not occur with these mRNA products.
- While the sheer number of hoax “fact check” articles has lent an appearance of numerous media outlets all independently investigating and arriving at the same conclusion, in fact, many are partnered with the Poynter Institute and social media companies like Facebook and Twitter in an organized effort to suppress certain information. The criterion for whether information is to be suppressed is transparently not factual accuracy but whether it aligns with the certain government policies, such as the policy goal of increasing demand for COVID-19 vaccines.
- The Poynter Institute has received funding for its ostensible fact-checking efforts from the Bill and Melinda Gates Foundation, which is dedicated to promoting global vaccination campaigns and has partnered with Moderna, the manufacturer of one of the two mRNA COVID-19 vaccines used in the US. The US government, too, is partnered with Moderna and even claims joint ownership of its COVID-19 vaccine. The “fact check” industry consists of a web of such conflicting interests, with the illusion of “independent” fact checkers being heightened by their reliance on each other’s ostensible journalism and incessant repetition of the same government-sanctioned disinformation.

In fact, the PCR tests that have been so widely used to diagnose COVID-19 work by using reverse transcription. While oftentimes referred to simply as “PCR” for short, they are technically known as reverse transcription quantitative polymerase chain reaction assays, or “RT-qPCR”. [1] SARS-CoV-2, the coronavirus that causes COVID-19, is an RNA virus. Fragments of viral RNA, if present in the patient sample, are first reverse transcribed into DNA, and then the DNA is cyclically amplified. This process mimics the reverse transcription that occurs in nature.

There are viruses known as retroviruses that are known to incorporate genetic material into the human genome. In fact, scientists estimate that about 8 percent of our DNA consists of remnants of ancient viruses, and an additional 40 percent is believed to have a viral origin. The mechanism by which this occurs with some RNA viruses is reverse transcription. [2]

In February 2022, a lab study was published in the journal *Current Issues in Molecular Biology* showing that the mRNA from the Pfizer-BioNTech COVID-19 vaccine was reverse transcribed into DNA in a human liver cell line. The study is titled “Intracellular Reverse Transcription of Pfizer BioNTech COVID-19 mRNA Vaccine BNT162b2 In Vitro in Human Liver Cell Line”.

As stated in the title, the study authors demonstrated this *in vitro*, meaning outside of the body in an artificial environment, so their findings do not prove that the vaccine mRNA can be reverse transcribed into DNA *in vivo*, or in the living body. Furthermore, they did not demonstrate that the reverse transcribed DNA incorporates itself into the DNA of the host cells. [3]

Consequently, we cannot draw the conclusion that the vaccine mRNA can become incorporated into human DNA. Nevertheless, the study proves how the “fact checkers” have been relying on a logical fallacy and falsifies their conclusion that scientists *know* this to be impossible. Notably, in perpetrating this deception, the media are simply following the example set by the US Centers for Disease Control and Prevention (CDC).

In short, the mainstream media’s self-described “fact checkers” have been hypocritically propagating misinformation, which content is then used by social media companies like Facebook to suppress truthful information about COVID-19 vaccines.

A review of what the CDC and the media’s “fact checkers” have been saying in comparison with what we know from the scientific literature is instructive, as is an examination of the conflicting interests of the “fact check” industry.

Reuters’ “Fact Check”, Big Pharma, and the Poynter Institute



Thomson Reuters Building in Canary Wharf, London (Photo by [Reubentg](#), Licensed under [CC BY-SA 3.0](#))

Even before the FDA issued emergency use authorization for the mRNA COVID-19 vaccines, the public was being told that there was no possible way for the genetic material from the vaccines to be integrated into human DNA.

An anonymously written *Reuters* “fact check” [article](#) on May 18, 2020, responded to the claim that the COVID-19 vaccines then under development would genetically modify humans by asserting that it is “scientifically untrue.” Rating the claim as “False”, *Reuters* proclaimed to know with certainty that “A future COVID-19 vaccine will not genetically modify humans.” The premise for that conclusion was the fact that vaccine developers were not aiming for “deliberate insertion of foreign DNA [or RNA] into the nucleus of a human cell”.

However, *Reuters* failed to address the possible *unintended consequence* of vaccine mRNA being reversed transcribed into DNA that could then theoretically be incorporated into the host genome.[4]

Notably, *Reuters* is [partnered](#) with the Poynter Institute in its “[International Fact-Checking Network](#)” (IFCN), which generates content used by social media companies [like Facebook](#) to suppress information that does not align with certain political agendas, including the policy aim of generating high demand for COVID-19 vaccines, under the false pretext of combating ostensible “misinformation”.^[5] The reality, as this case study will adequately demonstrate, is that the “fact checkers” have no problem with misinformation as long as it furthers the adopted political agenda, which happens to align with the financial interests of the pharmaceutical industry.

More will be said about the IFCN below, but relatedly, the President and Chief Executive Officer (CEO) of the Thomson Reuters corporation until March 2020 was James C. Smith, who is a board member of the World Economic Forum (WEF) and has also been a board member of Pfizer—the manufacturer of an mRNA COVID-19 vaccine—since June 2014.

Smith remains a board member of the Thomson Reuters Foundation, a charitable foundation of the Thomson Reuters corporation whose mission is to “use the combined power of journalism and the law to build global awareness of critical issues faced by humanity, inspire collective leadership and help shape a prosperous world where no one is left behind.”[6]

Board Memberships

TITLE	COMPANY	TENURE
Board Member	Marshall University	08/2022–PRESENT
Chairman	Thomson Reuters Foundation	03/2020–PRESENT
Board Member	Pfizer Inc	06/2014–PRESENT
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Other Memberships

TITLE	COMPANY
BOARD MEMBER	World Economic Forum
MEMBER	World Economic Forum International Business Council

A Bloomberg profile for James C. Smith, a board member of the Thomson Reuters Foundation and of Pfizer.

PolitiFact’s “Fact Check”

Two days after *Reuters*’ article appeared, the Poynter Institute’s publication *PolitiFact* issued its own “fact check” of claims that developmental COVID-19 vaccines would alter human DNA. While it was legitimate to correct misinformation that these products would certainly do so, *PolitiFact* deceived readers by claiming that scientists had *tested* and *falsified* that hypothesis.

The author of the article was Emily Venezky, an intern with the publication and a student at George Washington University. To support the conclusion that alteration of DNA would be impossible, Venezky claimed that an article in the journal *Frontiers on Immunology* “analyzed new studies that found mRNA ‘cannot potentially integrate into the host genome and will be degraded naturally.’”[7]

That is a lie, however. In fact, that journal paper was *not* a review of studies designed to test the hypothesis of genomic integration. It was simply a review of mRNA technology being utilized for vaccine development. The statement about it being biologically impossible for the mRNA from such products to be integrated into the host genome was merely an *assertion*, in support of which the authors of the paper cited zero studies.

One of the four authors of that paper was an employee of the vaccine manufacturer GlaxoSmithKline (GSK).[8]

Health Feedback's "Fact Check", Big Pharma, the NIH, and the Gates Foundation

On June 30, 2020, *Health Feedback*, a publication of the organization Science Feedback, ran a headline claim that "RNA vaccines do not alter our DNA".[9]

The article has no named author but had three named reviewers and was edited by Flora Teoh. One reviewer, Angéline Rouers, is named as a senior research fellow with A*STAR Infectious Diseases Labs, where "researchers are working to establish new treatment regimens, diagnostic methods, and vaccine candidates for ongoing and emerging respiratory diseases." [10] The two others, Robert Carnahan and Sanjay Mishra, were with the Vanderbilt University Medical Center, which receives funding from the NIH and the Gates Foundation. [11] Carnahan has also been a direct recipient of NIH funding. [12]



Bill Gates with NIH Director Francis Collins and NIAID Director Anthony Fauci at the NIH in June 2017
(Photo by NIH, licensed under CC BY-NC 2.0)

At a time when there were no data available from human trials of either the Moderna's or Pfizer's mRNA COVID-19 vaccine, and with no mRNA vaccine ever having been used in the human population before, *Health Feedback* curiously insisted that "Previous studies have demonstrated that RNA vaccines are generally safe."

To support the claim that "RNA vaccines are considered to be extremely safe based on past research", *Health Feedback* cited two sources, neither of which supports the implicit claim that scientists had done studies using mRNA vaccines to determine whether the mRNA could be incorporated into host DNA.[13]

The first, a paper from 2018 in *Nature Reviews Drug Discovery*, simply declared, without explanation, that, unlike with DNA-based vaccines, "there is no potential risk of infection or insertional mutagenesis." Further down the page, the paper authors again simply declared, "In vaccinated people, the theoretical risks of infection or integration of the vector into host cell DNA are not a concern for mRNA." They provided no explanation for why this wasn't a concern. They also failed to acknowledge the possibility reverse transcription.

