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COVID-19 & Disaster **Capitalism - Part II**

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INTRODUCTION

Over the past decade experts repeatedly warned it was but a matter of time before the next pandemic struck. They urged governmental agencies to prepare strategies to diminish its potential impact. When SARS-CoV-2 finally emerged in late January, 2020 the government was paralyzed and unable to take effective action.

With cases springing up in California, Washington and New York, President Trump insisted that US borders were secure. As the SARS-CoV-2 organism spread across the country he claimed that the White House had a 'perfectly coordinated and finetuned plan' and that the situation was 'very much under control'. He predicted the outbreak would remain limited and resolve by April. And as cases surged in early April critical shortages of personal protective equipment and ventilators began to crop up in hospitals across the country [1].

The shortage of masks and ventilators, in turn, resulted from the failure of Congress to allocate funds for replenishment of the Strategic National Stockpile. Funding had been blocked a decade earlier by members of the Tea Party faction who sought to impose sweeping spending cuts on the Obama White House. Part of the collateral damage of the partisan budget war was the government's ability to stockpile critical medical supplies in the event of a public health crisis [2].

After the Ebola outbreak in March, 2014, the Obama Administration set up a White House pandemic response team. The team issued a 69page National Security Council playbook in 2016 which set up chains of command and protocols intended to assist leaders in coordinating an effective US governmental response to an emerging global infectious disease threat. The response team was disbanded in May, 2018 by the

001



Trump Administration in order to streamline chain of command within his National Security Council [3, 4].

As governmental attempts to prepare for a potential public health disaster were spinning in circles in the pre-pandemic years another nexus of power was quietly preparing to take decisive action in the event of a global calamity.

In October, 2019, just months before SARS-CoV-2 was unleashed, a pandemic simulation exercise, Event 201, was sponsored by the Johns Hopkins School of Public Health in partnership with the World Economic Forum and the Bill and Melinda Gates Foundation [5-7]. Held in New York City and attended by business leaders, health officials and policymakers, the exercise was intended to highlight the importance of public/private partnerships, i.e., strategic cooperation between private industry, national governments, and key international agencies, in order to mitigate potentially devastating social and economic fallout.

Perhaps not coincidentally in the Event 201 simulation participants were plunged into a rapidly evolving coronavirus outbreak that had spread from South America and was wreaking global havoc. The virus, closely related to the original SARS strain but more lethal and transmissible, was resistant to all existing vaccines. Fictional newscasters broadcast unfolding events as the virus spread with impunity across national borders bringing international trade and travel to a standstill and sending the global economy into a virtual tailspin. In the simulation social media was abuzz with rumors and misinformation, civil unrest escalating, and governments increasingly unstable.

From this dire apocalyptic scenario three potential management challenges must have become apparent to conference participants: how to contain the spread of the virus within the

population; how to maintain social cohesion and prevent anarchy in the public domain; and, how to boost populational resistance to the virus. There are only so many take-home lessons one can draw from such calamitous simulation events. Following outbreak of the real pandemic months later, simulation strategies devised by those in power to manage events went according to script.

Thoroughly overlooked in the simulated Event 201 gaming exercise was that during the 20th century there had been four previous pandemics and, while there was inevitable loss of life and transitory economic impact, civil unrest and anarchy did not occur. Rather, the public, by and large, adapted to the circumstances. In earlier outbreaks, just as in the COVID-19 pandemic, it was recognized that morbidity and mortality disproportionately affected the elderly and those with pre-existing disease. And it was generally acknowledged that containment policies such as masking and lockdowns were ineffective in thwarting spread of the contagion. The COVID-19 pandemic has only reinforced these conclusions.

The global SARS-CoV-2 outbreak was a pandemic of firsts: the first in which authoritarian containment and management strategies were widely deployed in an attempt to limit potential impact of a naturally occurring disaster; the first in which mRNA vaccines and anti-viral agents were widely used as frontline modalities to impact human resistance to the virus; the first in which the medical-industrial complex took a lead role in formulating broad political and social policies; the first in which the private sector reaped huge profits and consolidated its power at public expense.

In this second part of the Disaster Capitalism series, we examine the means by which the COVID-19 pandemic was managed, and utterly mismanaged, by the medical-industrial complex while amassing unprecedented revenues underwritten by public



monies. Public perception of evolving pandemic events was actively manipulated by disinformation originating in governmental agencies such as the HHS, NIH, FDA and CDC while mainstream media outlets and social media platforms labeled valid dissenting perspectives as misinformation. As shown in earlier work, 80-90% of the COVID-19-related deaths were preventable had appropriate treatments been implemented [8-10]. While many scientists endorsed the opportunistic agenda, even propping it up with partisan research, a large and growing body of evidence indicates that the corporatist pandemic strategy utterly failed to achieve its stated goals.

DISSECTING A FAILED STRATEGY

By late summer 2022 the Biden administration announced suspension of all pandemic containment measures and, weeks later, declared the pandemic to be over [11]. Some questioned this wisdom and warned of a potential case spike in the fall season. Others suggested it was politically motivated in advance of the November elections. The announcement was indeed curiously timed given that average caseloads in the US were still hovering in the 100,000 range. Perhaps there is a more fundamental reason for the policy change: recognition by officials that the strategies had failed.

Defections from containment policies, the primary strategy used in most first world nations, had begun long before Biden's declaration and, by then, numerous countries had already jumped ship. In September 2021 Denmark, which had enacted stringent policies, abruptly discontinued measures even as the Delta variant was still spreading. This was followed by a limited autumnal surge which, in turn, was succeeded by a more dramatic Omicron surge in late 2021 after which case and mortality rates declined and stabilized by late winter 2022. This pattern was replicated in other countries.

The evidence is overwhelming that the global pandemic response was bungled and we need to examine the reasons in greater depth. As pointed out, based on earlier pandemics it was generally acknowledged that containment measures were ineffective. In 1973, WHO virologist Charles Cockburn wrote: 'the influenza virus behaves just as it seems to have done 500 or 1000 years ago and we are no more capable of stopping epidemics or pandemics than our ancestors were' [12].

