

Negative Evidence: COVID-19 Vaccines and Cancer

Jane M. Orient, M.D.

Introduction

There are very few words in any language that invoke so much fear as the term “cancer.”¹ Perhaps only names describing “war” or “plague” can cause a similar instinctual fright in all humans.

Reasons for this reflexive response are many. Humanity has been *plagued* by cancer since the dawn of history, and humans have been *at war* with this formidable enemy from the time physicians understood what the neoplasia is. Despite all the progress achieved so far, victory in this war remains elusive.²

However, as our understanding of the complex causes of various types of the malignancies was expanding, prophylactic measures to prevent neoplastic diseases were being taken. Governmental agencies and professional medical societies have been claiming for years that the two best strategies for preventing cancers are: 1) elimination of existing carcinogens and 2) prevention of the introduction of new carcinogens into the environment.³⁻⁵ Therefore, the emphasis was placed on the detection of even the slightest carcinogenic properties of chemical compounds found in any product to which humans are frequently exposed, such as cigarettes, foods, and drugs. New therapeutic agents including vaccines were subject to meticulous pre-marketing testing and post-marketing surveillance aimed at searching for their potential carcinogenic properties.

Shockingly, a careless exception from those prudent safety measures has been made for the novel mRNA COVID-19 vaccines. Despite the flood of concerns about the increase of the rate and severity of cancers in vaccinated individuals, no serious investigation into the potential carcinogenicity of this new type of vaccine was initiated by the authorities or mainstream academic medicine.

That counterintuitive lack of logically expected research efforts can be described as the presence of “negative evidence.” As previously discussed, the term “negative evidence” is used to denote the surprising absence of the data or actions that logically should be present in a specific setting.⁶⁻⁹ Discovery of negative evidence provides valuable clues that the essential information is being deliberately obscured to prevent the uncovering of sinister acts or agendas.

The Importance of Cancer

Despite spectacular progress in medical science, cancer remains responsible not only for the majority of all types of deaths, but it is a leading cause of premature deaths worldwide,^{10,11} and thus interferes significantly with efforts to increase human life expectancy.

Data collected by the World Health Organization (WHO) demonstrated that in 2019 cancer was either the first or second

cause of death before the age of 70 in 112 countries.^{10,11} While the mortality rates of previously lethal chronic diseases such as stroke and coronary heart disease have been decreasing, the fatality of cancer continues to increase,¹¹ in spite of an enormous expansion of our understanding of the molecular genetics. This death sentence for many patients is typically accompanied by a prolonged period of agony. Even those patients who ultimately survive their encounter with the malignancy often endure torturous chemotherapy, radiation therapy, and extensive surgeries.

Not surprisingly, surveys show that one-third to one-half of the general population in the U.S. and the UK report that they fear cancer more than any other disease.^{12,13} This deep existential fear of cancer prompted the public to pressure politicians and scientists to develop strategies that would keep the feared malignancies at bay.¹⁴ Numerous legislative initiatives focused on cancer prevention and treatment were passed. One of the most famous was signed by President Richard Nixon: the National Cancer Act of 1971, which informally marked the beginning of the “war on cancer.”^{2,15} Since then, numerous similar initiatives were created on state and federal levels, including the 2016 Obama-Biden Administration “Cancer Moonshot” initiative and its 2022 continuation by the Biden-Harris Administration.¹⁶⁻¹⁸ This political “war on cancer” is still far from being won; however at least initially it resulted in the increased funding of cancer research.

Eliminating Oncogenic Factors

For the duration of the “war on cancer,” the medical establishment has been telling the public that while there are numerous ways of decreasing the morbidity and mortality of cancer (e.g.: screening, novel treatments), one of the most effective ways is prevention of cancer by eliminating oncogenic factors from the environment.^{14, 19-22} Large international organizations such as WHO have been boasting that **30-50%** of all cancer cases are preventable with reduction of exposure to cancer risk factors.²³

It has been long recognized that a wide variety of therapeutic agents including vaccines may have carcinogenic properties due to their own chemical structure or accidental contamination.²⁴⁻²⁸ Hence, the emphasis was put on both retrospective pharmacoepidemiologic studies of drug-cancer associations and on preventing the approval of new therapeutic agents that may have carcinogenic properties.²⁴⁻²⁶ In this spirit, at the beginning of the 21st century the Institute of Medicine has called for the implementation of the nationwide strategy for prevention with regard to the accidental contamination of vaccines with carcinogens.^{26,29} This call was made after concerns that exposure to polio vaccine contaminated with simian virus 40 (SV40) could cause certain types of cancer.^{24-26,29}

The potential carcinogenicity of medications was treated seriously by their manufactures and by regulators. Major pharmaceutical companies such as Pfizer and Merck had voluntarily recalled drugs due to their carcinogenicity.^{30,31} A recent U.S. Food and Drug Administration (FDA) public workshop was dedicated exclusively to the issue of carcinogenicity of pharmaceutical products.³²