Perhaps helping to explain this omission was the disclosure by two of the authors that they were "named on patents that describe the use of nucleoside-modified mRNA as a platform to deliver therapeutic proteins and vaccines." [14]

The second source cited by *Health Feedback*, a paper from 2012 in *RNA Biology*, also offhandedly dismissed the risk by describing mRNA as "an intrinsically safe vector" on the grounds that it "does not interact with the genome". The authors of this paper, too, failed to acknowledge the possibility of reverse transcription.[15]

"No potential conflicts of interest were disclosed."

The authors of that *RNA Biology* paper declared no conflicts of interest. To check the honesty of that declaration, I simply followed the link to view other publications by the senior author, Karl-Josef Kallen, which immediately turned up a 2016 paper in *OncolImmunology* in which he disclosed having been "employed at CureVac AG." [16] He is listed on numerous patents related to the development of mRNA technology as a vaccine platform.[17] For example, a patent filed in 2012 shows Kallen as an inventor and CureVac as the applicant for an invention that "relates to vaccines comprising at least one mRNA encoding at least one antigen for use in the treatment of a disease in an elderly patient . . . , wherein the treatment comprises vaccination of the patient and eliciting an immune response in said patient." [18]

The mRNA technology platform company eTheRNA reported in May 2016 that Dr. Kallen had joined its team as Chief Medical Officer. Kallen had been "Head of Global Cancer immunotherapies at Merck KG/Merck Serono" before joining CureVac in 2009, where he had served as Chief Medical Officer (CMO) and Chief Scientific Officer. The press release noted that CureVac was "a German biopharmaceutical company that focusses on the development of mRNA-based medicines". While at CureVac, Kallen had been "instrumental in establishing

key corporate agreements” such as a “research agreement with Sanofi and DARPA”. Kallen also “contributed to the instigation for the agreement with the Bill & Melinda Gates Foundations for the development of therapies against infectious diseases.”[19]



The headquarters of CureVac in Tübingen, Germany (Photo by [Dktue](#), public domain).

The website of CureVac currently lists the Gates Foundation on its “Partnerships” page, stating that their “common goal” was “to develop mRNA-based vaccines”. [20] An [article in *Nature*](#) in June 2015 described how mRNA technology could be used for “gene therapy” and reported that CureVac was developing the means to deliver the mRNA with “\$220 million in equity, including \$52 million secured from the Bill & Melinda Gates Foundation in March this year.” [21]

As [reported by *The Nation*](#) in October 2020, a Securities and Exchange Commission (SEC) [filing](#) from CureVac showed that, in addition to grant funding, the Gates Foundation held a \$40 million equity investment in CureVac. *The Nation* determined that tax filings showed “more than \$250 million” from the Gates Foundation “invested in dozens of companies working on Covid vaccines, therapeutics, diagnostics, and manufacturing”, which investments “put the foundation in a position to potentially financially gain from the pandemic.” [22]

As *The Nation* [reported](#) in May 2021, “Given the tens of thousands of charitable grants and investments the foundation has made over the last two decades, the charity may have acquired access to or ownership of a stunning level of technology and intellectual property, which translates into the unprecedented level of influence Gates has not just over global health but also the pharmaceutical industry.” [23]

The *PolitiFact* article had referenced a [blog post](#) by Bill Gates published on April 30. In it, Gates boasted that his foundation was “the biggest funder of vaccines in the world” and that the effort to develop vaccines for COVID-19 “dwarfs anything we’ve ever worked on before.” The Gates Foundation had been funding “the development of an RNA vaccine platform for nearly a decade”, although the “catch” was that “we don’t know for sure yet if RNA is a viable platform for vaccines.”[24]

A November 2020 *New York Times* [article](#) proclaimed in its headline how Bill Gates was on a “Quest to Vaccinate the World”. Gates had “spent billions” promoting vaccines and had become “the most powerful—and provocative—private player in global health.” The World Health Organization (WHO) “relies on the Gates Foundation as one of its largest donors.” Gates had “consulted frequently with Dr. Anthony S. Fauci”, the director of the National Institute for Allergy and Infectious Disease (NIAID), which operates under the NIH.

“That self-censorship was so widespread it acquired a nickname: ‘the Bill Chill.’”

The *Times* further reported how some public officials “disagreed with Mr. Gates’s priorities”, but they were afraid to publicly criticize the Gates Foundation for fear of losing its support. “That self-censorship was so widespread”, the *Times* explained, “it acquired a nickname: ‘the Bill Chill.’”[25]

The Gates Foundation has also provided funding to many mainstream media outlets.

The *Columbia Journalism Review* investigated and [reported](#) on the Gates Foundation’s influence on journalism in an August 2020 article titled “Journalism’s Gates keepers”. The author, Tim Schwab, combed through Gates Foundation grants and calculated a total of over \$250 million going toward journalism, including numerous media companies and charitable organizations affiliated with news outlets. As Schwab noted:

The foundation even helped fund a 2016 report from the American Press Institute that was used to develop guidelines on how newsrooms can maintain editorial independence from philanthropic funders. A top-level finding: “There is little evidence that funders insist on or have any editorial review.”

Notably, the study’s underlying survey data showed that nearly a third of funders reported having seen at least some content they funded before publication.

In another richly ironic set of circumstances:

PolitiFact and *USA Today* (run by the Poynter Institute and Gannett, respectively—both of which have received funds from the Gates Foundation) have even used their fact-checking platforms to defend Gates from “false conspiracy theories” and “misinformation,” like the idea that the foundation has financial investments in companies developing COVID vaccines and therapies. In fact, the foundation’s website and most recent tax forms clearly show investments in such companies, including Gilead and CureVac.[26]

MintPress News similarly investigated the foundation’s grants related to the influence of journalism and in November 2021 reported a total of over \$300 million. Recipients of Gates Foundation money include CNN, NBC, NPR, PBS, *The Atlantic*, BBC, *The Guardian*, *The Financial Times*, *The Daily Telegraph*, *Le Monde*, *Der Spiegel*, *El País*, and *Al Jazeera*. Other recipients include influential organizations such as the International Center for Journalists, the Pulitzer Center for Crisis Reporting, the Center for Investigative Reporting, the Bureau of Investigative Journalism, the National Press Foundation, and of course The Poynter Institute. Other institutional grants pertaining to the instruction of journalists include those to the WHO and numerous educational institutions including Johns Hopkins University. [27]

Coming back to the *Health Feedback* “fact check”, the simplest explanation for its failure to support its claim with studies designed to test the hypothesis that mRNA from a developmental mRNA vaccine might become incorporated into host DNA is that no such studies existed.

The article quoted Vanderbilt staff scientists Sanjay Mishra saying that there was “little concern” about mRNA from a vaccine integrating itself into the DNA “because RNA itself cannot integrate into genomic DNA without the presence of a retrovirus element, such as reverse transcriptase and integrase”. Neither *Health Feedback* nor any of its cited experts explained that the body produces its own reverse transcriptase. This perhaps explains why Mishra described the risk as being “little” as opposed to nonexistent.

The article further asserted that “studies examining the potential integration of nucleic acid vaccines into DNA have confirmed that such changes are not known to occur.”

The first observation to be made about that statement was the curious wording that such integration is “not known to occur.” It is tautological that if scientists have conducted no studies to test the hypothesis that mRNA from COVID-19 vaccines can integrate into host DNA, this outcome will not be known to occur.

Furthermore, to support that claim, *Health Feedback* again cited the two studies that, far from being designed to test the hypothesis, offhandedly dismissed the possibility without any examination whatsoever, which is perhaps explained by the disclosed *and undisclosed* conflicts of interests of study authors.

Relatedly, *Health Feedback* claimed that future mRNA COVID-19 vaccines could not cause autoimmune disease because “any RNA injected from a vaccine will not persist long enough to cause autoimmune disorders”. To support that claim, the “fact checker” cited two studies, both irrelevant since they related to the persistence of naked mRNA, *not mRNA encapsulated in a lipid nanoparticle for the specific purpose of preserving the mRNA*, as is the case with the mRNA from Moderna’s and Pfizer’s respective COVID-19 vaccines.[28]

In fact, as we will come to, the mRNA from COVID-19 vaccines has been shown to persist in the body for *months*.

Finally, *Health Feedback* argued that mRNA vaccines were not “gene therapy” because gene therapy “is specifically designed to introduce DNA into a patient’s genome”, and “RNA is not used in gene therapy”.