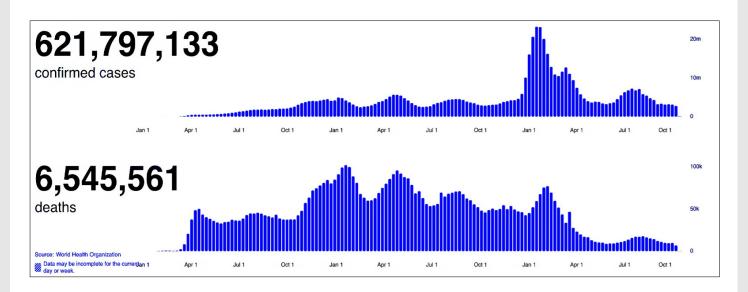
WHO released a position paper in 2019 before the pandemic claiming there was insufficient evidence in support of containment measures. However, for inexplicable reasons it abruptly flip-flopped in spring of 2020 and urged global lockdowns. Then, six months later, in another unexpected turnabout, it reversed its position and called for their elimination [13, 14]. In retrospect the reason seems clear: containment doesn't alter populational resistance but simply 'flattens the curve,' which, euphemistically, means it only postpones the inevitable. Moreover, the dire economic consequences of such draconian policies had become obvious to all.

Only a few items of post hoc evidence are needed to substantiate that containment strategies, not to mention the vaccine initiative, broadly failed to achieve their intended goals.

If we glance back to January 1, 2020, as the pandemic was just emerging (before data were even available), global case numbers were (perhaps) in the thousands. During the first week of January, 2021, after nearly ten months of containment measures, 4,985,723 new cases were reported globally. During the first week of January, 2022, after a year of containment measures *and* vaccine initiatives, there were 16,138,104 new cases translating to a 3.2-fold increase. By late-January numbers had skyrocketed even further to 23,205,305 equating to a 4.6X increase [14] (Figure 1).



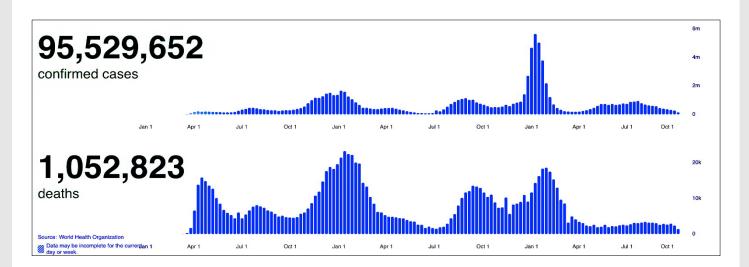
Figure 1: Longitudinal graphs of global caseloads and mortality during the SARS-CoV-2 pandemic (From WHO Coronavirus (COVID-19) Dashboard)



Similar trends were seen in the US: in the first week of January, 2021 the US tallied 1,667,173 new cases. During the first week of January, 2022 these numbers had climbed to 4,682,921, about a 2.8X increase. By mid-January the total hit

5,650,958 new cases corresponding to a 3.4-fold jump (Figure 2). Based on such data to even speak of containment or boosting populational resistance is completely absurd.

Figure 2: Longitudinal graphs of US caseloads and mortality during the SARS-CoV-2 pandemic (From WHO Coronavirus (COVID-19) Dashboard)





There are compelling reasons behind such numbers. It is estimated that *at a minimum* 50% of viral transmission occurs via asymptomatic or pre-symptomatic carriers [15-22]. Short of punitive lockdowns (as implemented in China) nothing stopped the spread of SARS-CoV-2. This is to say that attempting to curtail viral spread is an unrealistic and unattainable goal. Recognition of this, in turn, calls into question the value of widescale populational testing which, even under optimal circumstances, has a sensitivity of only about 80% and, in the real world, no more than 50-60%. Only the corporate sector stood to benefit from the implementation of COVID-19 testing.

A similar case can be made against the vaccines. We can't overlook the unprecedented historical scope of this moment: vaccines, novel ones at that, had never before been used to alter the course of a pandemic. One needs to exercise a fair degree of objectivity if not skepticism in assessing the outcome of this Promethean initiative. The goal of vaccination, clearly stated by the science community, was to boost individual resistance to SARS-CoV-2 in order to artificially induce herd immunity. Based on statistical modeling it was stated by experts like Fauci that about 75% of the population would need to be vaccinated. We will ignore that hardly anyone understands the nature of herd immunity or that many scientists argued that mass global vaccination was unattainable.

Mass deployment of vaccines began in early 2021. By spring a handful of countries, Israel in particular, were nearing the hypothetical threshold and yet, once the Delta variant emerged, it spread like wildfire independent of a country's vaccine status [23, 24]. Both the CDC and the Biden administration were aware of this fact and chose to ignore it. Instead, a misinformation campaign was launched to heap blame on the unvaccinated. At the same time the public was pressured, and in some cases mandated, into submitting to COVID-19

booster shots. This was necessitated after studies found that the vaccines don't confer immunity but only induce short-term protection by stimulating antibody production.

In spite of an aggressive booster campaign the same results occurred when the Omicron variant emerged in autumn of 2021. By January 2022 case rates, both globally and in the US, reached the highest levels of the pandemic, far surpassing those at the beginning of 2021 when the vaccines were being rolled out. It is difficult to explain these results away on any basis other than primary failure of the containment and vaccine strategies. It is a common research practice that when clinical trials do not produce expected results or when there is excess morbidity and mortality they are terminated. Under usual circumstances this disastrous social experiment would (and should) have been stopped by late 2021.

To further gauge the real efficacy of the interventions we gathered pandemic-related data from 108 countries around the world. We assessed outcomes by determining the number of diagnosed COVID-19 cases and registered deaths on a country-by-country basis and compared them to the percentage of individuals in the population that had been vaccinated. To evaluate effectiveness of social containment measures we developed a stringency index based on a binary (0,1) weighting of 11 parameters: mandates, masking, social distancing, curfews, quarantine, business/school closings, banning or limiting public gatherings, lockdowns, travel ban, contact tracing, and PCR testing. Results were unambiguous: no benefit was conferred by containment measures or vaccination initiatives; to the contrary we observed trending towards increased mortality in countries with higher vaccine rates and per capita income levels [25]. The pandemic management strategy, as global caseload numbers already indicate, was an unmitigated failure.



From this exercise several broad conclusions emerge: decisions by countries like Sweden not to impose mandates or strict containment policies - its stringency index was only 2/11 – were affirmed. Early on an outcry erupted over Sweden's lax policy and for months critics had a heyday pointing at its surging case and mortality rates. Yet by the end of the pandemic its numbers were squarely in the middle of the pack and, in fact, lower than numerous countries that had imposed strict mandates.