State legislators were not far behind their federal counterparts in their cancer prevention efforts. In 1986, California enacted as Proposition 65, which requires all manufacturers and businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer.³³ This groundbreaking law has been cheered by medical officialdom as “the perfect marriage of sound science and public policy.”³⁴ Proposition 65 soon became the model to be implemented by other states.³⁵

The Political Divide on the Link between COVID-19 Vaccines and Cancer

The initiatives described above have been always met with enthusiastic bipartisan support. Fear and loathing of cancer was one of the very few ideas that united the most bitter political enemies. However, when the COVID-19 vaccine entered the market, an unusual change of attitude towards cancer risk occurred (Figure 1).

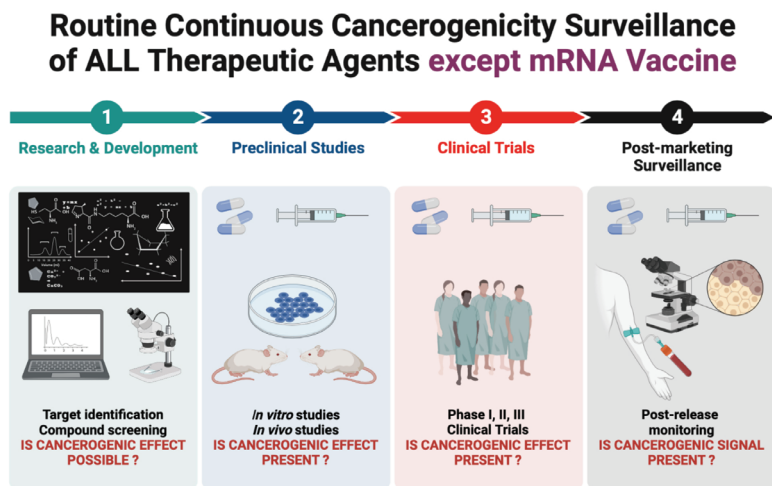


Figure 1. Routine Surveillance of Therapeutic Agents for Carcinogenicity (Carcinogenicity)

For all therapeutic agents except for COVID-19 vaccines, the approval process emphasized pre- and post-marketing surveillance aimed at detection of even the slightest carcinogenic properties of drugs and vaccines. This prudent paradigm was abandoned with introduction of COVID-19 vaccine.

Progressive politicians, regulators, and scientists used to be greatly concerned about cancer. Not only did they launch their own anti-cancer initiatives like the Cancer Moon Shots, but they supported the cancer prevention policies proposed by politicians they profoundly disliked, such as President Richard Nixon.^{2, 15-18} It is shocking that the legitimate concerns about the induction of malignancies by the novel mRNA COVID-19 vaccines have been carelessly dismissed by progressive academicians, administrators, and legislators. Astonishingly,

instead of commencing immediately a thorough investigation into the purported carcinogenicity of the COVID-19 vaccines, academia and governmental agencies launched a vigorous public relations campaign to discredit any reports about links between COVID-19 vaccines and induction of malignant diseases. Mainstream media have been flooded by reassuring statements that COVID-19 vaccines are “safe and effective” and that they cannot cause new cancers nor accelerate existing ones.³⁶⁻⁴⁰ There was no effort to support those nonchalant statements with any persuasive evidence.

Unlike in the past, the Institute of Medicine did not call for any vaccine-related cancer research programs or specifically for the creation of a robust cancer-specific surveillance system. A dedicated registry is essential since the peculiar nature of drug/vaccine-induced cancers hinders the capability of conventional pharmacovigilance databases (e.g., the Vaccine Adverse Event Reporting System, VAERS) to detect associations between therapeutic agents and malignancies.²⁴ The medical establishment is well aware of this fact, yet nothing is being done to fill this need.

In contrast to the progressives’ lack of concern about cancer risk, the vast majority of non-progressive physicians, politicians, and members of the public remain as concerned about it as ever. To the discontent of officialdom, reports of tacit observations linking novel COVID-19 vaccines to increased incidence of cancer keep flooding social media and non-progressive media outlets despite efforts to silence them.⁴¹⁻⁴²

Since academia, controlled by progressives, is refusing to seriously examine those concerns, vaccine-skeptical physicians and scientists have been proposing a variety of hypotheses that would explain the tacitly observed correlation between COVID-19 vaccines and cancer.⁴³⁻⁴⁷ Those proposals are met only with ridicule and scorn from the members of the mighty medical establishment.⁴⁸⁻⁵¹ There is no willingness to engage in respectful debate with those who question the official narrative. Instead, such dissidents are mercilessly mocked and belittled, as epitomized by the infamous paper published in the prestigious *British Medical Journal* titled “Everything Causes Cancer? Beliefs and Attitudes towards Cancer Prevention among Anti-Vaxxers, Flat Earthers, and Reptilian Conspiracists: Online Cross Sectional Survey.”⁵² The clear message to the scientific world was: if you dare to question our official narrative, then you are no better than cranks believing in flat-earth and alien-lizard conspiracies. Only a few mainstream scientists expressed disdain about the disrespectful and arrogant nature of this paper.⁵³ The majority of scientific officialdom applauded that mockery.

