

# Negative Evidence: COVID-19 Vaccines and Neurological Disorders

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## Introduction

Since the introduction of COVID-19 vaccines, which occurred in the dramatic setting of the COVID-19 pandemic, serious societal concerns have emerged about their potential side effects. Such concerns are understandable because of the speed of developing those vaccines, the rushed safety testing and hurried approval process, and their brutal implementation by draconian mandates—all unprecedented. Typically, market introduction of new vaccines takes many years for concept development, designing and fine-tuning of mass-production, safety testing, and navigating the lengthy FDA approval process. Yet, the brand new COVID-vaccine technology was somehow developed in less than a year, and the product was approved instantly through the pandemic related Emergency Use Authorization (EUA) exception. From the onset of their development, those vaccines were deemed to be “safe and effective” by the politically biased medical establishment. And ultimately they were forced upon the society by mostly (but not exclusively) left-wing politicians.<sup>1-3</sup>

All those irregular COVID-19 vaccine-related developments, which were and are virtually too good to be true, followed the series of equally extraordinary and astonishing “Pandemic Emergency Policies,” such as total lockdowns, stay-at-home orders, mandatory mask policies, social-distancing measures, travel bans, quarantine rules, mass testing, and contact-tracing recommendations. Memories of those nightmarish measures are fading fast here in 2023, but they were a part of everyday life during the time COVID-19 vaccines roll-outs and they were shaping the public perception of the COVID-19 vaccination program. Both the initial heavy-handed responses to the COVID-19 pandemic and the alleged “miraculous” deliverance from it by the vaccine were occurring in the setting of severe political polarization of society, politicization of medicine, and power asymmetry between Left and Right partisans.<sup>4-6</sup>

The American public became increasingly polarized along the line separating two main ideological mindsets.<sup>4,6,7</sup> Differences between Right and Left became so deep that believers became no longer members of the same nation, who disagree on policy matters, but two adversarial blocs living inside their own hermetic information bubbles. The two ideological camps had remarkably different opinions regarding the origin of the COVID-19 pandemic and the proper ways of handling it.<sup>6</sup> Consequently, two contradictory narratives and associated attitudes toward COVID-19 vaccines have been formed along the ideological lines.<sup>6</sup>

The left-wing narrative propounds that novel COVID-19 vaccines are “safe and effective,” and any concerns about their safety are unfounded and lead to “dangerous vaccine hesitancy.” According to the left-wing leaders, those notions are “based upon science.” However, a careful examination of those claims reveals that they are not founded upon the results of robust

objective research. Instead, they are simply the opinions of left-wing-aligned academic scientists.

Unfortunately, the left-wing camp has full control not only over academia (the traditional source of expertise) but also over the mighty governmental agencies, such as the Centers for Disease Control and Prevention (CDC) and Food and Drug Administration (FDA), and the legacy press (the traditional method of delivering information). Therefore, its pro-vaccine dogma has been proclaimed to be the default national standard, and anything deviating from it to be “dangerous misinformation.”<sup>8,9</sup> The majority of people who subscribe to left-wing ideology accepted uncritically their party’s official narrative. They did not question the safety of COVID-19 vaccines despite the emergence of evidence of numerous perils.

The majority of the members of the right-wing bloc refused to believe in the Left’s contrived pro-vaccine narrative. They were skeptical about safety of the COVID-19 vaccines from the beginning, and the initial skepticism was augmented when serious adverse effects became so evident that their full concealment by the left-wing propaganda machine was no longer possible.

The right-wing camp has clearly chosen to champion a just and benevolent cause, resisting the dictates of its powerful left-wing adversaries. Nonetheless, during this asymmetric warfare, the right-wing bloc has stumbled on several occasions. Insufficient attention has been paid to internal quality assurance and vetting processes. This resulted in the proliferation of patently false but popular claims.<sup>10,11</sup> Naturally, replacement of false left-wing dogma by equally wrong right-wing mythology is not a desired outcome. Many such myths can be easily debunked by left-wing academic experts, who by doing so can effectively undermine the credibility of the whole vaccine-skeptical movement. Many prominent right-wing activists have unfortunately fallen into the audience-capture trap.<sup>10-12</sup> Finally, the laudable efforts of the medical freedom movement have been undermined by the recent infighting between its members.<sup>11</sup> All those developments are distressing to those who root for the success of truth, justice, and freedom; however, it is not too late to correct these errors.<sup>11</sup>