The emergence of the Omicron strain was the final nail in the coffin. A handful of 2022 studies document markedly reduced effectiveness of the vaccines against the Omicron strain compared to the Delta variant. After two doses effectiveness was only in the 55% range after which it rapidly declined over several months to as low as 5.9%-16.5% according to several studies [26-32]. Studies found a high rate of breakthrough infection [33]. While the efficacy of the vaccines was stridently defended in the media and alleged to protect against severe disease and hospitalization they did little to prevent primary infection which is what they were intended to do.

Lab studies found that the vaccines generated markedly decreased levels of neutralizing antibodies against Omicron and that their ability to incapacitate the virus was 'severely reduced' [34, 35]. This means, in effect, they neither stopped propagation nor transmission of SARS-CoV-2, which was their stated purpose. Provocative studies from Canada and Denmark suggested they may even reduce immunity, called negative vaccine efficacy, and actually increase the risk of becoming infected by Omicron [36-39].

Think about this. As the vaccines failed to impact viral propagation and spread, they never beneficially altered the dynamics of the pandemic. In the final analysis, as the pandemic seems to be

winding down, we can state with certainty that this impending state of heightened population resistance, i.e., 'herd immunity,' has been reached not by any of the imposed measures but purely through the spread of primary infection. In support of this it has been found that the spectrum and activity of the antibody response after vaccination is stronger in persons who have already had primary COVID-19 infection [40]. Antibody-induced protection is not equivalent to natural immunity.

Battle lines were drawn early in the pandemic before most of the evidence was even on the table. By decree, without open scientific or public dialogue, the pandemic was to be managed according to disaster capitalism strategies, finely honed over previous decades, and upheld by the Event 201 gaming exercise. Real science was never a part of the plan. Instead, it was driven by expediency and the corporatist agenda. And the winners are . . .

THE TESTING SCAM

'Dear Fellow Shareholder, 'began the sleekly-designed 2021 annual report from Abbott CEO Robert Ford, 'COVID tested us again in 2021—and Abbott again rose to the challenge. We met the pandemic head-on with our battery of tests for the virus . . . And, most importantly, we kept our sights on the long term and our dynamic vision for the future of health'' [41] (Figure 3).



Figure 3: From Abbott Laboratories 2021 Annual Shareholder Report



DEAR FELLOW SHAREHOLDER:

COVID tested us again in 2021 — and Abbott again rose to the challenge. We met the pandemic head-on with our battery of tests for the virus. We kept focus on our underlying businesses, all of which delivered highly successful years. And, most importantly, we kept our sights on the long term and our dynamic vision for the future of health.



The report chronicled \$43.1 billion revenues in 2021 with a jaw-dropping 22.9% sales increase from 2020 equating to 42.7% earnings per share increase. The pandemic played a huge role in Abbott's good fortune: with emergence of the Delta and Omicron strains demand for diagnostic tests surged to unprecedented levels reaching 150 million units per month. The tests received rubberstamp emergency use approval from the FDA. And for navigating the turbulent waters of the COVID-19 pandemic Ford pocketed \$25 million dollars in 2021 [42]. Another coup for disaster capitalism.

From the beginning of the pandemic testing was touted as an imperative. In March, 2020, WHO Director-General Ghebreysus announced, 'we have a simple message for all countries: test, test, test'. Testing, he asserted, was essential to contain the spread of the virus. Yet in spite of such broadly applied measures COVID-19 caseloads in the US and across the globe continued to steadily climb well into 2022. Not only was containment a myth but the tests designed to track viral spread were not up to snuff [43].

Three testing methods ultimately became the means by which 'objective' determinations were made: molecular-based polymerase chain reaction (PCR) tests, the antigen-based colorimetric rapid tests, and the serologic detection of antibodies.

In PCR tests viral RNA, collected by nasal or throat swab, is added to a chemical medium and enzymatically converted into DNA fragments. The process is repeated sequentially in what are called amplification cycles until sufficient DNA can be detected, known as the cycle threshold. The cycle threshold value depends on the amount of virus in the sample: with less virus more amplification cycles are required and, as a consequence, results more prone to error [44-48].

While specificity of PCR tests, i.e., the ability to correctly identify SARS-CoV-2, is high, in the 98-99% range, sensitivity is 'moderate at best'. In several large meta-analyses 54-58% of tests were initially misdiagnosed as falsely negative and only confirmed to be positive by subsequent testing. This is to say that one out of every two individuals tested will return to their communities and continue to spread the virus. Moreover, testing is recommended primarily in symptomatic individuals and doesn't address the asymptomatic transmission problem. Testing is hardly a viable containment strategy. An investigation by the Kaiser Family Foundation found costs ranging from \$20 to \$850 with a median charge of \$127 a variable portion of which may be out-of-pocket [49-50].

The rapid antigen tests are equally problematic: In these colorimetric tests a nasal or throat swab produces a color change within 15-30 minutes in infected individuals [51, 52]. But they only respond to high viral loads and pinpoint the most contagious cases. A Cochrane database meta-analysis found that sensitivity of the rapid tests varied widely [53]. It was higher in symptomatic (73.0%) versus asymptomatic subjects (54.7%) and highest in the first week after symptom onset (80.9%) after which it declined (53.8%). The UK government, which commissioned a study of rapid tests, reported that many 'do not perform at a level required for mass population deployment' [54].

Arguably the most twisted example of the corporate 'build it and they will come' marketing strategy is the blood-based antibody test. Early in the pandemic scientists devised methods to induce cells to produce large quantities of altered spike protein which was used to develop an ELISA (enzyme-linked immunosorbent assay) test. When such lab-derived antigenic material is added to a blood sample of a person who had COVID-19 infection it combines with antibodies to trigger a



color change. The problem is that antibodies don't appear in the blood until 10-12 days after infection. To hawk this product of dubious merit the question was reframed from how to detect COVID-19 to how many cases have gone undetected? [55]. Widescale testing, it was argued, would provide further insight into patterns of viral spread which could help shape decisions regarding containment measures like social distancing and lockdowns. The price tag of blood antibody tests is in the \$130-150 range [56, 57].

The test, test imperative championed by the WHO had broad global impact. In the US, a world leader in COVID-19 testing, over 910 million tests had been administered by June, 2022 [58, 59]. The development and deployment of the various tests were in large measure underwritten by public funding. In early 2021 the Biden administration allocated \$10 billion from a stimulus package for COVID-19 testing and invoked the Defense Production Act to make 280 million rapid tests available [60]. The Trump administration had previously funneled \$150 million to Abbott Laboratories for its BinaxNOW rapid test [61]. The result was a windfall not only for manufacturers like Abbott but giant lab testing entities like Labcorp and Quest Diagnostics [62, 63].