Significance and Causes of the Divide

The issue of cancer risk that was previously so relevant and urgent for progressive academicians and regulators—especially in the context of environmental regulations—became suddenly *irrelevant* in the context of side effects of the COVID-19 vaccines. Both laypeople and medical professionals who are not ardent acolytes of the progressive political bloc are bewildered by this abrupt change. Many progressives are also probably confused by this irrational reversal of the old prudent policy. They, like any reasonable people, are afraid of being exposed to the risk of

malignancies. However, they remain silent under peer pressure.

The reasons why former allies in the war on cancer suddenly became enemies are complex, painful, and even frightening. Those causes are also hard to see from the perspective of the majority of people who are busy with prosaic but essential burdens of life in the economic downturn. Nevertheless, a clear understanding of those causes and their implications is of the utmost importance. A large part of humanity is reasonably afraid that it is being recklessly exposed to the risk of the most abhorrent lethal disease. The institutions that were created to prevent such a nightmarish scenario are either foolishly negligent or deviously complicit in the execution of what appears to be a sinister agenda. Terrifying as that logical conclusion may be, there are simply no other, more comforting explanations.

Yet there are many who refuse to accept this uncomfortable truth. This is not surprising. Most humans tend to assume that things are as they were in the past and that institutions created for public protection work as they were designed to work. Unfortunately, things do change, and frequently the transformation to the worse occurs surreptitiously. For example, many otherwise reasonable American colonists deceived themselves that the British Crown was not becoming tyrannical but was merely “misled by corrupt officials.”^{54,55} Similarly today, some naively believe that academia and regulatory agencies remain apolitical and impartial but are somehow blinded to the truth. Therefore, all that is needed for those entities to start protecting the public again is to show them persuasive evidence that COVID-19 vaccines are associated with cancer or to formulate a convincing theory why this is the case. As discussed below, not only are those tasks extremely difficult for independent researchers to accomplish, but much more is required.

The apparent mystery surrounding the unexpected lack of concern about the cancer risk associated with COVID-19 vaccines can be easily solved when one understands its context. It is not an isolated event occurring in a vacuum, but is part of the raging conflict of opinions about the COVID-19 pandemic, occurring in a complex setting characterized by the politicization of medical science, severe political polarization, and power asymmetry.⁵⁶ Indeed, according to Pew Research Center, the U.S. is one of the most divided countries regarding views on the COVID-19 pandemic.⁵⁷

The remarkable divergence of opinions on COVID-19 between the two main ideological blocs resulted in creation of two competing narratives concerning the origin of the novel coronavirus causing COVID-19, its effective treatment, and preventive measures including use of facial masks and novel COVID-19 vaccine.⁵⁸ The progressives’ narrative has an extremely favorable view of the COVID-19 vaccines. And it happens that the vaccine manufacturers are generous donors to progressive causes. This narrative has been proclaimed as the default national standard because the progressive bloc has full control over the powerful governmental agencies controlling vaccine approval and cancer surveillance (FDA and the Centers for Disease Control and Prevention, CDC), academia (the traditional source of expertise on cancer) and the legacy press (the dominant method of delivering information about cancer risks to the public). Despite the substantial power advantage of

the vaccine proponents, the vaccine-skeptical camp consisting mostly of nonprogressives has refused to accept the default narrative of vaccine safety. This is a stalemate—not a victory of vaccine skeptics, but still a considerable and very telling success of common sense over the vested-interest-driven partisan dogma and politicized science.

The progressive members of officialdom keep accusing the vaccine skeptics of incompetence, alarmism, implausibility, and monological reasoning. Yet somehow, the army of allegedly incompetent dilettantes, alarmists, and cranks with modest means keeps successfully resisting the allegedly hyper-competent and powerful brigades of officialdom. Those rag-tag guerrilla forces keep winning in a fashion similar to the unexpected achievements of the Minutemen, and more recently of Yugoslav partisans, Viet Cong, or Taliban fighters, who were able to defy much better equipped and technologically advanced armies. While one may not agree with ideologies of these warriors, their common denominator was that they were defending their homeland from invading forces and refused to surrender despite the unfavorable power asymmetry.