It is imperative to remember that stakes in this continuing dispute about the safety of COVID-19 vaccines are enormously high, since the key issue is preservation of human life and health, not proving which ideology is “superior.” And the lives and health of millions of people can be preserved only if the objective truth about harmful effects of COVID-19 vaccines is officially acknowledged, and acted upon by the powerful leaders who are in charge of health policies. So far those leaders have been acting in accordance with left-wing dogmas, although their initial hardline approach has been clearly softened in the face of the stronger-than-expected public resistance.

The hard-line pandemic policies are becoming distant memories. Few still remember the chilling vows of the left-wing

zealots who asserted that the world would never go back to the pre-COVID-19 state, and that the “never ending pandemic new normal” will become the unavoidable reality for the foreseeable future. This did not happen. No “hard reset” took place, and most things in general did in fact return back to the pre-COVID “old normal.” This is a very encouraging development, but the resulting optimism has to be curbed because the serious perils of the COVID-19 vaccines are still present and they can get worse. The enemies of freedom and humanity have not been decisively defeated. They simply decided to modify their strategy after its original version has failed to deliver the results they expected. Therefore, complacency with the current status quo is unacceptable. Efforts to fully expose the dangers of COVID-19 vaccines must continue with increased impetus.

The concept of “negative evidence” editorials developed when, after the forced COVID-19 vaccine rollouts, numerous anecdotal reports of their harm started to appear in social media in contradiction to the official “safe and effective” mantra. Those reports have been criticized as “misinformation” by medical officialdom. But, counter-intuitively, no expected sincere research efforts were made to dispel this alleged disinformation.

Scientific and criminal investigators describe the situation in which there is an unexpected absence of either data or actions that by all logical means should be present as “**negative evidence**.”<sup>13-17</sup> Discovery of negative evidence is very valuable for any fact-finding process, since it typically demonstrates that a conscious effort was made to cover up the truth that could be troublesome to the perpetrators of the nefarious acts. Negative evidence tends to be overlooked since most investigators tend to reflexively focus on examining things that are present rather than on searching for things that should be there but are not.

### Significance of Neurological Complications of All Vaccines

Despite their favorable views on vaccination, mainstream academic neuroscientists have been acknowledging for many years that virtually all vaccines carry a substantial risk of causing neurological complications.<sup>18-23</sup> This unexpected trend of medical officialdom being candid about the clear link between all vaccines (including COVID-19) and neurological side effects continued even after the heated COVID-19 vaccine controversy started to dominate public discourse. In contrast to their cardiology, oncology, hematology, and gynecology colleagues, who had a tendency to vigorously deny existence of any serious complications related to COVID-19 or any other vaccine, officialdom’s neurologists were not in denial about such risks.

Several old as well as recent reviews written by mainstream academic neurologists confirm the existence of serious neurological complications caused by “*all sorts of vaccines including the COVID-19 vaccines.*” Acknowledged proven complications include Guillain-Barré syndrome, aseptic meningitis, acute disseminated encephalomyelitis, transverse myelitis, macrophagic myofasciitis, and myositis.<sup>18,20,22,24</sup> The same authors also point out that even a common vaccine considered to be exceptionally safe, such as influenza vaccine, has been found to induce narcolepsy in young patients.<sup>18</sup>

However, this unanticipated honesty of officialdom’s neurologists appears to be forced by circumstances, rather than being reflective of their sincere vaccine skepticism. Namely,

the existence of the neurological complications of vaccines is simply impossible to deny, since from the time of introduction of vaccinations as public health measures the medical literature became saturated with numerous case reports and series of neurological disorders that have been clearly attributed to vaccines.<sup>22</sup> Also, most common neurological complications of vaccines before the COVID-19 era were reported to be mild, self-limiting, or amenable to known treatments.<sup>22</sup> The devastating neurological complications that have been accepted by officialdom as proven side effects of vaccination were considered to be exceedingly rare. In such settings it is understandable that pro-vaccine academic neurologists could conclude that a much more effective strategy to promote vaccination would be to not deny the existence of neurologic complications, but to minimize their significance. That way, the risk/benefit ratio could be deceptively moved in a way that would favor massive use of vaccines.