However, that, too, is false. The source cited, an article from the National Library of Medicine, which operates under the National Institutes of Health (NIH), does not state that RNA is not used in gene therapy. The portion quoted by *Health Feedback* in fact defines a “gene therapy” product as one “designed to introduce genetical material into cells to compensate for abnormal genes or to make a beneficial protein.” The mRNA COVID-19 vaccines are specifically designed to introduce genetic material into cells to make the SARS-CoV-2 spike protein and thus meet the definition of “gene therapy” provided by *Health Feedback*’s own cited source. (*Health Feedback* made no effort to reconcile the glaring contradiction between its claim and the definition of “gene therapy” presented in its own quotation from the source.)

Furthermore, that same NIH article in turn cited a paper from May 2021 in *Frontiers in Genetics* that falsifies *Health Feedback*’s claim by explaining how gene therapy can involve insertion of either “DNA or RNA sequences” (emphasis added). Elaborating, the paper described how one “possibility for delivered cargo is mRNA”, which was “challenging to deliver” due to the rapid breakdown of mRNA, but which obstacle could be overcome by encapsulating the mRNA in a lipid nanoparticle to preserve it for delivery of the genetic material into the host cells.[29]

Health Feedback’s claim is also falsified by another of its own cited sources, a paper in the journal *Gene Therapy* in May 2007 that explained how, as an alternative to DNA, “messenger RNA (mRNA) can be used for the expression of any therapeutic protein *in vitro* and *in vivo*.” The authors described mRNA as “a vehicle for transient gene delivery in humans.”[30]

The falsity of *Health Feedback*’s claim that mRNA is not considered a gene therapy technology will be further illuminated below.

Health Feedback, unsurprisingly, is yet another member of the Poynter Institute’s “fact check” industry.

The AP's "Fact Check"



200 Liberty Street, New York, New York, where the Associated Press is headquartered (Photo by giggel, licensed under [CC BY 3.0](#))

A “fact check” [article](#) authored by Beatrice Dupuy and published by the *Associated Press* (AP) on September 4, 2020, responded to the false claim that we *know* that mRNA COVID-19 vaccines will alter human DNA with the false claim that we *know* they will not.[31]

Like *Reuters*, the AP is a [member](#) of the IFCN, and it has partnered with Facebook and Twitter to suppress information that does not align with certain government policies under the demonstrably false pretense of combatting “misinformation”. [32]

The AP’s counterclaim was contradicted by an [article](#) about the new mRNA COVID-19 vaccines published one day earlier in the journal *JAMA*, the primary journal of the American Medical Association (AMA). The *JAMA* article stated that since the mRNA doesn’t enter the cell’s nucleus, “the chance of its integration into human DNA *is believed to be very low.*” (Emphasis added.)

Thus, scientists expressed *faith* that this would not occur despite it being acknowledged as a *theoretical possibility*. The *JAMA* article added that another reason the risk was “believed” to be low was that “the body breaks down mRNA and its lipid carrier within a matter of hours”.
[33]

The AP article also made that argument. Denying the theoretical possibility, the AP article cited “experts” who said that the forthcoming mRNA COVID-19 vaccines “cannot alter DNA”. The AP quoted Dr. Dan Culver, a pulmonologist at Cleveland Clinic, asserting that the mRNA vaccines “cannot change your genetic makeup” because the mRNA “survives in the cells” for only a matter of “hours”. [34]

Notably, the logical corollary of that syllogism is that if the mRNA were to persist for a longer duration in the body, then it *might* be possible for it to integrate into the host DNA.

As it turns out, the claim that the mRNA from COVID-19 vaccines lasts only “hours” in the body is *false*, which brings us to the role of the CDC in the propagation of government-approved disinformation.

The CDC’s “Myths” vs. “Facts”



Entrance to the headquarters of the Centers for Disease Control and Prevention in Atlanta, Georgia
(Daniel Mayer/CC BY-SA 3.0)

Contrary to yet another false claim from the media’s “fact checkers”, studies have now shown that both the mRNA from COVID-19 vaccines and the vaccine-induced spike protein can persist in the body for *months*. [35]

A study published in the *Journal of Immunology* in November 2021 observed that the vaccine-induced spike protein was carried by extracellular vesicles called “exosomes” and circulated throughout the body, and they observed persistence of the spike protein *four months* after receipt of the second dose of mRNA COVID-19 vaccine.[36]

A study published in *Cell* in January 2022 found vaccine mRNA to still be present in the lymph nodes of vaccinated individuals *two months* after receipt of the second dose.[37]

Instructively, the CDC has quietly removed the claim from its website that the mRNA and spike protein from COVID-19 vaccines are rapidly eliminated from the body. On its webpage “Understanding mRNA COVID-19 Vaccines”, the CDC previously claimed:

The mRNA and the spike protein do not last long in the body.

Our cells break down mRNA from these vaccines and get rid of it within a few days after vaccination.

Scientists estimate that the spike protein, like other proteins our bodies create, may stay in the body up to a few weeks.[38]

Those statements were still present on the page as of July 22, 2022. However, as of July 23, the CDC’s claim that the mRNA and spike protein “do not last long in the body” has been removed. [39] Despite the CDC making this edit on one of those two days, as of this writing, the page continues to falsely state that it was last updated on July 15, thus concealing the deletion of the false claim.[40]

On the other hand, the CDC persists in its claim that COVID-19 vaccines “do not affect or interact with our DNA” based on the non sequitur fallacy that “mRNA from these vaccines do **not** enter the nucleus of the cell where our DNA (genetic material) is located, so it cannot change or influence our genes.”[41]

I entered the search phrase “can mRNA vaccine change DNA” into Google’s internet search engine and was presented in the results with an answer box to “Common questions”. In reply to the question “Will a COVID-19 vaccine alter my DNA?”, Google answers: “No. COVID-19 mRNA vaccines do not change or interact with your DNA in any way.”



The source Google cites to support that assertion is another CDC webpage titled “Myths and Facts about COVID-19 Vaccines”, which includes a section subtitled “MYTH: COVID-19 vaccines can alter my DNA.” The CDC asserts: “FACT: COVID-19 vaccines do not change or interact with your DNA in any way.”

To support its assertion, the CDC continues to mislead about the duration of mRNA and spike protein persistence by stating that once the vaccine elicits an immune response, the body “discards all the vaccine ingredients”. The CDC further employs the non sequitur fallacy that the vaccines cannot alter DNA because the mRNA “never enters the nucleus of your cells”.^[42]

Like the media “fact checkers”, the CDC declines to inform the public that there is a known mechanism by which foreign RNA can be incorporated into host DNA even though RNA does not directly enter the cell nucleus.

Notice also that the CDC claims not only that the vaccines cannot alter DNA, but that they cannot alter *gene expression*. That is an even bolder claim considering the existence of a field of science known as “epigenetics”, which is the study of how gene function can be altered *without* changes to DNA. Scientists now understand that gene expression can be altered by environmental exposures, such as heavy metals, pesticides, bacteria, viruses, and vaccines.^[43]

“This review explores this rapidly evolving area of investigation and outlines the many and varied ways in which vaccination and natural infection can influence the human epigenome....”

As noted by the authors of a systematic review published in the journal *Epigenetics* in March 2020, in recent years, attention has focused on the ability of vaccines “to modify the human epigenome”. There are “many and varied ways in which vaccination and natural infection can influence the human epigenome from modulation of the innate and adaptive immune response, to biological ageing and modification of disease risk.”

The review concluded by emphasizing the need for future research “to focus on the epigenetic impact of vaccines in early childhood, when the epigenome is particularly susceptible to modification and the consequences on immune maturation and development are most significant.”[44]

The CDC’s claim that mRNA COVID-19 vaccines cannot affect gene expression has also been called into question by a study published on the preprint server *BioRxiv* on August 20, 2022. (A preprint study is one that has not yet been through the peer review process.) The study found not only that exposure to mRNA-encapsulating lipid nanoparticles affected the adaptive and innate immune responses of injected mice, but also that this technological platform “can pass down the acquired immune traits to their offspring”.

The authors hypothesized that it may have been the “highly inflammatory properties of the mRNA-LNP platform” that “induced the inherited changes”, remarking that “it would be very important to determine” whether “any such immune inheritance may be observed in humans vaccinated with mRNA vaccines.” They concluded that their findings “highlight the need for more research to determine this platform’s true impact on human health.”[45]

The Poynter Institute’s “Fact Check”, the Gates Foundation, the CDC, the NIH, and Big Pharma

On October 15, 2020, the Poynter Institute directly published its own “fact check” that similarly rated the claim that mRNA vaccines could alter people’s DNA as “NOT LEGIT”. The author of the Poynter article, Yacoub Kahkajian, described in the byline as a “MediaWise Teen Fact-Checker”, claimed that genomic integration of vaccine mRNA was impossible. Illuminating the process by which he arrived at that conclusion, he described spending a bit of time Googling the topic and found the respective “fact check” articles from *Reuters* and the AP, which then served as the basis for his conclusion.