The corruption of medical science by rampant politicization previously discussed in this journal⁶⁻⁹ has been harshly criticized even by the members of the scientific establishment itself. In their paper entitled “Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hyper-competition,”⁵⁹ Edwards and Roy state: ***“If a critical mass of scientists become untrustworthy, a tipping point is possible in which the scientific enterprise itself becomes inherently corrupt and public trust is lost, risking a new dark age with devastating consequences to humanity.”*** This opinion was echoed by Stark and Satelli,⁶⁰ who stated: ***“[W]e think the strongest force pushing science in the wrong direction is existential: science has become a career, rather than a calling, while quality control mechanisms have not kept pace.... Much of what is currently called ‘science’ may be viewed as mechanical application of particular technologies, including statistical calculations, rather than adherence to shared moral norms.”***

The Remedy

It is abundantly clear that the current scientific institutions have been compromised and cannot be trusted. Unfortunately, the few brave but underfunded and underequipped scientific dissidents, while very helpful, cannot replace the generously subsidized, formally structured, and lavishly outfitted apparatus of traditional academia.⁶⁻⁹ The issue of cancer risk is too complex to be tackled by the several lonely scholars whose research tools are limited to the laptop computer and basic laboratory gear. Rather, such dissenting scholars should become the leaders in the reformed de-politicized academia. They should be put in charge of the modern sophisticated laboratories staffed with well-trained post-doctoral fellows, junior scientists, and technicians. They should be given the means to organize cancer-oriented pharmacovigilance registries to collect and analyze the large amount of data related to COVID-19 vaccine-related cancer risks. This is the only way to solve the existential threat that improperly vetted, risky COVID-19 vaccines pose to humanity. This may appear to be an impossible task at present, but history shows that more “improbable” feats have been

achieved by those who were persistent and dedicated to a just cause.

A Systematic Approach to Examining the COVID-19 Vaccine-Cancer Links

In an ideal world, the mRNA COVID-19 products would not have been carelessly rushed from the laboratory bench into mass administrations coerced by the strictly enforced mandates. Its risk-benefit ratio is simply too high. The potentially significant carcinogenicity of this novel vaccine is contributing considerably to its unfavorably low safety index.

However, our imperfect reality is characterized by politicization of science and power asymmetry in favor of the reckless vaccine proponents. The insufficiently tested concoction that is cardiotoxic, prothrombotic, neurotoxic, and likely highly carcinogenic has been introduced repeatedly via numerous boosters into a large part of the population.

The alarming safety signals related to many predictable side effects of these vaccines are reflected in the tacit observations that are flooding social media but are ignored by the mainstream press. The more acute side effects of this experiment, such as myocarditis, hypercoagulability with strokes, heart attacks, and sudden cardiac deaths, are already hard for the overloaded propaganda machine to conceal. The first waves of the incoming tsunami of the more chronic sequelae of induced and accelerated cancers are being reported by a few brave pathologists. In the meantime, medical officialdom, instead of laboring hard to remedy this carnage, is busy issuing scolding denials of things that are becoming undeniable.

As history teaches us, the best advice for tumultuous times is to "Keep Calm and Carry On"⁶¹ But what shall we carry on? The two essential areas on which anyone who wants to tackle the problem of carcinogenicity of vaccines shall concentrate are oncogenomics and pharmacoepidemiology.

Oncogenomics

Oncogenomics, which concerns cancer-associated genes, holds the key to the understanding of the mechanisms by which carcinogens can cause the malignant transformation of benign tissue into a cancer. The politicized medical establishment knows its importance very well and has been misusing its substantial knowledge and control of this scientific domain to deny any plausibility of carcinogenic properties of the novel mRNA vaccines. Therefore, familiarity with principles of oncogenomics is critical for any vaccine skeptic.

Oncogenomics has been expanding rapidly during last decades.⁶² However, its major focus was more on cancer treatment than prevention. The rapid progress in this area ushered in the new therapeutic paradigm of personalized precision oncology, an approach in which a customized treatment can be tailored based upon the identification of molecular abnormalities present in the individual patient's tumor.⁶³⁻⁶⁵

Due to its multilayered complexity, oncogenomics must be approached with humility even by clinical oncologists and general geneticists. Pathologies that we call "cancer" are extremely complex. Their in-depth study requires numerous

years of specialized training and direct research experience, along with sophisticated research systems found only in the leading scientific centers. The well-intentioned vaccine skeptic who is not sufficiently conversant in this branch of genomics may easily make errors in the interpretation of this complex topic, which are subsequently exploited by vaccine proponents.⁶⁶

Nonetheless, physicians can become more than just conversant in the essential concepts of oncogenomics with the proper effort. Those physicians who are oncogenomic novices and would like to study this subject more extensively are encouraged to peruse the following basic textbooks:

- *DeVita, Hellman, and Rosenberg's Cancer Principles And Practice Of Oncology*,⁶⁵
- *Oncogenomics: From Basic Research to Precision Medicine*,⁶³
- *The Basic Science Of Oncology*,⁶⁷
- *Molecular Biology of Cancer: Mechanisms, Targets, and Therapeutics*,⁶⁸
- "Guidelines for Human Gene Nomenclature,"⁶⁹ and
- *Brenner's Encyclopedia of Genetics*.⁷⁰

It seems that the extensive use of hermetic technical jargon by oncogenomic experts is one of the hardest obstacles for clinicians. Here are the oncogenomic concepts most pertinent for our discussion, in order of relevance:

Cancer. The term "cancer" has been defined in the not-so-remote past as the group of distinct diseases that shared the six essential hallmarks described by Weinberg and Hanahan: *neoplastic autonomy, insensitivity to anti-growth signals, evasion of apoptosis, immortality of cells, sustained angiogenesis, and local invasion and distal metastases*⁷¹ (Figure 2).

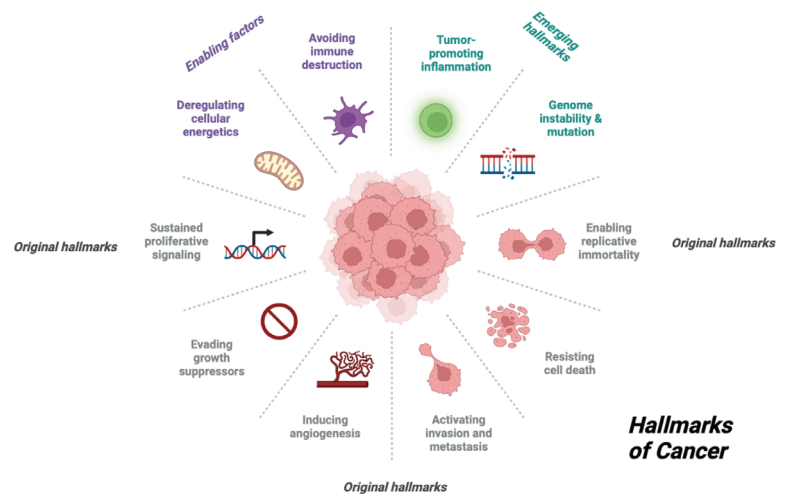


Figure 2. Evolution of the Hallmarks of Cancer

This definition has, however, been revised, and subsequently it was settled that cancer was simply "a genetic disease."^{65,72} This revision was followed by the expansion of that minimalistic approach by specifying that *cancer is a genetic disease caused by accumulation of DNA mutations and epigenetic alterations leading to unrestrained cell proliferation and neoplasm formation*.⁶⁵ The important lesson here is that, as noted by Fouad and Aanel, in a very short time "we have seemingly come full circle: from overwhelming complexity to anticipated simplicity, back again to substantial complexity." How are we

to believe official “experts,” who say their claims regarding the lack of cancer risk associated with COVID-19 vaccines are “unchangeable” and “certain,” when the same “experts” keep changing the very definition of the pathology with which the COVID vaccines are allegedly not associated?

Oncogenes and Tumor Suppressor genes. These are the two main types of cancer genes. **Oncogenes** are genes that promote cell growth and reproduction, and can induce cancer when activated inappropriately (Figure 3). **Tumor suppressor genes** inhibit those processes, keeping cell division in check. A defect of tumor suppressor genes resulting from *loss-of-function mutation* causes their inactivity, inducing in turn the uncontrolled growth of cells leading to cancers (Figure 4).^{65,72}