Labcorp, a global clinical laboratory network, reported 2021 revenues of \$16.1 billion, an increase of 15.3% over 2020 revenues. The lion's share of the increase came from COVID-19 testing. As of late June 2022, the laboratory giant had performed 70.6 million PCR tests and 8.9 million blood antibody tests. 'Labcorp's ability to harness science, innovation and technology', declared chairman and CEO Adam Schechter, 'helped us advance our strategy, effectively respond to the global pandemic, and drive meaningful financial performance throughout 2021' [64, 65].

Ditto for Quest Diagnostics. Revenues in 2021 hit \$10.8 billion, up 14.3% from 2020, with earnings per share up by 48.5%. In an unprecedented year, volume ranged between 100,000-150,000 tests per day, double what Wall Street analysts had predicted. 'I am proud of the incredible accomplishments of our 50,000 Quest employees throughout the pandemic', commented CEO Steve Rusckowski. 'They have risen to the challenge of bringing COVID-19 testing to millions of patients — all the while innovating, persevering, and remaining committed to our vision of empowering better health' [66, 67]. Disaster capitalism took trickle-down economics to new heights.

EARLY TREATMENT

Beyond the failure of containment measures and vaccines to improve pandemic outcomes, a pivotal question arises: Why weren't early treatment protocols instituted during the pandemic? Put differently, why did the medical-industrial complex gamble on unproven and potentially risky vaccines when cheap and effective treatments with known safety records were already available? The answer points squarely to the endgame of disaster capitalism: power and money.

In perhaps the greatest public health disaster in medical history, policy-makers failed to establish home-based therapeutic protocols. Instead, COVID-19-positive individuals were sent home to manage for themselves in the early treatable phase of the illness while continuing to spread the virus among close contacts. Many developed disabling symptoms requiring hospitalization. Treating early disease has a far greater likelihood of success than advanced conditions. "The strategy from the outset", argues cardiologist Peter McCullough, "should have been implementing protocols to stop hospitalizations through early treatment of Americans who tested positive for COVID but were still asymptomatic" [68].



Why did authorities squander the opportunity to decisively impact pandemic dynamics in the year before vaccines were released? By March 2020 Chinese physicians had published an early treatment regimen [69, 70]. McCullough published the first US COVID-19 early treatment protocol in July, 2020 in the American Journal of Medicine but was roundly ignored by policymakers [71, 72]. In a small trial McCullough's regimen was administered to over 800 subjects with a resultant 85% decrease in hospitalization and mortality. "We could have dramatically reduced COVID fatalities and hospitalizations", McCullough argues, "using early treatment protocols and repurposed drugs including ivermectin and hydroxychloroquine and many, many others". He claims the COVID-19 pandemic in the US could have been ended as early as May, 2020 [73].

In an earlier series of papers, we established the presence of a complex blood-borne energy field generated and sustained by the contraction and dilation cycles of the heart [74-76]. We described three intertwined and interconvertible primary energy forms: the magnetic, taking origin in the vascular system; the radiant, deriving from external sunlight, generated in the extracellular fluid space beneath the skin; and the dielectric, in play in cells and mediated primarily by electroionic mechanisms.

We substantiated the extent to which the cardiovascular system is involved the pathogenesis of the COVID-19 syndrome: early in the illness SARS-CoV-2 infects endothelial cells leading to widespread inflammation secondary to diastolic dysfunction with resultant impairment of energy generation [77-84]. Inflammation is pathognomonic of mitochondrial dysfunction with impairment of intracellular processes like autophagy and protein folding along with triggering of the cytokine storm.

Functional disturbances associated with the COVID-19 syndrome, from early constitutional symptoms like fatigue, weakness or fever to more advanced pathologic alterations like autoantibodies, intravascular thrombosis or organ failure are manifestations of a mounting energy debt. It is axiomatic that proper treatment of the syndrome must entail repletion of the energy deficit. We have documented the various treatments in earlier papers and will only briefly review the cellular basis of their efficacy.

For decades reports have described beneficial effects of chloroquine (CQ) and hydroxychloroquine (HCQ) in autoimmune and infectious conditions. General properties include anti-inflammatory, antiinfective, immunomodulatory, anti-thrombotic as well as metabolic. Effects manifest in the blood, arterial wall, extracellular fluid space, and intracellular compartment [85-87]. CQ/HCQ effects in the vascular system include increased endothelial-dependent vasodilation and elevated nitric oxide synthesis in endothelial cells]88-100]. They improve insulin resistance by boosting glucose metabolism at the cellular level [101, 102]. They decrease pro-inflammatory cytokine release and promote immune phagocytosis. Effects are secondary to alterations in white blood cell metabolism and a shift toward more efficient energy-generating pathways [103-115].

CQ/HCQ actively accumulate in cells. In both immune and non-immune cells their primary effect is to shift cytoplasmic pH into the alkaline range which suggests influx of energy and enhanced mitochondrial function. Alkalinization induces a shift in cellular metabolism from catabolic to anabolic processes with enhanced protein synthesis, repair of membranes and stabilization of DNA. CQ/HCQ appear to act by increasing dielectric capacitance and flow of negatively-charged ion currents.



Ivermectin (IVM), derived from the soil-based microbe *Streptomyces avermitilis*, was isolated in 1975 by Satoshi Ōmura and William Campbell, who jointly received the 2015 Nobel Prize for its discovery. IVM, with robust anti-parasitic and antiviral activity, has been used safely across the globe by billions. It has proven effective in equatorial regions of Africa in the treatment of onchocerciasis, i.e., river blindness. In years preceding the pandemic IVM was found to possess broad antiviral activity against pathogens like the dengue virus, West Nile virus, Zika virus, yellow fever virus, Venezuelan equine encephalitis virus, Chickungunya virus, HIV-1, adenovirus and, more recently, SARS-CoV-2 [116-127].

The intracellular pathway common to all susceptible viral species, including RNA viruses, involves their transport into the nucleus which is mediated by a shuttle protein known as importin (IMP) $\alpha/\beta 1$ [128-130]. Ivermectin is said to act by inhibiting IMP $\alpha/\beta 1$ -dependent viral passage into the nucleus but this putative mechanism doesn't explain the energetics. IVM binds allosterically to multiple transmembrane receptor proteins, including the inwardly directed G-protein-gated K⁺ (GIRK) channel, to alter resting membrane potentials. Such interactions are effected by hydrogen bonds and necessarily involve transfer of energy into the cell [131-137].