When some brave researchers dared to present the data indicating that relatively common neurological conditions such as autism can be also caused by vaccinations, academic neurologists immediately dropped their insincere façade of “candor” and turned themselves into staunch denialists.<sup>25</sup>

Nevertheless, the tone of many recent and past publications by academic neurologists dealing with the neurological complications of vaccines appears to be more conciliatory, and to contain confirmation of the undeniable fact that all vaccines may induce a vast array of neurological adverse effects.<sup>22,26</sup> Some overly enthusiastic vaccine skeptics occasionally post such papers—without carefully reviewing their content, claiming that those mainstream research articles represent the long-awaited breakthrough and change of heart by the medical establishment about vaccine safety. However, it is not so. Those academic authors simply promote the pro-vaccine agenda in more subtle way than the rest of the medical officialdom. Their narratives are carefully crafted to manipulate the lay public and to placate the vaccine skeptics, rather than agreeing with them.

### Challenges of Recognizing Neurological Complications of New Vaccines

While the neurological complications of established vaccines are well described in the medical literature, the prompt and accurate recognition of the neurological adverse effects of any new vaccine is extremely challenging. This diagnostic difficulty is caused by the very complex and peculiar nature of neurological disorders, as well as by the ways in which vaccines are manufactured.<sup>22</sup>

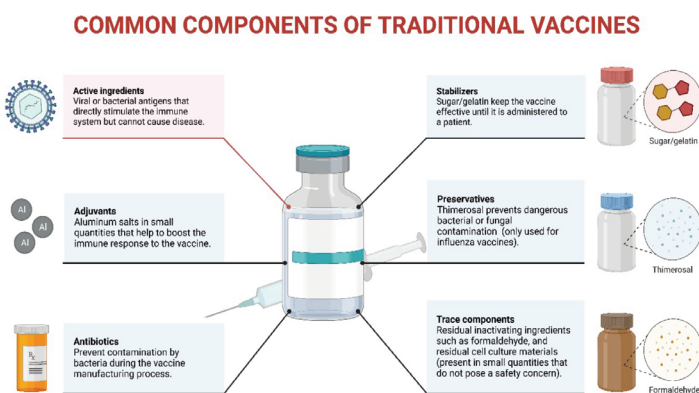
The term “neurological disorders” covers a very large set of heterogeneous, complex pathologies that are extremely diverse in terms of their etiologies, pathomechanisms, and presentations. Etiologies of many of those conditions are still not fully understood. Moreover, some recent etiological theories believed for a long time to be true are proven to be false. For instance, the leading theory of Alzheimer disease has been found to be fabricated and based upon fraudulent research.<sup>27</sup> This etiological diversity and gaps in our knowledge about the primary causes of many of those disorders interfere with our ability to predict whether the components of the novel vaccines or their mechanism of action could either trigger a new neurological disorder or accelerate existing ones.

Neurological disorders affect the brain, spinal cord,

peripheral nerves, and muscles by numerous pathomechanisms, causing many types of anatomical damage. Those processes can result in a wide variety of physiological dysfunctions that can be barely noticeable or result in severe disability and death. The initial presentation of many neurological disorders may be very nonspecific and mild, and therefore can be easily overlooked. More specific and severe symptoms and signs of neurological disorders can develop slowly over time, long after the vaccine has been administered. Finally, the diagnosis of some neurological complications may require specialized testing such as cerebrospinal fluid analysis, electroencephalography, brain imaging, etc., that may not be easily available in some communities.

New vaccines may be manufactured in a variety of ways.<sup>22</sup> Even those based upon old proven technologies can contain a variety of components (such as adjuvants, antibiotics, stabilizers, preservatives, or accidental contaminants) that can trigger neurological disorders (see Figure 1). Most importantly, some components of new vaccine types can be proprietary. Proprietary compounds are legally protected and therefore it is impossible for anyone except the vaccine's manufacturer to study their effects on the nervous system.

All the above factors may result in a situation in which any new vaccine may be a **potential ticking time bomb** rather than a "miraculous preventive measure."