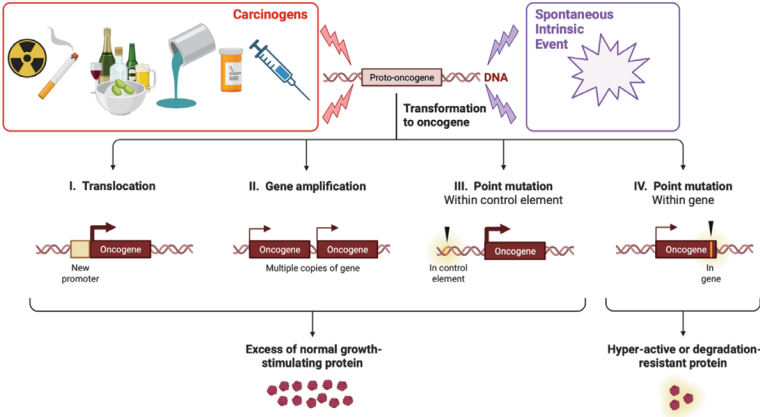


Figure 3. Mechanisms of Activations of Oncogenes

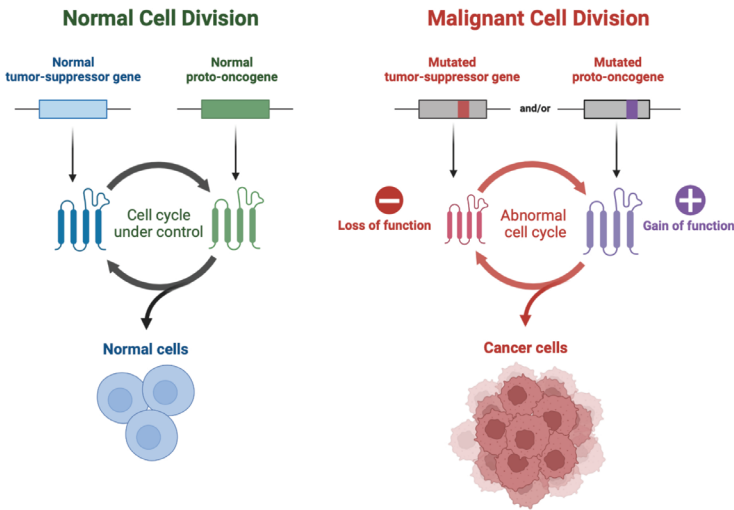


Figure 4. Tumor Suppressor Genes and Mutated Proto-oncogenes

Proto-oncogenes. Proto-oncogenes are normal genes that are precursor of oncogenes. Most but not all oncogenes develop from proto-oncogenes. In essence, proto-oncogenes are involved in regulation of cell growth, proliferation, and/or inhibition of apoptosis. Proto-oncogenes cause no harm until their *mutation* occurs. The *gain-of-function* mutation transforms the previously normal and benign genes into the oncogenes that cause *malignant transformation* (Figure 4).⁶⁵

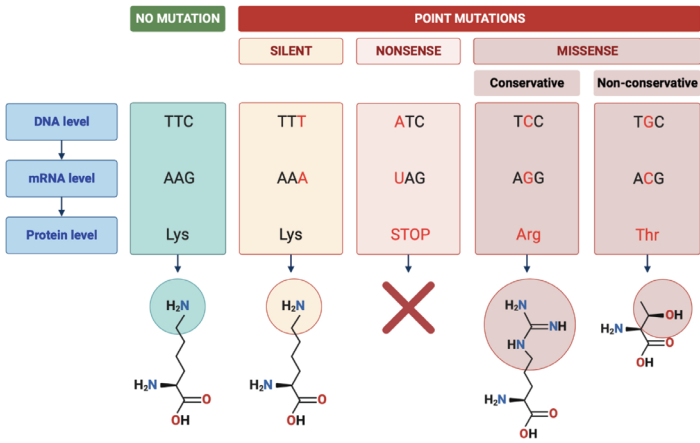


Figure 5. Illustration of Basic Types of Mutations: Silent, Nonsense, and Missense

Mutation. The process of alteration occurring in a gene is a mutation. Typically, such alteration affects the function of the gene, but not always. For instance, a “silent” mutation causes a change in the DNA sequence; however, despite that alteration, the DNA still translates into the same protein sequence. On the other hand, several other codons call for signals to stop the process, and the protein is ejected from the ribosome. In this case, the mutation would be a nonsense mutation, because the protein would be incomplete. In a conservative missense mutation, the replacement amino acid is similar in function and shape to the amino acid being replaced, and the change in protein function may be minor. In a non-conservative missense mutation, a completely different kind of amino acid is added to the chain, perhaps a nonpolar versus a polar one. This will likely change the shape, structure, and function of the protein (Figure 5).

The terms “mutation” and “mutant” can cause confusion since they may be used in different contexts to denote different processes in human and non-human subjects. In human genetics, a mutant is a genetic variant of low population frequency. Similarly, while talking about human disease, “mutation” was commonly used to imply a rare change associated with abnormal function causing a genetic disorder such as sickle cell disease. However, in order to avoid confusion with the term mutation as it is applied for non-human subjects (see below), the new preferred term to describe such situation in humans is **pathogenic variant**. When used in the context of inheritance, mutation implies a recent sequence change (either germline or somatic), in contrast to inheritance from a carrier parent. When describing genetic processes in non-human organisms, the name mutant refers to a population that harbors a specific, atypical variant, such as antibiotic resistance. To avoid confusion, the term mutation should not be used for human subjects.

The types of mutation relevant to this editorial include:
Gain-of-function mutation (GOF). Also known as an “activating mutation,” this type of mutation enhances the gene product in such a way that its effect becomes stronger.⁶⁵ This quantitative gain is called “an enhanced activation.” GOF can also modify the gene to change its function qualitatively, that

is, to produce the entirely different function than the original one. Such new function maybe abnormal and be detrimental to the organism, or can be beneficial. GOF research was associated with the recent controversy over the origin of the SARS-CoV-2 virus.⁷³

Loss-of-function mutation (LOF). Also called “an inactivating mutation,” an LOF mutation results in the gene product having less or no function. In other words, LOF causes partial or full inactivation of the gene. A well-known example of disease caused by an LOF is cystic fibrosis.⁷⁴

Other noteworthy type of mutations include: **nonsense mutation**, which creates a premature stop codon; **missense mutation**, which creates amino acid change; a **synonymous mutation**, which does not change protein sequence; and a **frameshift mutation**, which shifts the reading frame of the DNA, in turn altering the triplet codons for protein translation, creating an entirely new protein sequence downstream of the mutation.