The relation between radiant sunlight energy, vitamin D and inflammatory states has been well documented since the mid-20th century [138-146]. Deficiencies in vitamin D, a steroid hormone endowed with systemic functional properties, have been linked to diseases like tuberculosis, multiple sclerosis, type I diabetes, inflammatory bowel disease, rheumatoid arthritis, psoriasis, and various cancers [147-166]. Based on photosynthesis-like mechanisms, UV rays in the skin induce formation of highly active vitamin D, 1,25(OH)2D3, which has about 500-fold greater biological potency than its

precursors. This energy-requiring step is effected by the cytochrome p450 enzyme system, which itself is activated by exposure to ambient light [167-170]. Light-induced transformations, quite clearly, are energetic in nature.

The cellular effects of activated vitamin D are mediated by vitamin D receptors which are found in over 30 tissues throughout the body including kidneys, bone, cartilage, intestines, pancreatic b-cells, prostate, breast, muscle and adipose tissue, and immune cells. Activated 1,25(OH)₂D₃ induces or represses at least 500 different gene activities through receptor-mediated mechanisms [171]. Studies indicate that sunlight, UV light and vitamin D supplementation modulate inflammation in both infectious and autoimmune states.

The preconditioning phenomenon (PC), first recognized by Murry et al. in 1986, is without doubt one of the most remarkable scientific discoveries of the 20th century. In experiments it was found that one or more brief applications of sublethal stresses like ischemia, hyperthermia, or various toxins induce a powerful counter-response that confers body-wide protection to subsequent insults acutely and for up to 72h afterward. The degree of protection is estimated to be in the 70-80% range. PC is now regarded as the most powerful innate protective response discovered to date. Since its recognition over 35 years ago 10,000s of studies have detailed its various aspects and yet scientists remain unable to explain its basis [172-183].

Increasing reports from across the globe have documented remarkable disease-modifying properties of the toxic environmental substance ozone. In the 1980s physicians described beneficial results with ozone in HIV patients. The list of disorders responding favorably to it continued to grow: autoimmune conditions, peripheral vascular disease, fibromyalgia, neurodegenerative diseases, renal and gastrointestinal disorders, various



cancers, healing of wounds and more. During the pandemic studies found beneficial effects in COVID-19 pneumonitis. It has only recently been recognized that ozone mediates its effects by triggering the PC response [184-260].

Administered by various routes ozone solubilizes in bodily fluids, most importantly blood, inducing a transient energy-depleted oxidized state. Red blood cells (RBCs) undergo a dose-dependent decrease in energy flux and respond with a rebound surge in energy release. By such means ozone induces up-regulation of enzymes in RBCs with enhanced ATP and NADPH production which spill into the blood and neutralize the deleterious effects. RBCs generate nitric oxide which enhances endothelial-dependent dilation and blood flow to peripheral tissue; as a consequence mitochondrial function is boosted along with activation of various genes that counteract the oxidative stress [261-273].

Evidence in support of these various 'alternate' therapies—HCQ, IVM, vitamin D and ozone—was present in the scientific literature for years, in some cases decades, before the pandemic. All the agents have extremely attractive safety profiles, are cheap, widely available, and would have markedly altered the trajectory of the pandemic. The cost of implementing widescale prophylaxis among the at-risk population in the US, for example, would have been a small fraction of what Biden allocated in support of COVID-19 testing measures. Such a strategy, by our estimates, would have prevented 80-90% of deaths associated with the pandemic. Moreover, it would have facilitated acquisition of herd immunity among low-risk segments of the population. Reduced costs associated with hospitalization would have more than offset any initial expenses.

Pierre Kory, pulmonary medicine and critical care specialist, president of Front Line COVID-19 Critical Care Alliance agreed: 'the efficacy of some of these

drugs as prophylaxis is almost miraculous' [274]. Early intervention after exposure, he added, stops viral replication and prevents development of the cytokine storm and pulmonary complications. Clinical pathologist Ryan Cole concurred: 'Early treatment of COVID-19, plain and simple, saves lives'. If the medical community had been proactive, he claimed, the early multi-drug approach would have saved hundreds of thousands of US lives. 'Never in the history of medicine has early treatment . . . been so overtly neglected by the medical profession on such a massive scale' [275]. The pandemic laid bare the of distortions of disaster capitalism.

DISINFORMATION WAR

In mid-February, 2020, as SARS-CoV-2 began to spread, WHO director-general Ghebreysus proclaimed 'we're not just fighting an epidemic; we're fighting an infodemic' further adding that 'fake news spreads faster and more easily than the virus, and it is just as dangerous' [276]. The internet, as the main global communications portal, was already awash with a cacophony of diverse views blurring fact and fiction. Managing the internet and information flow thus became a key part of the orchestrated pandemic strategy. But any misstep risked further polarization of an already divided populace. The spark in the gas-filled room proved to be Trump's outspoken endorsement of HCQ in Spring 2020 [277, 278].

In late July, with the first pandemic wave in full swing, a group of physicians calling themselves America's Frontline Doctors held a 'white coat summit' on the steps of the US Supreme Court to protest containment measures, publicize early treatment protocols and urge reopening of the economy (Figure 4). Videos of the summit, which had reached millions of viewers, were hastily removed by social media platforms like Twitter, Facebook, and YouTube. The group was excoriated by mainstream health news outlets [279-281].



Figure 4: White Coat Summit, Washington, DC, July 27, 2020



On August 5, an invited commentary appeared in Medscape, the leading global information website for healthcare professionals, by Ranit Mishori, physician and chief public health officer at Georgetown University [282]. Calling the claims 'farcical' and based on 'pseudoscience', Mishori warned of the dangers of exposing the public to their radical views: 'In an era when factless ideas ricochet and trend around the world before medical organizations and professionals can address them', she wrote, 'we've seen an unprecedented embrace of previously fringe attitudes'. Mishori wasn't alone.

California physician Nick Sawyer, founder of the group No License for Disinformation, argued that 'disinformation is needlessly killing Americans' and urged state medical boards to take disciplinary measures against physicians who spread misinformation [283]. Sawyer claimed 'they were

anti-mask. They were anti-lockdown. They wanted everybody to believe that it was safe to continue life as normal'. America's Frontline Doctors, claimed Sawyer, were 'very well-funded physicians who are essentially weaponizing the white coat in order to spread disinformation'. He argued that social media platforms, legislators, and medical boards needed to protect the public from 'dangerous, conspiratorial information that's being pushed out in a massively coordinated way'. Sawyer's views had a national audience courtesy of ABC News.