The Poynter Institute declined to disclose to its “fact check” readers that the two key sources cited to support the desired conclusion were both members of the institution’s own “fact checking” network. (To find that information on the institution’s website would require the reader to be already aware of its partnerships with various media agencies and to go digging around its website to learn which ones.)

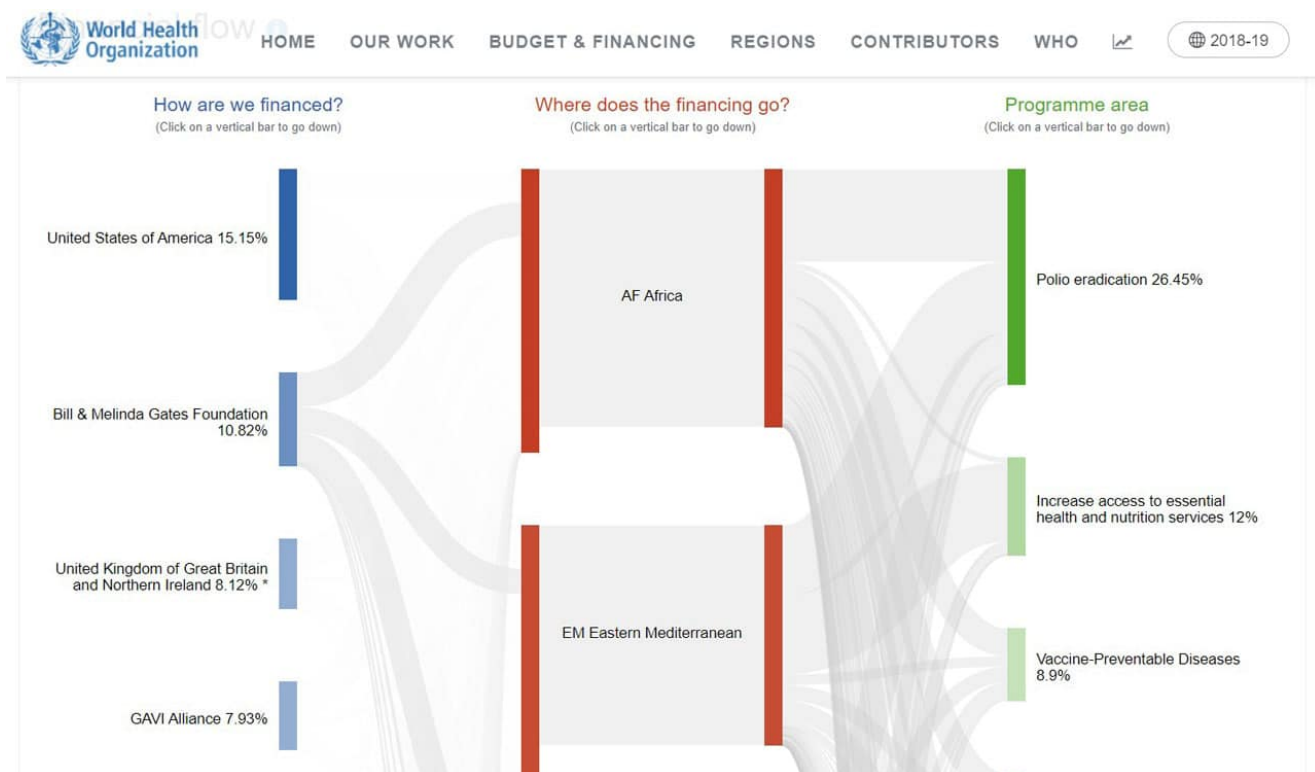
Like both the *Reuters* and AP articles, the Poynter “fact check” article failed to acknowledge that scientists had long known it is possible for mRNA to be reverse transcribed into DNA, which can then potentially be incorporated into the host DNA.[46]

This Poynter Institute “fact check” illustrates the problem of “churnalism”, whereby media sources recycle each other’s content, lending an illusion of numerous outlets independently reporting the same information when in reality there is very little original investigation.[47]

This problem is compounded when the recycled content uncritically parrots proclamations from government officials or agencies like the CDC as though gospel truths.

There is also the matter of conflicting interests. The Poynter Institute has received funding from the Bill and Melinda Gates Foundation ostensibly to “improve the accuracy in worldwide media claims related to global health and development”.^[48] In 2016, the institute’s “fact check” website *PolitiFact* announced the launch of “a new initiative to fact-check claims about global health and development”, which was “funded by a grant from the Bill & Melinda Gates Foundation.” The President of the Poynter Institute, Tim Franklin, expressed how he was looking forward “to working with the Gates Foundation on this critical initiative.”^[49]

The Gates Foundation, in turn, is a leading funder of the World Health Organization (WHO), providing nearly 11 percent of the WHO’s total budget, which is second only to the US, which provides about 15 percent. The Gates Foundation money is mostly dedicated to global vaccination campaigns.^[50]



The WHO also receives funding from numerous pharmaceutical companies, including Bayer AG, Eli Lilly, GlaxoSmithKline (GSK), Merck, Sanofi Pasteur, Sanofi Aventis, Seqirus, and Sinovac Biotech. Other contributors to the WHO include Gavi, The Vaccine Alliance (GAVI) and the CDC Foundation.^[51]

GAVI is also funded by the Gates Foundation, totaling over \$4 billion to date.^[52] The CDC Foundation is a non-profit organization created by the US Congress to “mobilize philanthropic and private-sector resources to support the Centers for Disease Control and

Prevention's critical health protection work.”[53] The CDC Foundation's funders include the Gates Foundation, GAVI, Bayer, GSK, and Merck.[54] Thus, the CDC, while not directly funded by the pharmaceutical industry, does receive pharmaceutical industry money via the CDC Foundation.

Additionally, contrary to another hoax “fact check” from yet another member of the Poynter Institute's International Fact-Checking Network, *USA Today*, the Gates Foundation does have ties to Moderna, the developer of one of the two mRNA COVID-19 vaccines used in the US. While *USA Today* claimed in its headline that Dr. Anthony Fauci, the director of the NIAID under the NIH, and the Gates Foundation “have no ties to drug company Moderna”, in fact, the both the Gates Foundation and the NIAID have partnered with the pharmaceutical company Moderna in the development of its mRNA COVID-19 vaccine.



(Photo by Marco Verch, licensed under CC BY 2.0)

Curiously, the *USA Today* article contradicted its own headline by noting that the Gates Foundation was listed as one of Moderna's collaborators on the company's page at the investor website Flagship Pioneering. Other named collaborators with Moderna include the Biomedical Advanced Research and Development Authority (BARDA), which operates under the US Department of Health and Human Services, and the Defense Advanced Research Projects Agency (DARPA), which operates under the US Department of Defense.[55] The respective acknowledgments of those collaborators have since been removed from the page.[56] However, the “Strategic Collaborators” page of Moderna's own website, which falls under the category of “Partnerships” in the site's navigational hierarchy, continues to acknowledge BARDA, DARPA, and the Gates Foundation.[57]

Another page of Moderna's site, no longer existing, used to explain how, in January 2016, Moderna "entered a global health project framework agreement with the Bill & Melinda Gates Foundation to advance mRNA-based development projects for various infectious diseases." The Gates Foundation kicked it off by committing up to \$20 million in grant funding, with the option for follow-on projects bringing total potential funding under the agreement to \$100 million. Among Moderna's obligations were "to grant the Bill & Melinda Gates Foundation certain non-exclusive licenses." [58]

The NIAID and NIH, too, are literally partnered with Moderna, with the NIH having claimed joint ownership of the COVID-19 vaccine and claimed patent rights on the grounds that NIH scientists are co-inventors of the vaccine. [59]

FACT CHECK

Fact check: Fauci, Gates, Epstein and Soros have no ties to drug company Moderna

Chelsey Cox USA TODAY

Published 8:26 p.m. ET Sep. 11, 2020 | Updated 8:26 p.m. ET Sep. 11, 2020



The original USA Today headline falsely claimed that Anthony Fauci and Bill Gates have "no ties" to COVID-19 vaccine manufacturer Moderna

As a result of my having confronted the author about the bald-faced lie contained in her headline, *USA Today* changed the headline, but the newspaper refused to publicly acknowledge its error or to update the article to inform its readers that both Fauci and Gates are literally partnered with Moderna. [60]

Such intertwining conflicts of interests help to explain why the Poynter Institute's "fact check" industry never fact-checks obviously false claims from government agencies like the CDC or its partners in organized media censorship. A key lesson is that the "fact checkers" have absolutely no problem with misinformation provided that the false claims serve to manufacture consent for the policy goal of achieving high vaccine uptake.