**Figure 1.** Common Components of Traditional Vaccines That Can Potentially Trigger Neurological Disorders

### The Unprecedented Neurological Perils Posed by the Novel COVID-19 Vaccines

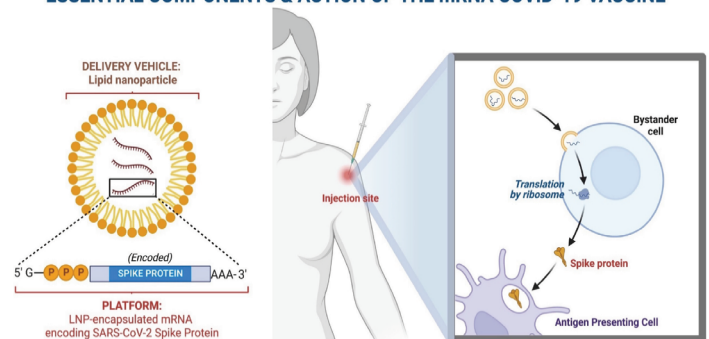
In view of the above discussion, the rushed introduction of brand new vaccines based upon genetic technology never used before appears to be especially reckless. Novel COVID-19 vaccines introduced numerous neurological perils in addition to the previously mentioned serious problems associated with the rushed introduction of new vaccines.

The disgraceful case of the Janssen COVID-19 adenovirus vector vaccine, which is currently banned in the U.S., is both terrifying and instructive.<sup>28-32</sup> This is a monovalent vaccine composed of a recombinant, replication-incompetent adenovirus vector, constructed to encode the SARS-CoV-2 virus spike (S) protein.<sup>32</sup> It was initially heralded as the "simple" (one shot only), "safe" and "effective" COVID-19 vaccine that was supposed to constitute a formidable alternative to the mRNA

vaccines.<sup>29</sup> Yet, the hype surrounding this vaccine was short-lived. Its EUA was promptly revoked, mainly because of the disturbing reports of a serious hematological adverse effect in the form of thrombosis with thrombocytopenia syndrome (TTS). However, while mainstream media reports were focused on coagulation problems associated with this vaccine, there were also even more disturbing reports of extremely severe neurological complications that were glossed over by mainstream media.<sup>31,33</sup> Namely, its manufacturer admitted that there were numerous episodes of severe cases of Guillain-Barré syndrome.<sup>33</sup> Moreover, van Kammen et al. reported that in their cohort of patients with cerebral venous sinus thrombosis (CVST), a distinct clinical profile and high mortality rate was observed in patients who received Janssen's vaccine.<sup>28</sup>

Since this Janssen vaccine has been removed from the market, attention has shifted to the potential neurotoxicity of the most commonly used mRNA vaccines (see **Figure 2**). Those vaccines contain two types of distinctly novel components: the delivery vehicle consisting of lipid nanoparticles (LNPs) and the genetic platform of mRNA that encodes the SARS-CoV-2 spike protein.

### ESSENTIAL COMPONENTS & ACTION OF THE mRNA COVID-19 VACCINE



**Figure 2.** Essential Components and Action of the Novel mRNA COVID-19 Vaccine

The LNPs in the delivery vehicle for the mRNA platform in the COVID-19 vaccines currently administered in the U.S. have been shown to cause a variety of neurological side effects. Namely:

- LNPs may induce inflammation and immune responses in the brain and spinal cord, which could worsen the symptoms of pre-existing neurological disorders or cause new neurological disorders.<sup>34</sup>
- LNPs may also cause direct toxicity to the neurons or glial cells in the CNS, which could impair their function or viability.<sup>35</sup>
- Finally, LNPs may interfere with the normal signaling or metabolism of the CNS, which could negatively affect its homeostasis or regulation.<sup>36</sup>

Therefore, it is likely that at least some neurological disorders that are reported following the administration of COVID-19 mRNA vaccines can be caused by its LPN component.