The disinformation to which Mishori and Sawyer alluded concerned the means by which the pandemic should be handled. The No License for Disinformation group embraced the corporatist agenda: 'The scientific evidence—and thus the overwhelming consensus amongst the medical, scientific and public health communities—is that ivermectin is <u>not effective</u> in the prevention



or treatment of COVID-19'. And they strongly back vaccination policies: 'the best thing you can do to protect yourself and your family is to get vaccinated' [284].

Mishori was equally emphatic: 'In the face of robust evidence and extensive data debunking the effectiveness of hydroxychloroquine as a COVID-19 treatment, 26% of Americans say they support President Trump in his efforts to promote the unproven drug'. Mishori's and Sawyer's politically-charged messages were clear: the dominator agenda is the only option. But this was 2020 before vaccines were even on the horizon. Why did they out-of-hand reject early treatment protocols? More importantly, did they consider their own views may have been swayed by disinformation?

In May the medical journal *Lancet* published a meta-analysis of 96,000 hospitalized COVID-19 patients from 671 hospitals across the globe by Harvard cardiologist Mandeep Mehra claiming that HCQ yielded no benefits and was associated with increased risk of cardiac arrhythmias and death [285]. *Lancet* later retracted the article when the authors were unable to substantiate the data. But before its retraction trial results had been disseminated across the globe. Fauci cited the study in support of his claim that HCQ was ineffective.

Other clinical trials apparently supported the results of Mehra's fraudulent study. In April a large randomized clinical trial comparing high-dose versus low-dose CQ in hospitalized COVID-19 patients was interrupted early in its course due to an excess of deaths, particularly cardiac arrhythmias, in the high-dose group of patients [286]. But how can such results be extrapolated to early treatment with HCQ? The study was conducted in seriously ill hospitalized patients; the toxicity of CQ is greater than that of HCQ; the employed doses in these hospitalized patients was at least tenfold higher

than that used for prevention and about 2-4 times higher than for early disease. 'The only conclusion you can take from the study', claimed principal investigator Marcus Lacerda, 'is that this drug, when used in high doses, is not safe' [287]. In spite of such caveats the FDA issued warnings against the use of CQ and HCQ for COVID-19 infection *except* in hospitalized patients [288].

In early July the HCQ arm of WHO-sponsored Solidarity Trial, consisting of 14,200 hospitalized patients from 600 hospitals across the globe, was abruptly discontinued when it was allegedly shown to be ineffective [289]. But it is well known that the efficacy of all COVID-19 treatments is markedly diminished in seriously ill subjects. Why should HCQ be any different? Once again, the mainstream media seized on the results and by mid-summer HCQ had been widely labeled as ineffective and dangerous. Clearly Mishori and Sawyer were echoing information that had been widely disseminated by the media.

Lost in the orchestrated takedown of HCQ was that it has been safely used by billions across the globe for seven decades in the prevention and treatment of malaria, and that for decades it has been a staple in the treatment of autoimmune disorders like systemic lupus erythematosus and rheumatoid arthritis. This purposeful act of historical revisionism led to the unnecessary loss of countless lives.

The same social dynamic was at play in the media vilification of IVM which early on became little more than political jousting. CNN, focusing on its archrival Fox News, disparagingly referenced IVM advocacy by commentators Tucker Carlson, Sean Hannity and Laura Ingraham, and even singled out Republican senator Ron Johnson [290]. Instead of highlighting the broad antiviral properties of IVM the media repeatedly depicted it as an antiparasitic, deworming medicine intended for use



in livestock [291]. And to complete its miscasting, the FDA, supposedly 'for the people and by the people', released one of the most demeaning, infantilizing admonitions ever to issue from a governmental agency: 'You are not a horse. You

are not a cow. Seriously, y'all. Stop it' [292] (Figure 5). This was little more than government sponsored cyberbullying as well as a dangerously close infringement on First Amendment Rights.

Figure 5: FDA tweet sent out August 21, 2021 to discourage use of ivermectin for COVID-19 infection.



...

You are not a horse. You are not a cow. Seriously, y'all. Stop it.



fda.gov

Why You Should Not Use Ivermectin to Treat or Prevent COVID-19

Using the Drug ivermectin to treat COVID-19 can be dangerous and even lethal. The FDA has not approved the drug for that purpose.

7:57 AM · Aug 21, 2021 · Twitter Web App

49.9K Retweets 22.1K Quote Tweets 113K Likes



With the public distracted by political theater, Fauci stealthily set up a COVID-19 Treatment Guidelines Panel to make official recommendations [293]. However, up to half of the panel members had financial ties to Gilead, manufacturer of the antiviral agent remdesivir. One of the co-chairs, H. Clifford Lane, was co-author of a study published by *NEJM* that gave highly favorable reviews to remdesivir despite the fact that it had failed in multiple other clinical trials [294, 295]. The panel chose remdesivir as the preferred COVID-19 drug while nixing HCQ and IVM [296]. Yet trial results with remdesivir had been so marginal that even the WHO rejected it as a COVID-19 standby in late fall 2020 [297, 298].

Once in play remdesivir failed miserably. With a jaw-dropping price tag of \$3200 per treatment [299], its clinical performance was underwhelming at best and it had numerous side effects. After release by emergency use authorization, lab studies belatedly discovered it induced mitochondrial damage in heart and kidney cells [300-302]. Clinical reports describe a host of cardiac dysrhythmias: sinus bradycardia, T-wave abnormalities, atrial fibrillation, prolonged QT intervals, cardiac arrest and heart block, leading one review to describe it as 'considerably worse than chloroquine cardiotoxic effects'. Patients on remdesivir were 2.8 times more likely to develop acute kidney injury and deterioration of renal function, which carries a mortality rate of about 35%.

But the shiny silver lining inside this dark cloud was that Gilead raked \$5.6 billion in revenues on remdesivir in 2021 [303]. So much Gilead-promoted hype swirled around it that the Trump administration allocated public funds for stockpiling thus ensuring that all Americans hospitalized with COVID-19 would have access to Gilead's new miracle drug [304].

The undisputed winner of the pandemic, as judged by *Kaiser Health News*, was Pfizer which, during the pandemic generated Texas-sized profits. Its acumen in developing COVID-19 medicines, the article went on, gave the drug kingpin huge sway in determining pandemic policy. Conducting its own internal research Pfizer often presented strategies well before governmental agencies had even carefully sifted through issues raising questions as to who was really steering the ship [305].