For instance, where were the "fact checkers" when virtually the entire "public health" establishment was lying that two doses of COVID-19 vaccine would induce durable sterilizing immunity, thereby ending the pandemic by enabling the population to achieve herd immunity? [61] Where were the "fact checkers" when the CDC was blatantly lying that two

doses of COVID-19 vaccine conferred greater protection against SARS-CoV-2 infection than natural immunity?[62] The “fact checkers” were nowhere to be seen, *apart from their role in helping to suppress the truth and propagate the government-sanctioned lies.*

The CDC’s claim that COVID-19 vaccines confer superior immunity was later falsified by the CDC’s own data reported by the CDC’s own researchers in the CDC’s own journal.[63] For repeatedly attempting to report that fact on LinkedIn, I was blocked and permanently suspended. Evidently, I violated LinkedIn’s Professional Community Guidelines by sharing factually accurate information that corrected official disinformation “from leading global health organizations and public health authorities”.

Would you care to deny, @LinkedIn/ @LinkedInHelp, that you are blocking user posts and suspending accounts for sharing factually accurate information correcting disinformation from "from leading global health organizations and public health authorities"?<https://t.co/nzJWjLZoyj>

— Jeremy R. Hammond (@jeremyrhammond) September 8, 2022

Snopes’ “Fact Check”

In an article published on December 10, 2020, the oft-mocked “fact check” website *Snopes*, another signatory of the IFCN’s “code of principles” and a partner in Facebook’s efforts to combat ostensible “misinformation” from the end of 2016 until early 2019, likewise asserted that it was “False” that mRNA vaccines could affect human DNA.[64]

The article usefully explained that mRNA is unstable and rapidly degrades in the body, so both Pfizer and Moderna had developed a method of encapsulating the mRNA in a lipid nanoparticle, thereby enabling its preservation for delivery of the genetic material into the cells, where it instructs the cell’s machinery to manufacture the spike protein of SARS-CoV-2.

“While this delivery method is capable of transferring mRNA into the outer cytoplasm portion of a cell,” *Snopes* argued, “it is chemically and physically impossible for it to deliver mRNA across the nuclear envelope into the nucleus of a cell. . . . Because these lipid-protected mRNA molecules are incapable of entering a cell’s nucleus, they are incapable of altering human DNA. It’s as simple as that.”[65]

But it is *not* that simple. Like the other “fact check” articles, *Snopes* simply failed to acknowledge the possibility of reverse transcription of vaccine mRNA into DNA.

Newsweek’s Contribution and GAVI

On January 15, 2021, *Newsweek* published an article by staff reporter Jason Murdock titled “Why mRNA COVID Vaccines Can’t Change Your DNA”. There was a “broad scientific consensus”, the article stated, that this was an impossibility.

To support the officially approved narrative, the author of the *Newsweek* article cited the early *Reuters* “fact check” as well as the CDC. Describing the idea as having been “repeatedly debunked and fact-checked as false,” the article reiterated the supposed consensus by citing GAVI, the international “Vaccine Alliance” organization funded by the Bill & Melinda Gates Foundation and partnered with the World Health Organization (WHO) to promote vaccines. According to GAVI, the mRNA from COVID-19 vaccines “will become degraded in approximately 72 hours” and “can’t combine with our DNA to change our genetic code.”

While not specifically acknowledging the possibility of reverse transcription, *Newsweek* did at least allude to it by quoting the statement from GAVI that “Some viruses like HIV can integrate their genetic material into the DNA of their hosts, but this isn’t true of all viruses... mRNA vaccines don’t carry these enzymes, so there is no risk of the genetic material they contain altering our DNA.”[66]

What GAVI was referring to is how the HIV virus and other retroviruses encode a type of enzyme known as “reverse transcriptase”, which can reverse transcribe the single-stranded RNA into double-stranded DNA, as has been known since the 1970s.[67]

The implicit logical syllogism being presented by the *Newsweek* article is that since mRNA vaccines do not encode this enzyme, therefore the process of reverse transcription cannot occur. However, this, too, is a non sequitur fallacy because, as noted by the authors of the study in *Current Issues in Molecular Biology*, the human body produces its own reverse transcriptase enzymes, and therefore the theoretical possibility remained.[68]

As explained for the layperson in a blog post by Dr. Doug Corrigan, who holds a Ph.D. in Biochemistry and Molecular Biology:

It is well known that RNA can be ‘reverse transcribed’ into DNA. Residing in our cells are enzymes called ‘reverse transcriptases’. These enzymes convert RNA into DNA. Multiple sources for this class of enzymes exist within our cells. These reverse transcriptases are normally made by other viruses termed ‘retroviruses’. HIV is a retrovirus and so is Hepatitis B, but there are many other retroviruses that fall in this category. In addition to these external viruses, there are viruses that are hard-wired into our genomic DNA called endogenous retroviruses (ERVs). These ERVs harbor instructions to produce reverse transcriptase. In addition to ERVs, there are mobile genetic elements residing in our DNA called LTR-retrotransposons that also encode for reverse transcriptase enzymes. To top it all off, reverse transcriptase is naturally used by our cells to extend the telomeres at the end of chromosomes.

These endogenous reverse transcriptase enzymes can essentially take single-stranded RNA and convert it into double-stranded DNA. This DNA can then be integrated into the DNA in the nucleus through an enzyme termed DNA integrase.

Corrigan stated that the probability of this occurring with mRNA COVID-19 vaccines in any given individual “may be miniscule”, but it was nevertheless a theoretical risk that, if occurring, would result globally in genomic integration in “a modestly large number of people”.[\[69\]](#)

Research scientist Dr. James Lyons-Weiler, the CEO and Director of The Institute for Pure and Applied Knowledge (IPAK), has similarly stated, “There is a non-zero probability that anyone receiving an mRNA-based vaccine against SARS-CoV-2 will experience changes in their DNA in cells ‘infected’ by the encapsulated mRNA.”[\[70\]](#)

Dr. Paul Offit’s “Vaccine Education”

CAN MRNA VACCINES ALTER A PERSON'S DNA?



Talking About Vaccines
with Dr. Paul Offit



In a YouTube [video](#) published on February 10, 2021, the Children's Hospital of Philadelphia (CHOP) answered the question “Can mRNA Vaccines Alter a Person's DNA?” firmly in the negative. The video description summarized, “Dr. Paul Offit explains why it's not possible for mRNA vaccines to alter a person's DNA.”

In the video, Dr. Offit, who is the Director of the Vaccine Education Center at the CHOP, acknowledges the phenomenon of reverse transcription. Echoing GAVI, however, he claimed that this couldn't possibly occur with the mRNA from COVID-19 vaccines. “In order to do that,” Offit argues in the video, “it requires the enzyme reverse transcriptase, which it doesn't have.” Offit declined to inform his audience that the human body produces its own reverse transcriptase enzymes.

Nor did he disclose to his viewers that he was a former member of the CDC's Advisory Committee on Immunization Practices (ACIP) and a *current* member of the FDA's Vaccines and Related Biological Products Advisory Committee (VRBPAC), which was responsible for recommending that the FDA authorize the COVID-19 vaccines for “emergency use” prior to the completion of Phase III clinical trials.

Although those background details are available on [Dr. Offit's profile page](#) on the CHOP website, the conflict of interest arising from Offit's influence on government policymaking, which is coupled with his [advocacy of mandatory vaccination](#), was disclosed neither on YouTube nor on the hospital's [accompanying article](#) under its “Vaccine Education Center”.
[71]

Full Facts' “Fact Check”

Likewise trumpeting the official dogma, the London-based “fact check” organization *Full Fact* insisted in a headline on March 3, 2021, that “Moderna’s Covid-19 vaccine will not change your DNA”.^[72] The article cited two prior articles in which the organization had similarly asserted, *without explanation*, that the vaccines do not alter DNA.^[73]

Evidently, the best analytic skills the respective authors of these articles could muster was to fallaciously reason that since the vaccines weren’t *designed* to work by altering DNA, therefore they would not do so.

Every reader who understood that the products weren’t *intended* to alter human DNA was left to wonder how *Full Fact* knew for a fact that this couldn’t possibly be an *unintended* consequence of vaccines utilizing mRNA technology that was developed *for the application of gene therapy*.