The role of either mRNA itself, or the spike protein encoded by it, in neurological complications of COVID-19 vaccines remains unclear. Some authors have *postulated*, using the knowledge about the properties of spike protein in COVID-19 disease, that mRNA vaccines could cause excessive production



of the spike protein throughout the body, and not only as it is intended in the injection site.<sup>37-39</sup>

This effect could ultimately result in circulation of the spike protein in the blood, with the potential for breaching the blood-brain barrier and perhaps even for the expression of the spike protein in the brain.<sup>37,38</sup> That could trigger inflammation, oxidative stress, and accelerated apoptosis within the nervous system, resulting in a wide variety of neurological dysfunctions analogous to the damage seen in the COVID-19 syndrome. This hypothesis is coherent and plausible. Unfortunately, it remains a theory-driven deductive proposal that has not been verified by reproducible empirical studies. This is because academic researchers who could conduct such studies are not interested in performing them, and dissident scientists do not have resources to conduct them.

Another theoretical concern that has been raised by vaccine-skeptical researchers is the possibility of prion-like behavior by the spike protein that could result in neuropathologies resembling prion disease.<sup>38,40</sup> Prion disease is a rare and fatal condition caused by misfolded proteins that accumulate in the brain and induce other proteins to misfold. This hypothesis sounds plausible as well, but spike protein is not a known prion protein, and there is as yet no very convincing data to suggest that it can adopt a prion-like conformation or propagate in a prion-like manner, either during COVID-19 syndrome or in the setting of COVID-19 vaccination. Again, the needed mechanistic studies are missing.

In summary, all the above proposals, while sounding very attractive to vaccine skeptics, are so far purely conjectural. Proving or disproving them definitively would require performance of complex mechanistic basic and clinical studies that could only be done in resource-rich academic settings. Hence the only evidence we have here is negative evidence, as previously defined.

### Potential Pathomechanisms of Neurological Side Effects of COVID-19 Vaccines

Many additional putative pathogenic mechanisms have been proposed to explain why the COVID-19 vaccines are associated with the observed neurological manifestations. Here is a brief summary of some of the most relevant theories:<sup>24</sup>

- **Molecular mimicry:** The vaccine may trigger an immune response that attacks the body's own nervous system, an effect called auto-immuno-aggression.<sup>18,41</sup>
- **Aberrant immune reactions:** The vaccine may trigger an abnormal immune response that is different from the classic auto-immuno-aggression of molecular mimicry, but still can cause substantial damage to the nervous system.<sup>18,42</sup>
- **Suppression of Immune Response:** While the excessive immune reactions are obviously harmful, an abnormally low immune response to invasive microorganisms such as bacteria, viruses, or parasites will also produce negative outcomes. Some researchers suggested that COVID-19 vaccine may cause such a harmful suppression of natural immune responses, making the nervous system vulnerable to a variety of infections.<sup>24</sup>
- **Allergic Reaction:** Naturally, any therapeutic agent can cause an allergic reaction in susceptible individuals. Hence, it has been theorized that certain components of COVID-19 vaccines may trigger the standard allergic process in certain

individuals. As in any other circumstances, allergic response may be mild and limited, or cause acute life-threatening anaphylaxis, but it could also trigger a latent, smoldering destructive process affecting the nervous system in the long term. Theorists claim that cases described in the literature of mast cell activation by COVID-19 vaccines, and of the beneficial effects of antihistamines that have been administered to such patients, support their theory that SARS-CoV-2 vaccines may elicit an allergic response.<sup>24,43</sup>