And where its strategic influence fell short Pfizer bridged the gap with generous monetary carrots. Since the pandemic began Pfizer has shelled out more than \$25 million for political persuasion to lobbying firms to promote legislation to protect its products and stimulate vaccination programs in the US. During the 2020 election cycle it donated more to political candidates than all other drug companies and tactically covered its derrière by contributing to both the Biden and Trump campaigns.

In early 2022, without ever acknowledging the arguments of physicians like McCullough, Kory and Cole regarding the primacy of early treatment in COVID-19 infection, or the handful of cheap, widely available and efficacious agents already on the market, Pfizer unveiled its own early treatment strategy, paxlovid, a combination of its new antiviral agent nirmatrelvir plus the HIV drug ritonavir, which, for undisclosed reasons, was granted emergency use authorization by the FDA [306, 307]. In one clinical trial it decreased the risk for progression to severe disease by 89%, similar to the cheaper, widely available agents we have already reviewed.

While labeled as safe and without serious side effects, reports indicate that it interacts with a variety of over-the-counter drugs as well as statins, steroids, sedatives, anticoagulants and antiarrhythmic drugs, many of which are commonly



prescribed to the very individuals who are at greatest risk for severe COVID-19 infection. And in recent months there have been numerous reports of 'rebound' infection after paxlovid treatment. President Biden and his wife, Anthony Fauci, and Dr. Rochelle Walensky, among others, reported recurrent COVID-19 infections following paxlovid treatment suggesting it neither confers immunity nor durable protection [308]. With a cost of over \$500 for a 5-day course, Pfizer is on track to rake in \$24 billion in revenues of paxlovid in 2022 [309].

THE VACCINE WAR

The battle that raged in 2020 over early treatment was just a warm-up for the Main Event, the release of the mRNA vaccines in early 2021, and Pfizer, Moderna and the medical-industrial complex came out with both barrels loaded. The challenge was to convince the public of the safety and efficacy of these untested experimental preparations and to silence any and all critics who said otherwise. To accomplish these governmental agencies like HHS, NIH, CDC and FDA, along with the academic community, as well as mainstream media and social media outlets were all enlisted. Failure was never an option for the disaster capitalists.

The vaccines were rushed through the vetting process under emergency use authorization granted in December 2020 which stipulates that 'there must be no adequate, approved and available alternatives to the candidate product for diagnosing, preventing, or treating the disease or condition . . .'. In October 2020 the FDA urged Pfizer and Moderna to implement a clinical trial design that would preserve the integrity of data collection but they argued the designated trial design was 'onerous' and overly complicated and, instead, jury-rigged their own which included granting individual subjects to study data [310, 311]. Failure to employ the recommended study design resulted in loss of valuable data.

In November, 2021 BMJ published a devastating whistleblower piece alleging a rash of improprieties during Pfizer's clinical trial including falsification of data, unblinding of subjects, using inadequately trained personnel and prolonged delays in addressing adverse event reports. A director who repeatedly raised concerns over such improprieties was fired and, subsequently, released a large cache of Pfizer documents [312]. Materials obtained through a Freedom of Information Act request corroborated the allegations [313]. By late February 2021, over 42,000 case reports had been received detailing 158,893 vaccine-related adverse events; of 274 pregnant women who received the vaccine 27.4% developed serious adverse clinical reactions. In late April this data was sent to both the FDA and CDC which, nonetheless, continued to issue glowing safety reports.

As with research and development of the vaccines, the battle for the hearts and minds of the American public came out of the taxpayer's pocket. In December, 2020, Congress passed the Consolidated Appropriations Act which allowed HHS to award contracts to public and private entities to 'carry out a national, evidence-based campaign to increase awareness and knowledge of the safety and effectiveness of vaccines for the prevention and control of diseases, combat misinformation about vaccines and disseminate scientific and evidence-based vaccine-related information, with the goal of increasing rates of vaccination across all ages . . .' [314].

In March, 2021 Biden announced a \$10 billion package 'to expand access to COVID-19 vaccines and build vaccine confidence' [315]. Fauci claimed herd immunity could be reached by fall 2021 if 75-85% of the population was vaccinated [316]. This, of course, was premised on the grand assumption that the vaccines conferred immunity.



At least \$1 billion of the package, channeled through HHS, went as direct payments to media outlets like ABC, CBS, NBC, Fox News, CNN, MSNBC, Washington Post, Los Angeles Times, New York Post, BuzzFeed News, Newsmax as well as hundreds of local TV stations and newspapers around the country as part of a comprehensive media campaign (Figure 6). Innumerable articles,

video clips and advertisements were released trumpeting the safety and efficacy of the vaccines while negative content and contrary views were scrupulously omitted. The media blitz corresponded with widespread vaccine distribution. Media outlets failed to report the content had been underwritten by government funding [317, 318].

Figure 6: Example on a gasoline pump of the far-reaching 2021 vaccine campaign





Another \$3 billion was funneled through the CDC for 'support and outreach efforts' in communities through local organizations and opinion leaders. 'We are doing everything we can to expand access to vaccinations', said CDC Director Rochelle Walensky [319]. More than \$250 million was earmarked to local organizations serving minority communities in which, traditionally, there is entrenched vaccine resistance. A prime strategy included launching the COVID-19 Community Corps which tapped into a nationwide network of over 275 local organizations to mobilize scientists, health professionals, religious communities, civil rights groups, sports teams and small businesses to encourage vaccination [320].

The strategy also included enlisting a large grassroots digital army of social media influencers to promote mass vaccination on platforms like Instagram, TikTok, Snapchat and Facebook [321-324]. The state of Colorado, for example, paid influencers up to \$1,000 a month to report their own vaccine experiences, dispel rumors and misinformation, and to transmit information provided by state health authorities. No doubt influencers believed their messages were public service in scope and few must have realized they were spreading propaganda. Increasingly public messaging blurred the line between free speech and censorship.

In July 2021 the White House began to apply pressure on companies like Twitter, Facebook and Google to curtail the spread of misinformation on social media. 'They're killing people', Biden claimed at a White House press briefing. 'The only pandemic is among the unvaccinated' [325]. This was early in the Delta surge and US officials were still clinging to the belief that the vaccines prevented SARS-CoV-2 transmission and that infections only affected the unvaccinated.

Press Secretary Jen Psaki acknowledged that the White House was collaborating with social media outlets to influence pandemic-related information and manipulate public opinion: 'we're regularly making sure social media platforms are aware of the latest narratives, dangerous to public health that we and many other Americans are seeing across all of social and traditional media. And we work to engage with them to better understand the enforcement of social media platform policies' [326].