WebMD’s Contribution and mRNA as Gene Therapy Technology

A headline from *WebMD* on July 19, 2021, assured that the “Chance That COVID-19 Vaccines Are Gene Therapy” was “Zero”. People claiming that the COVID-19 vaccines are “a kind of gene therapy” are “partly right”, the author, Brenda Goodman, conceded. The vaccines “are genetically based therapy”, she again conceded, while adding that the FDA “classifies them as vaccines, not gene therapy.”

She left confused readers to puzzle over the distinction between “kind of a gene therapy” and a “genetically based therapy” versus “not gene therapy.” Evidently, Goodman, too, reasoned that since the products were not designed to work by altering DNA, therefore they weren’t a gene therapy product.^[74]

In fact, the mRNA technology used for these COVID-19 vaccines did develop out of research into gene therapies. In November 2020, a month before the FDA authorized the first vaccine for “emergency use”, the American Society of Gene and Cell Therapy (ASGCT) pointed to preliminary data released by Moderna and Pfizer as having shown that “gene therapy is a viable strategy for developing vaccines to combat COVID-19.”^[75]

The ASGCT, an organization dedicated to the development of gene and cell therapies for the treatment or prevention of disease, certainly understands that the vaccines were not designed to alter DNA. It nevertheless recognized the vaccines as being a “gene therapy” technology.

“Currently, mRNA is considered a gene therapy product by the FDA.”

Indeed, in a June 2020 Security and Exchanges Commission (SEC) filing, Moderna stated that, “Currently, *mRNA is considered a gene therapy product by the FDA.*” (Emphasis added.) The FDA considered Moderna’s mRNA products—including its developmental

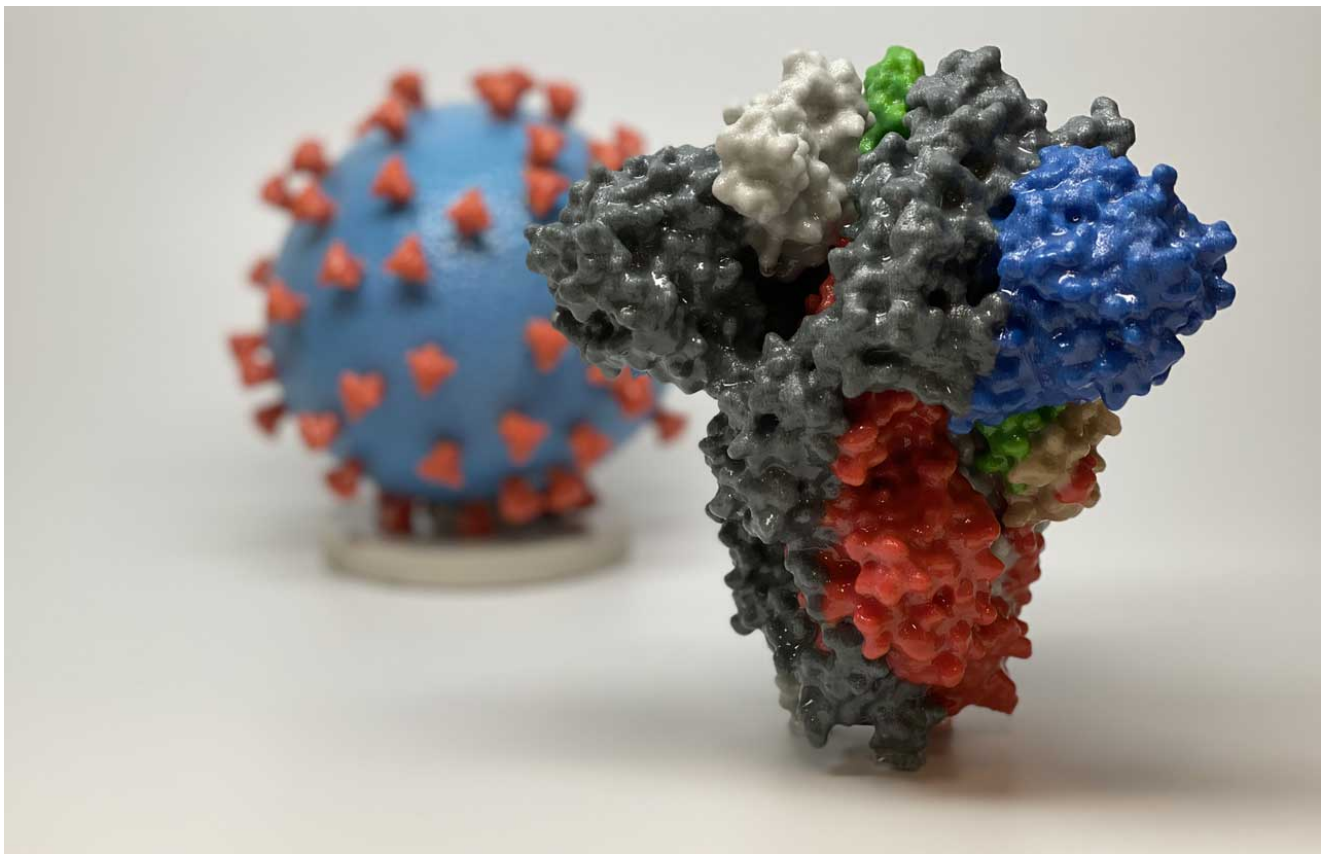
COVID-19 vaccine—as “gene therapy” technology even though Moderna’s “mRNA-based medicines” were not designed to permanently alter DNA.[76]

Clearly, the fact that the FDA considers these products to be “vaccines” does not preclude the FDA from considering the mRNA technology utilized by Moderna and Pfizer as also being classified as “gene therapy”. (We will discuss the use of mRNA for gene therapy more below.)

Continuing with the *WebMD* article, Goodman asserted that the products “can’t change your genes, and they don’t stay in your body for more than a few days.”

Parroting the official dogma, she insisted that the spike proteins that the vaccines cause the cells to produce “are not dangerous”, and the mRNA only lasts “for a couple of days” before being broken down and “swept away by the body’s normal waste disposal system.”[77]

We’ve already seen how the claim that the mRNA and spike protein are eliminated within days has been falsified by scientific research observing the persistence of both for months. It is also untrue that the spike protein of SARS-CoV-2, which is the antigen that the vaccines are designed to cause the cells to produce, is a harmless piece of the virus.



A 3D print of a SARS-CoV-2 spike protein in front of a SARS-CoV-2 virion. (Photo: [NIH/Public Domain](#))

Studies have shown that the spike protein *by itself* is toxic and pathogenic.[78] The spike protein alone can promote loss of blood-barrier integrity and trigger an inflammatory response in brain endothelial cells.[79] It can cause damage to vascular endothelial cells.[80] It has been observed to cause acute lung injury in mice.[81] Persistence of the spike protein for up to fifteen months, in the absence persistence of whole viable virus, has been associated with “Long COVID”, once again indicating the pathogenicity of the spike protein alone.[82] The spike protein alone has been observed in the lab to induce cellular stress in the absence of viral infection, with alteration of cell signaling and function resulting in secretion of pro-inflammatory molecules and induction of endothelial cell death.[83] It has been shown to promote platelet activation, a mechanism helping to explain clotting associated with COVID-19 lung disease.[84] It is well recognized in the medical literature that circulating SARS-CoV-2 spike protein *by itself*, in the absence of whole viable virus, is pathogenic.[85]

As observed in the preeminent journal *Vaccine*, the pathogenicity of the spike protein is a relevant concern for COVID-19 vaccines since these products are designed to instruct human cells to produce that protein.[86] This concern became all the more relevant in light of the repeated finding that the vaccine-induced spike protein circulates throughout the body. [87] In a paper published on the preprint website *Authorea*, a long list of physicians and scientists, including the renowned expert in cardiology Dr. Peter A. McCullough, expressed concern that government authorities were minimizing or ignoring concerns about the potential toxicity and pathogenicity of the spike protein induced by vaccination.[88] Dr. Peter Hotez, a vaccine developer and prominent advocate of mandatory vaccination, coauthored a paper in the journal *Circulation* hypothesizing that vaccine-related myocarditis might be due to some individuals eliciting a dysregulated inflammatory immune response to either the mRNA or the vaccine-induced spike protein.[89]

Like *Newsweek*, *WebMD* alluded to the process of reverse transcription by arguing that the mRNA in the vaccines does not encode for the required enzyme. To support the claim that it would be biologically impossible for this to occur, *WebMD* cited Paul Offit. As with Offit and the Children’s Hospital of Philadelphia, there was no acknowledgement from *WebMD* that the body makes its own reverse transcriptase enzymes.[90]

Another PolitiFact “Fact Check” and Gene Therapy

On August 31, 2021, *PolitiFact*, a publication of the Poynter Institute, took issue with podcast host Joe Rogan for saying, “It’s not really a vaccine in the traditional sense. . . . This is really gene therapy. It’s a different thing. It’s tricking your body into producing spike protein and making these antibodies for COVID.”