- **Direct neurotoxicity:** The vaccine components may damage the nerves directly by a variety of known or as yet unknown mechanisms.<sup>18,44</sup>
- **S-Protein Generation and ACE-2 Receptors Binding:** This theory suggests that the spike (S) protein generated by the vaccine or its peptide fragments not only activate the immune response but also bind to ACE-2 receptors on various cell types. This can trigger intracellular reactions, mimicking a SARS-CoV-2 infection. The abundance of ACE-2 receptors may exacerbate this effect.<sup>24</sup>
- **Induction of Pro-Inflammatory Response by Nanoparticles:** Because LNPs have been shown to cause neural tissue damage, some scientists have hypothesized that the use of such nanoparticles for mRNA delivery might induce a pro-inflammatory response, leading to neurological side effects.<sup>24</sup>
- **MIS-C/MIS-A (Multisystem Inflammatory Syndrome in Children/Adults):** MIS-C is a rare systemic illness affecting children, similar to Kawasaki disease, characterized by the presence of widespread, multi-organ extreme inflammation. It typically occurs following exposure to SARS-CoV-2 virus. However, it has also been described as a pediatric adverse event to COVID-19 vaccination.<sup>45,46</sup> This syndrome was initially thought to occur only in children; however, a similar presentation in adults has been described and is called "MIS-A". The MIS-C/MIS-A hypothesis of neurological sequelae of COVID-19 vaccinations posits that some case of neurological side effects of COVID-19 vaccines maybe caused by the unrecognized milder variants of this syndrome.<sup>24,47,48</sup>
- **VITT (Vaccine-Induced Thrombotic Thrombocytopenia):** Although typically associated with the use of adenovirus vector vaccines, this condition or its variant can theoretically contribute to certain neurological adverse effects following all types of COVID-19 vaccination.<sup>49</sup>
- **SCLS (Systemic Capillary Leak Syndrome):** SCLS is a rare disorder characterized by episodes of severe hypotension, hypoalbuminemia, and hemoconcentration.<sup>50,51</sup> These episode are caused by the profound derangements of the vascular endothelium leading to the leakage of plasma and proteins into the interstitial compartment.<sup>50,51</sup> Some authors speculated that the pathomechanism similar to the one observed in the SCLS may play a role in neurological side effects of COVID-19 vaccines at least in people who have suboptimal vascular endothelium.<sup>24</sup>

Each of these theories provides a plausible explanation for many of the already reported neurological adverse effects of COVID-19 vaccines. The proposed pathomechanisms may account for a subset of observed adverse neurological reactions to vaccines. It is also possible that multiple mechanisms are at play in different patients. Moreover, many of these hypotheses

suggest that additional types of neurological dysfunction secondary to COVID-19 vaccinations can emerge in the future.

Proving or disproving any of those theories would require performance of carefully designed mechanical experiments and correlation of their findings with reliable clinical data. It is truly staggering to realize that academic officialdom shows no interest whatsoever in performing such vital research.

### Reports on Neurological Side Effects of COVID-19 Vaccination in Medical Literature

Previous “negative evidence” editorials demonstrated the puzzling paucity of case reports and clinical investigations related to public concern about COVID-19 vaccination and vaccination-related antibody-dependent enhancement (VADE),<sup>13</sup> autopsy findings,<sup>14</sup> coagulation disorders,<sup>16</sup> infertility,<sup>15</sup> accelerated development of cancers,<sup>10</sup> and sudden cardiac deaths.<sup>11</sup> The lack of such expected publications arguably constitutes “negative evidence” indicative of the presence of a hidden agenda related to **denying** the existence of inconvenient facts by academic leaders.

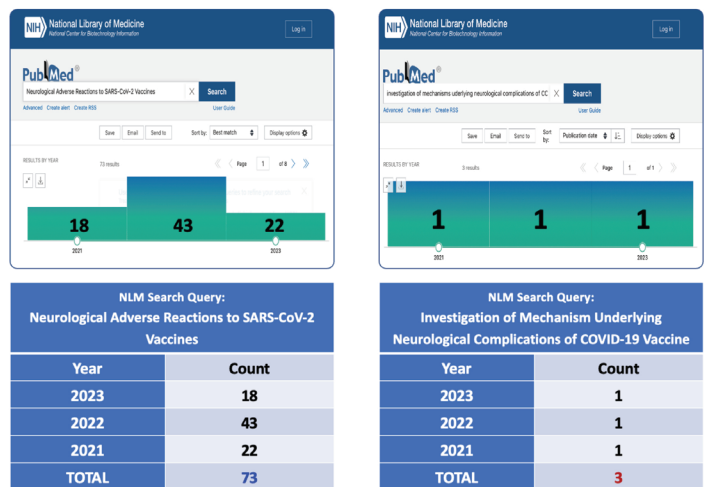
In this instance, it appears that traditionally pro-vaccine academic neurologists used the peculiar strategy of handling the inconvenient worrisome side effects of vaccines by acknowledging them, but minimizing their significance. By doing so they were able to manipulate the risk/benefit ratio of the vaccines in a way that would favor massive vaccination campaigns.

We expected that the same strategy would be followed to promote COVID-19 vaccines, and that academic officialdom would not perform any of the needed mechanistic studies. Both expectations were correct.