Malignant transformation. This process converts normal (benign) tissue into neoplastic (malignant) tissue. This occurs through the formation of novel oncogenes, the inappropriate over-expression of normal oncogenes, or by the under-expression or disabling of tumor suppressor genes.^{65,75}

Carcinogens. There are two types of environmental factors that are capable of inducing carcinogenesis (Figure 6). **Non-genotoxic (NGTX)** or activation-dependent and **genotoxic (GTX)** or activation-independent.⁷⁶

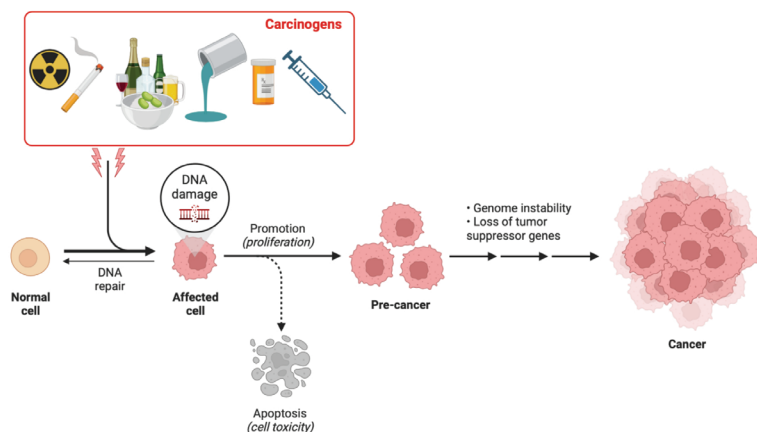


Figure 6. Overview of Carcinogenesis

NGTX carcinogens have no direct interaction with DNA; they most likely induce malignancies by disrupting cellular structures and by modifying the rate of cell proliferation or by altering the processes that enhance the odds of genetic errors.

GTX carcinogens are typically electrophiles that are capable of interfering directly with DNA via formation of covalent bonds. This process leads to formation of DNA-carcinogen complexes also known as **DNA adducts**. These complexes cause various types of DNA damage, including cleavage of the DNA strands, removal of DNA bases (hydration), formation of cross-links between the two helices and chemical bonds between adjacent bases. Those structural changes cause modifications of the coded DNA genetic information. Such mutations are typically fixed by DNA repair mechanisms; however, if DNA replication occurs prior to the action of a repair mechanism, mutations

are bound to become permanent, resulting in malignant transformation.⁷⁶

Viruses and their parts have been long recognized as carcinogens.^{65,77} In fact, viral infections are estimated to play a causal role in at least 11% of all new cancer diagnoses worldwide.⁶⁵

Nucleic Acids. Readers of this Journal are assumed to be familiar with **DNA** (deoxyribonucleic acid), the primary molecular constituent of chromosomes, the structures that store the genetic information of humans and most other living organisms, and **RNA** (ribonucleic acid), which translates the genetic code for protein synthesis and carries the genetic information for many viruses. In addition to messenger RNA (mRNA), ribosomal RNA (rRNA), and transfer RNA (tRNA) involved in protein synthesis, there are **regulatory RNAs**, which are of special interest for vaccine skeptics.

Initially, it was believed that RNA cannot regulate gene expression—an obsolete notion still repeated today by vaccine proponents. Before discovery of regulatory RNA, it was assumed that that only proteins could act as regulators of gene expression. Those proteins were known as **repressors** and **activators**. They had specific short binding sites within enhancer regions near the genes to be regulated.⁷⁸ However, later studies have shown that RNAs are also involved in the process of gene regulation in a variety of organisms. Bacteria and archaea have regulatory RNA systems such as bacterial small RNAs and CRISPR.⁷⁹

In eukaryotes there are several kinds of RNA-dependent processes regulating the expression of genes at various points.