Rogan’s description of the vaccines as “gene therapy” was false, *PolitiFact* argued, because “Gene therapy involves modifying a person’s genes to cure or treat a disease. The COVID-19 vaccines do not alter your DNA. . . . The mRNA strands never enter the part of the cell

that hosts DNA, and they are quickly broken down.”

The mRNA is degraded within “a few days”, *PolitiFact* stated, and the spike protein that the mRNA instructs the cells to produce would only “stay around a little longer, up to a few weeks”.

Similarly alluding to the process of reverse transcription, *PolitiFact* cited the *WebMD* article to support its assertion that, to be able to enter the cell nucleus, the mRNA from the vaccines “would need a special enzyme” that the vaccines “don’t have”.^[91]

The acknowledgment that there is a known mechanism by which mRNA is changed into DNA was at least a step forward for *PolitiFact*, which had previously published numerous other articles asserting that the vaccines are not gene therapy and cannot possibly alter human DNA. Each of those “fact checks” rested their conclusion on the fallacy that the mRNA does not enter the cell nucleus, without any acknowledgment of reverse transcription.

PolitiFact also failed to inform readers that the technology used in the COVID-19 vaccines did in fact arise out of years of prior research into the application of mRNA technology for gene therapy.^[92]

As of this writing, neither *PolitiFact* nor any other “fact checkers” falsely claiming that the mRNA and spike protein last for at most a few days in the body have issued retractions or otherwise acknowledged and corrected their misinformation. They continue to this day to lie to the public.

Lead Stories’ “Fact Check”

On October 15, 2021, *Lead Stories*, another partner of the Poynter Institute’s in its “fact checking” industry, following the example set by the CDC, repeated the non sequitur that since the mRNA from COVID-19 vaccines “does not enter the nucleus of human cells”, it is impossible for the vaccines to alter human DNA.^[93]

Case closed, as far as this faux “fact checker” was concerned.

Johns Hopkins’ “Myths” versus “Facts” and Gene Therapy



Johns Hopkins Hospital (Photo by [Baltimore Heritage](#), Public Domain)

Preaching official dogma, an [article](#) from Johns Hopkins Medicine last updated on March 10, 2022, proclaimed it a “MYTH” that “The COVID-19 vaccine enters your cells and changes your DNA”, thus asserting as a proven fact that this cannot happen. To support that assertion, the institution repeated the familiar argument that the mRNA never enters the cell nucleus and “quickly breaks down—without affecting your DNA.”

Right below that, the article proclaimed it a “MYTH” that “The messenger RNA technology used to make the COVID-19 vaccine is brand new.” It is a “FACT”, the institution stated, that “The mRNA technology behind the new coronavirus vaccines has been in development for almost two decades.”^[94]

The healthcare provider declined to point out that the mRNA technology going back two decades was the result of research into *gene therapies*. The application of this *gene therapy* technology for *vaccines* is, of course, new.

Ironically, the Johns Hopkins Bloomberg School of Public Health had published an [article](#) on January 15, 2021, titled “*The New Technology Behind COVID-19 RNA Vaccines and What This Means for Future Outbreaks*”.^[95] (Emphasis added.)

Evidently, the folks at the hospital need to “fact check” their colleagues in academia—or vice versa.

Are mRNA COVID-19 Vaccines “Gene Therapy”?



(DNA image courtesy of [PublicDomainPictures.net](https://www.PublicDomainPictures.net), public domain)

As we've already seen, the argument that mRNA COVID-19 vaccines are not a type of gene therapy rests on the premise that they are not intended to alter DNA and, moreover, that it is biologically impossible for them to do so. This overlooks how the use of mRNA technology has long been developed for the application of "gene therapy", which does *not* necessarily aim to permanently alter DNA.

To illustrate, a 2007 [paper](#) in the journal *Gene Therapy* described how mRNA technology had "potential as a gene therapy vehicle" that was an alternative to DNA-based gene therapies aimed at permanently altering DNA.[96]

As noted in a 2010 [paper](#) in the journal *Cell Stem Cell*, mRNA had the potential "to effect cellular reprogramming" *without* modifying the genome like DNA-based therapies. The paper observed that "the use of RNA transfection to express cancer or pathogen antigens for immunotherapy is already an active research area", referencing a 2006 [paper](#) in the journal *Human Gene Therapy* titled "Synthetic messenger RNA as a tool for gene therapy".[97]

An article in *Nature* in 2015 [reported](#) how the "little-known biotechnology company Moderna Therapeutics" had been successful in obtaining over \$1 billion in financing from investors, "making it the most highly valued venture-backed private company in drug development today." The article remarked that "Investors are clearly attracted to Moderna's technology, which aims to use chemically modified messenger RNA (mRNA) molecules to produce any protein that the body might need."

Moderna, the article explained, *was in the business of gene therapy*:

On paper, the idea of mRNA therapy seems simple. If someone cannot produce enough of a certain protein, or produces a broken version, doctors could inject their cells with mRNA that codes for a replacement protein. This would avoid the risks of tinkering with the genome permanently, as is done in some forms of gene therapy.[98]

The authors of an article in the journal *Molecular Therapy* in 2015 remarked that mRNA was “emerging as a new class of drug that has the potential to play a role in gene therapy that once was envisioned for DNA.” The title of the commentary was “mRNA: Fulfilling the Promise of Gene Therapy”.[99]

As already noted, the American Society of Gene and Cell Therapy optimistically described the mRNA COVID-19 vaccines as a viable “gene therapy” strategy.[100]

A letter published in *Genes & immunity* on June 2, 2021, with mass vaccination campaigns having been underway for several months, included these illuminating comments about the origins and use of the mRNA technology used in COVID-19 vaccines (emphasis added):

More than three decades of research effort on develop gene therapy solutions for many diseases could not convey many healthcare policymakers, pharmaceutical companies, funding agencies, medicine agencies, and drug administrations to adopt gene therapy avenues as highly potential approaches to transfer the therapeutic strategies into a new era. **However, these mRNA vaccines**, which have been developed and approved [*sic*; they were authorized for emergency use, a status for FDA *unapproved* products] within a few months, **signify a breakthrough in the field of gene therapy**, which has battled to achieve ordinary acknowledgment due to a large number of sceptical and conservative scientists and other claimed safety and translational concerns.

. . . This unprecedented achievement will also stress the crucial solutions that gene therapy may provide for many diseases. In the coming future, we expect to see a considerable effort for developing mRNA-based treatments for a wide range of diseases, e.g., hereditary disorders, type 1 Diabetes Mellitus, cancer, and HIV. . . .

This is a great opportunity for the FDA and EMA [European Medicines Agency] to revise the drug development pipeline to make it more flexible and less time-consuming.[101]

That letter echoed a concern expressed by Moderna in its SEC filing. Noting again that its developmental mRNA products were “classified as gene therapies by the FDA and the EMA [European Medicines Agency]”, Moderna further disclosed its financial concern that “the association of our investigational medicines with gene therapies could result in increased regulatory burdens, impair the reputation of our investigational medicines, or negatively impact our platform or our business.”[102]

“the association of our investigational medicines with gene therapies could result in increased regulatory burdens, impair the reputation of our investigational medicines, or negatively impact our platform or our business.”

In other words, there was a risk that regulatory classification and public perception of Moderna’s mRNA products as “gene therapies” would delay licensure and stifle market demand, thus threatening the company’s financial bottom line.

Moderna and Pfizer surely cannot have been disappointed to see how the media’s “fact checkers” all rushed to proclaim that the scientists *knew* with *absolute certainty* that it is biologically impossible for the mRNA from COVID-19 vaccines to alter human DNA.

These pharmaceutical companies surely cannot have been upset to see the chorus of proclamations that it is “false” to say that these mRNA products are a “gene therapy” technology while self-contradictorily reassuring during the rush to market under “Operation Warp Speed” that the technology behind these products was *not new*—an allusion to the years of prior research into the application of mRNA technology *for gene therapy*.

Vaccine mRNA Can Be Reverse Transcribed into DNA

As mentioned, a study was published earlier this year that demonstrated *in vitro* that mRNA from Pfizer’s COVID-19 vaccine could be reverse transcribed into DNA in a human liver cell line.