**Figure 3** shows the results of a search of the National Library of Medicine Pub-Med database performed on Aug 3, 2023, for the officially indexed professional publications containing reviews of case reports/series of the neurological complications of COVID-19 vaccines, compared with a search for articles dealing with research aimed at examination of mechanisms underlying such adverse reactions. Between 2020 and 2023, 73 review papers were published describing sizable case-series of neurological complications of COVID-19 vaccines. In a striking contrast, during the same period of three years, only three articles containing original research examining the mechanisms responsible for neurological side effects have been published. This discrepancy is simply astonishing.

Thorough review of the publications from those selected sets of articles lead to the following observations: There are at least nine *exceptionally detailed, painstakingly researched and laboriously prepared reviews* of the neurological complications of COVID-19 vaccines that have been published in 2023 and 2022. Those are papers authored by Hosseini,<sup>20</sup> Garg,<sup>18</sup> Finsterer,<sup>24</sup> Oonk,<sup>23</sup> Nath,<sup>22</sup> Yang,<sup>52</sup> Castillo,<sup>53</sup> Eslait-Olaciregui,<sup>54</sup> and Chatterjee.<sup>55</sup> The content, conclusions, and recommendations conveyed by those authors in their reviews are summarized below. Readers who are interested in details of the neurological complications of COVID-19 vaccines should consider reading full texts of those reviews very carefully.

Some vaccine skeptics have singled out an article by Dr. Josef Finsterer, touting it as the long-awaited official admission of guilt regarding neurological side effects of COVID-19 vaccines.<sup>24</sup> Certain activists even intimated that



**Figure 3.** NLM Timeline Tool Results for Reviews of Neurological Adverse Reactions to SARS-CoV-2 Vaccines and for Examination of Mechanism Underlying Such Adverse Reactions

[NLM Timeline Tool was last run on August 3, 2023. National Library of Medicine, Bethesda, Md. Published in accordance with the NLM public copyrights policy.]

Dr. Finsterer may be sympathetic to the cause of vaccine skeptics. While Dr. Finsterer is indeed more critical of current COVID-19 vaccines safety than many of his colleagues, he is hardly a vaccine skeptic. Consider his letter to the editor entitled “There Is an Urgent Need for Safer Anti-SARS-CoV-2 Vaccines.”<sup>26</sup> He writes:

Those who experience severe side effects or even death following an anti-SARS-CoV-2 vaccination, often wish not having ever received the vaccine, whereas those who have lost unvaccinated relatives due to COVID-19 may wish that their lost relatives would have been vaccinated. These divergent needs need to be accomplished, and this may be achieved only through **developing completely new vaccines with higher safety profile than those currently on the market.** There is an urgent need to invent anti-SARS-CoV-2 vaccines without major side effects, **to win the trust of vaccine skeptics** [emphasis added].

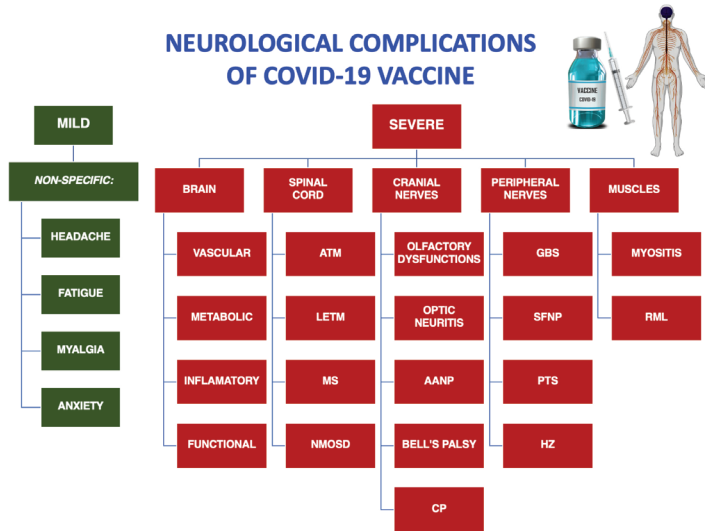
Obviously, Dr. Finsterer wants to woo vaccine skeptics to the side of vaccine enthusiasts. Just as before the COVID-19 era, academic neuroscientists continue to promote the pro-vaccine agenda in a more clever way than their colleagues. They are not arrogant denialists of reality. Instead of being overtly hostile, they use half-truths to placate the vaccine skeptics, and to manipulate the general public into abandoning “vaccine hesitancy.”