RNA interference (RNAi) is a ubiquitous intracellular process mediated by small RNA species, through which specific RNAs are targeted for editing, degradation, or clearance. RNAi has important roles in the regulation of gene expression, developmental processes, cellular defense, and epigenetic effects. **RNAi technology** (also called **antisense technology**) has been used in the laboratory to test the function of a gene by preventing its expression. Its use has been attempted clinically as a means of posttranscriptional gene silencing to reduce expression of viral or cancer genes, or to lower cholesterol. The specific therapies are sometimes referred to as **antisense oligonucleotides** (ASOs; AS-ODNs). There are ongoing early attempts at developing therapeutic applications in the fields of hematology, oncology, and neurodegenerative disease. These may utilize **long non-coding RNAs** to shut down blocks of chromatin epigenetically; **enhancer RNAs** to induce increased gene expression;⁸⁰ **PIWI-interacting RNAs** (piRNAs) that interact with PIWI (P-element-induced wimpy testis) a class of proteins that may regulate stem cells and appear to be aberrantly expressed in some cancers;⁸¹ and **microRNAs (miRNAs)**, specific short RNA molecules that can base-pair with mRNAs.

Reverse transcription is a process in which a complementary DNA (cDNA) is generated from an RNA template. This generation is mediated by the enzyme reverse transcriptase (RT). RTs are used by various viruses such as HIV and hepatitis B to replicate their genomes. Most importantly, the **oncogenic RNA viruses** such as **Rous sarcoma inducing virus** rely on this process as well.^{82,83}

Role of Cancer Pharmacoepidemiology in Studying Vaccine-Cancer Associations

What sets **cancer pharmacoepidemiology** apart from the classic pharmacoepidemiology is understanding the nature of the most significant challenge of studying the potential carcinogenic effect of the vaccines. This challenge is related to fact that the carcinogenic effects of vaccine may become manifested with a substantial delay of up to several years after vaccine administration. The long period of cancer development and the relatively low incidence of individual cancer impede the ability of traditional pharmacovigilance systems to identify drug-cancer associations. The data system based upon spontaneous reporting of adverse effects such as VAERS are the most affected by this long delay. Most patients simply do not make connections between vaccination and appearance of cancer, due to the long interval between those two events. Consequently, analyses based on large-scale medical data sets are essential to provide solid data on potential effects of vaccines on cancer incidence.²⁴

While familiarity with theoretical oncogenomics is very important, reliance on theoretical methods has limitations for solving the practical clinical problem. The best theory, even validated by laboratory experiments, if not confirmed by the large set of real world data will remain a mere conjecture.

The anecdotal reports posted by family members on social media and more structured observations by independent pathologists are certainly very valuable. So are analyses using general public databases such as VAERS. Those data clearly demonstrate the presence of alarming safety signals.^{84,85}

However, formal oncopharmacological studies are the gold standard that would complement perfectly the oncogenomic theory to produce the ultimate and irrevocable proof of the COVID-19 vaccine carcinogenicity.^{24,86} Corrupt medical officialdom is more than well aware about the power and impact that well-designed pharmacoepidemiologic studies of drug-vaccine associations can have,⁸⁷ and it uses its enormous leverage of absolute control over the realm of cancer pharmacovigilance to suppress any attempts at independent inquiry about the safety of COVID-19 vaccines using this formidable methodology. However, it is creating negative evidence in the process.

Pharmacoepidemiologic cancer research requires generous funding, formal research structures, and access to protected databases. Thus, it is unrealistic to think that independent dissident researchers can embark on meaningful pharmacoepidemiologic research of COVID-19 vaccine carcinogenicity within a year or two. It is hoped that at sometime in the future this will be possible with the reformed academic model as described above. In the meantime, dissenting researchers can keep challenging officialdom about the negative data in the field of cancer pharmacovigilance. To do so effectively, they should acquire at least a rudimentary working knowledge of this scientific area.⁸⁸⁻⁸⁹

Conclusions

Cancer continues to be the most feared disease due to its high mortality, burdensome morbidity, and availability of only mediocre treatment options. In the past, efforts to prevent cancer by elimination of major carcinogens from the

environment were enthusiastically supported by both major ideological camps in the U.S. The introduction of potentially highly carcinogenic COVID-19 vaccines in the setting of a worldwide pandemic emergency has revealed that the progressive block is much more interested in promoting the vaccine produced by their major donors than in protecting the public from the most abhorred disease.

Due to the fact that progressive COVID-19 vaccine promoters have a tremendous power advantage over their vaccine-skeptical counterparts, the experimental vaccines utilizing an unsafe genetic technology paradigm with obvious carcinogenic potential have been administered under duress to a large segment of the population. The more acute side effects of this vaccine such as myocarditis, blood clots, and sudden death started to appear right away.

Currently, we are bracing for the next wave of delayed but even more horrific side effects of this vaccine in the form of newly induced and accelerated cancers. The medical establishment that bears full responsibility for this carnage remains in denial and takes no steps to remedy this continuing disaster. While it is too late to prevent the damage that has already occurred, it is hoped that application of the methodologies used by oncogenomics and cancer pharmacoepidemiology, combined with steadfast medical freedom activism, will make a difference for future generations.

Jane M. Orient, M.D., is a practicing general internist and serves as executive director of AAPS and managing editor of the Journal. Contact: jane@aapsonline.org.

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