Previously, a team of researchers from the Massachusetts Institute of Technology (MIT) had published evidence that SARS-CoV-2 itself could integrate some of its own genetic material into human chromosomes. Their findings generated controversy due to the implications for mRNA COVID-19 vaccines.

As reported by *Science*, critics accused the MIT team of “stoking unfounded fears that COVID-19 vaccines based on messenger RNA (mRNA) might somehow alter human DNA.”

One leading member of the MIT team described their findings as “unambiguous evidence that coronavirus sequences can integrate into the genome”. As paraphrased by *Science*, the study authors contended that “on rare occasions an enzyme in human cells may copy the viral sequences into DNA and slip them into our chromosomes. The enzyme, reverse transcriptase, is encoded by LINE-1 elements, sequences that litter 17% of the human genome and represent artifacts of ancient infections by retroviruses.”

In a study published on the preprint server *bioRxiv* on December 13, 2020, *Science* explained, the team “presented test tube evidence that when human cells spiked with extra LINE-1 elements were infected with the coronavirus, DNA versions of SARS-CoV-2’s sequences nestled into the cell’s chromosomes.”

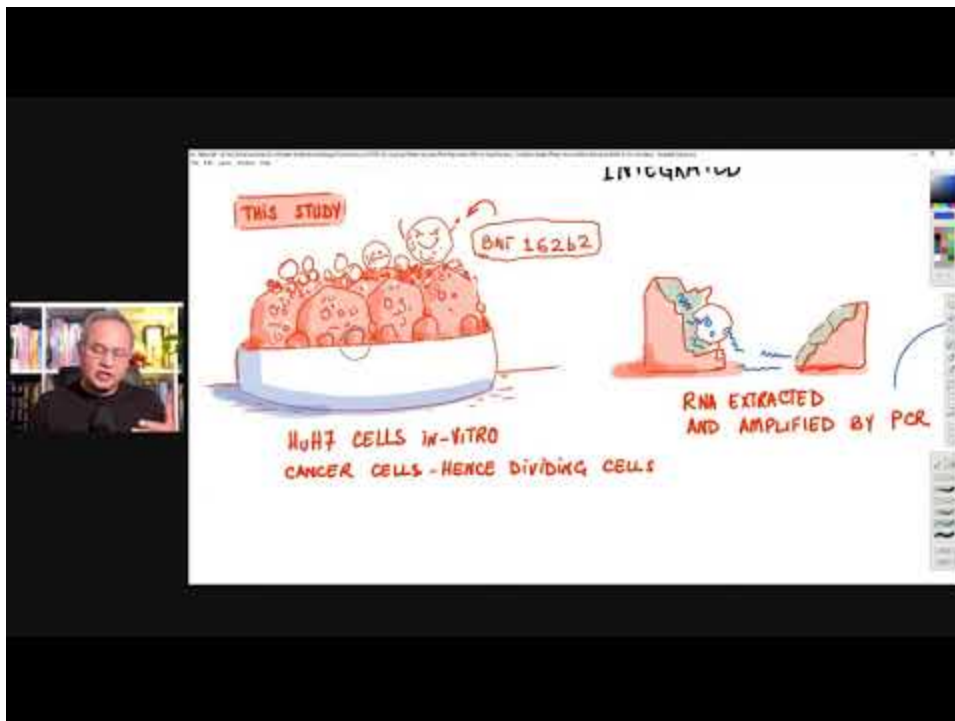
Other scientists argued that the preprint study's findings did not prove that this had actually occurred. The MIT team acknowledged legitimate criticisms and produced a second paper, which was peer-reviewed and published in the *Proceedings of the National Academy of Sciences* (PNAS) on May 6, 2021.

Critics found the newly published evidence more convincing but still not conclusive.[103]

The study in *Current Issues in Molecular Biology* in February 2022 noted how that earlier research raised the question of whether mRNA from COVID-19 vaccines could be reverse transcribed into DNA in human cells.[104]

To test the hypothesis that it could, they used a human liver cancer cell line called “Huh7”, which is derived from the tumor of a Japanese man in 1982.[105] They observed that once inside the cells, the vaccine mRNA significantly increased gene expression of LINE-1 compared to control cells. They further showed that the mRNA “can be reverse transcribed to DNA in liver cell line Huh7”, which they noted raised the concern about whether vaccine mRNA might be integrated into the host genome.

If you would like to learn more about this study and its findings, I highly recommend this very enlightening video by Dr. Mobeen Syed:[106]



Watch Video At: <https://youtu.be/MjxlvdudYJyc>

As already noted, the findings of this lab study do not prove that the vaccine mRNA is reverse transcribed into DNA in the living body. Nor did the study show *in vitro* that the DNA reverse transcribed from vaccine mRNA was incorporated into the DNA of the Huh7 cell line.

However, what this study clearly demonstrates is that the arguments that we have been bombarded with from the “public health” establishment and mainstream media “fact checkers” are wrong.

Conclusion

It would be superfluous to cite additional examples of how the public has repeatedly been told by “public health” authorities and mainstream media that it is impossible for mRNA COVID-19 vaccines to alter human DNA on the grounds that the mRNA cannot enter the cell nucleus.

It is not my aim to belabor that point but to document how the “fact checkers” were unwaveringly consistent in their conclusion that scientists *know with absolute certainty* that the mRNA COVID-19 vaccines cannot alter DNA. This is the public messaging that we have been bombarded with since even before the vaccines were first authorized for emergency use. What I wish to highlight with each of these examples is how *the reasoning* used to arrive at the stated conclusion *consisted of factual and logical errors*.

First, the argument that the mRNA from the vaccines does not enter the cell nucleus ignores the known phenomenon of reverse transcription whereby mRNA is converted into DNA, which can then in turn potentially enter the cell nucleus.

In the relatively rare instances where this biological mechanism has been acknowledged by the “public health” establishment and mainstream media, the claim is made that reverse transcription cannot possibly occur with the vaccine mRNA since it does not encode the reverse transcriptase enzyme. This is also a non sequitur fallacy since the body creates its own reverse transcriptase, as highlighted by the study showing *in vitro* that the mRNA was reverse transcribed into DNA.

Coupled with those arguments has been the claim that the mRNA from the vaccines is rapidly broken down within *just a few days*, which has also been falsified by scientific research showing the persistence of mRNA at a time point of sixty days post-vaccination.

The accompanying claim that the vaccine-induced spike protein is also rapidly eliminated from the body has also been falsified, with research showing that it can persist for *months*. It has further been demonstrated that the SARS-CoV-2 spike protein by itself is not “harmless”, as claimed by the CDC and the faithful news media.

The media have self-contradictorily proclaimed that the mRNA COVID-19 vaccines are *not gene therapy* while also assuring the public that the mRNA technology used to develop these vaccines is *not new*, which alludes to the years of research into developing mRNA technology specifically for the purpose of “gene therapy”.

Another notable feature of numerous supposed fact-check articles is how they cite sources either that do not support or that directly contradict the claim for which it is cited.

Another reason I have provided so many examples of supposed “fact checks” is to illuminate another point, which is how the sheer number of these types of articles provides the illusion of independent efforts, when in fact numerous of the “fact checkers” are connected to the Gates-funded Poynter Institute.

Apart from that, there has been a tendency for each subsequent “fact check” to rely on prior “fact checks” to support their conclusions. This again contributes to the illusion that all of these sources are independently arriving at the same conclusion when in reality that conclusion is *faith-based*, with the respective authors *mistakenly* trusting that the sources they cite have done their due diligence and produced factually accurate and logically valid arguments.

When they aren’t recycling each other’s material, there has been an additional tendency for “fact checkers” to support their assertions by citing sources with disclosed *or undisclosed* conflicts of interest arising from their ties to the pharmaceutical industry.

Of course, in arriving at the desired conclusion by means of false premises and logical fallacies, every one of these “fact check” articles was simply following the example set by the CDC.

If the “public health” and mainstream media establishments were honest with the public, they would have explained from the start how *scientists do not know* whether the mRNA from COVID-19 vaccines could be incorporated into human DNA *because studies were never done to test that hypothesis*. Instead, the public was blatantly lied to over and over again in furtherance of the policy aim of achieving high uptake of the mRNA COVID-19 vaccines.

What we have witnessed instead is the demonstrable untrustworthiness of the “public health” and mainstream media establishments, which should come as no surprise given the interconnecting webs of conflicting interests between the government, the pharmaceutical industry, private institutions like the Gates Foundation, and the mainstream media’s hoax “fact check” industry.

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