Indeed, all the articles quoted above conclude that SARS-CoV-2 vaccines are generally **safe and effective**, but they may **rarely** cause neurological adverse reactions. However, according to these authors, reactions are in general mild and transient. Serious or even fatal neurological reactions can occur only rarely. Therefore, these authors recommend not to stop vaccinations but to monitor, treat, and report these neurological adverse effects and to identify the risk factors and mechanisms that may trigger them. The authors also suggested that future research should explore the long-term outcomes

and the *potential benefits (not harms) of SARS-CoV-2 vaccines for neurological diseases.*

It is very perplexing that conclusions advocating vaccination follow very detailed descriptions of horrors and damages that neurological complications of the vaccines can cause to the vaccinated patient. The following is a cumulative summary of the contents of those reviews dealing with the description of the COVID-19 vaccine-related neurological complications.

While describing the neurological complications of COVID-19 vaccines most authors use the simple classification that emphasizes their main point: that mild complications are common, while severe complications are rare. Consequently, they classify the neurological complications into two general categories: mild (and common) and severe (and rare), as visualized in Figure 4.<sup>18</sup>



**Figure 4.** Classification of Neurological Complications of COVID-19 Vaccine

*ATM: acute transverse myelitis; LETM: longitudinally extensive transverse myelitis; MS: multiple sclerosis; NMOSD: neuromyelitis optica spectrum disorders; AANP: acute abducens nerve palsy; CP: cochleopathy, PRES: posterior reversible encephalopathy syndrome; GBS: Guillain-Barré syndrome; SFNP: small fibre neuropathy; PTS: Parsonage Turner syndrome; HZ: herpes zoster; RML: rhabdomyolysis.*

Common and mild neurological complications of COVID-19 vaccines usually occur within 24 hours of vaccination and resolve within a few days. Those include: **Headache** (the most common neurological complication), **Fatigue**, **Dizziness**, **Myalgias**, and **Anxiety**.

Severe and rare neurological complications include:

- **Brain disorders:**
  - cerebrovascular disorders (such as cerebral venous sinus thrombosis, transient ischemic attack, intracerebral hemorrhage, and ischemic stroke),
  - demyelinating disorders (such as acute disseminated encephalomyelitis, transverse myelitis, and first manifestation of multiple sclerosis), and
  - other disorders (such as encephalopathy, delirium, akathisia, seizures, and epilepsy).
- **Spinal cord disorders:** transverse myelitis, first manifestation of multiple sclerosis, and neuromyelitis optica.

- **Cranial and peripheral nerve:** Bell's palsy, Guillain-Barré syndrome, small fiber neuropathy, Parsonage-Turner syndrome, herpes zoster, olfactory dysfunction, hearing loss, tinnitus, dizziness, optic neuritis, and vision loss.

From this group of disorders, the three of special clinical importance are Guillain-Barré syndrome,<sup>56</sup> transverse myelitis, and acute disseminated encephalomyelitis.

Considering the devastating impact on a patient's life, physicians, even academic physicians, need to remember that they treat individual patients, not "populations." Physicians should treat their patients like unique human beings and not replaceable parts of the large "herd." It does not matter how "rare" the devastating complications are. One patient affected by them is one patient too many. Naturally, the abstract "herd" will not even notice that one of its numerous members is severely ill or dead, but the "herd" should not matter more than a single human being.

## Conclusions

While the draconian COVID-19 pandemic policies such as lockdowns, forced masking, and social distancing are largely gone, the victims of those dictates are reminded daily of the loss of their formerly prosperous businesses, the "mysterious" death of relatives and friends soon after receiving the "mandated shot," and the "enigmatic" chronic illnesses that followed the coerced vaccination.

The highly publicized and coercive "lifesaving measures" now look like a ticking time bomb.

There are many unanswered questions about this "black plague" scare of our time. We do not have the luxury to indulge in our own confirmation bias about what really happened. Instead, we have to seek solutions to our current problems that are based on reality, hard facts, objective science, and rigorous logic.

"Negative evidence" about the allegedly "safe and effective" solution must not be ignored; rather, we must keep asking the questions it is designed to cover up, and demand the rigorous investigations needed to answer them.

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