In response to these events the non-profit watchdog group America First Legal submitted FOIA requests to HHS, NIH, CDC and the FDA. After a year of delays the material they finally obtained was damning. Documents revealed extensive collusion between the government and Big Tech: CDC sent Twitter tweets it considered to be misinformation; CDC conducted BOLO (be on lookout) meetings with social media companies including Twitter and Facebook to share what they regarded as misinformation; CDC sought to coordinate with Google creation of a 'discipline of infodemiology' to target the public and 'push back against misinformation'. In violation of federal law, CDC received \$15 million of advertising credits as a 'non-monetary gift' from Facebook [327].

'These explosive smoking-gun documents', commented Stephen Miller, America First Legal president, '. . . conclusively demonstrate that Big Tech has unlawfully colluded with the federal government to silence, censor, and suppress Americans' free speech and violate their First Amendment rights. Government is expressly prohibited from censoring competing or dissenting viewpoints or from silencing its political opponents whether it does so directly or whether it uses an outside corporation to achieve its draconian, totalitarian ends'.



Early in the pandemic the Bloomberg School of Public Health at Johns Hopkins, the main organizer of Event 201, took an active role in confronting the so-called misinformation problem and urged social media companies to take measures. To this end Facebook, Google, LinkedIn, Microsoft, Reddit. Twitter and YouTube joined forces to combat 'fraud and misinformation about the virus'. By early 2021 Bloomberg School's message became more strident and had shifted from public health to national security. It called for a national strategy to manage health-related misinformation during public health emergencies which would be under the direction of the White House National Security Council. Centralized management, it claimed, would facilitate tapping into expertise, implementing strategies, and coordinating efforts between agencies like HHS, Homeland Security, Department of Defense, State Department and the intelligence community [328, 329].

Increasingly messaging took on political overtones. From the onset vaccine hesitancy was regarded as the main stumbling block to reaching herd immunity. Polls showed that individuals who believed in 'misinformation' were less likely to get vaccinated and from there it was a short hop, skip and jump to fingering groups who opposed the vaccine narrative [330]. The greatest divide among the American populace was not income, race or gender but political affiliation [331, 332]. As of July, 2021, all but one of the 39 congressional districts in which at least 60% of the residents had received the vaccine were Democratic while 28 out of 30 districts where fewer than 33% of the constituents had been vaccinated were Republican.

A study conducted by *NPR* examined death rates in 3,000 counties across the US and found that people living in counties that went 60% or higher for Trump in November 2020 had a 2.7-fold higher death rate than those that supported Biden [333, 334]. There are multiple reasons for such disparities beyond

political affiliation but without extending their analysis *NPR* attributed them to 'misinformation'. As Naomi Klein points out in *The Shock Doctrine*, the divide and conquer strategy, i.e., singling out of culpable segments of the population, has been a central part of every disaster capitalism-inspired upheaval since the 1970s.

And while bitterly divided factions clawed away at one another, the disaster capitalists amassed unprecedented wealth. Pfizer's projected 2022 earnings are over \$100 billion including \$54 billion from the vaccine and paxlovid. Such revenues are unprecedented in the pharma sector. By comparison, 2020 revenues for Johnson & Johnson, world's largest pharma group, were just \$82.6 billion. During the 2nd quarter of 2022 Pfizer's earnings per share were up 77% compared to the record-breaking 2nd quarter of 2021 [335, 336].

'Less than two years since we made our commitment to use all our resources and expertise to help protect populations globally against the deadly COVID-19 virus', commented Albert Bourla, Pfizer chaiman and CEO, 'we are proud to have delivered both the first FDA-authorized vaccine against COVID-19 . . . and the first FDA-authorized oral treatment for COVID-19. These successes have not only made a positive difference in the world, but I believe they have fundamentally changed Pfizer and its culture forever . . . We now have the tools—in the form of vaccines and treatments—that we believe will help enable us to not only better manage the pandemic, but also help countries move into the endemic phase'.

Bourla failed to mention that safe, effective and cheap medicines were already available before the pandemic and, had they been implemented, would have prevented the deaths of up to 900,000 Americans, dramatically shortened the length of the pandemic, and eliminated the need for Pfizer's deep-pocket altruism. Taking liberties



with established fact has been a long-established part of Pfizer's marketing strategy: in 2009 it shelled out \$2.3 billion, the largest health care fraud settlement in the history of the DOJ, to resolve criminal and civil charges related to illegal promotion of its products.

On October 25, 2022, in a highly-staged yet sublime act of political theater intended for all who had

not examined the evidence or were unable to draw their own conclusions, Joe Biden rolled up his shirtsleeve inside the White House and got a booster shot on live TV (Figure 7). Several months earlier the government had purchased 105 million doses of Pfizer's vaccine in preparation for a fall booster campaign [337].

Figure 7: Joe Biden getting booster jab in the White House October 25, 2022



'It's incredibly effective', exhorted the President. 'But the truth is not enough people are getting it. We've got to change that so we can all have a safe and healthy holiday season. That's why I'm getting my shot updated today . . . [We] have a choice to make. Can we repeat what happened in past winters — more infections; more hospitalizations; more loved ones getting sick, even dying from the virus — or can we have a much better winter if we use all — all of the tools we have available to us now'?

From beginning to end the pandemic was an orchestrated production put on at public expense for the benefit of the medical-industrial complex and disaster capitalism. That they were emboldened to undertake this massive deception and, in the main, succeeded, is an ominous glimpse into a dark future. Innumerable crises now loom on the horizon not only for the US but collective humanity which disaster capitalists will undoubtedly exploit to achieve their ultimate aim. The threat of a global corporatist totalitarian state has never been more present and real. If such a dire scenario is to be avoided decisive collective action must be undertaken.



REFERENCES

- 1. The Federal Government's coronavirus response—Public health timeline. Philip A. Wallach & Justus Myers. Brookings. March 31, 2020.
- https://www.brookings.edu/research/the-federal-governments-coronavirus-actions-and-failures-timeline-and-themes/
- 2. How the Tea Party's war with Obama left the federal medical stockpile unprepared for coronavirus. Fiscal cuts imposed by Republicans in Congress during the Obama administration left the US unprepared. Yeganeh Torbati and Isaac Arnsdorf Salon. April 4, 2020. https://www.salon.com/2020/04/04/how-the-tea-partys-war-with-obama-left-the-federal-medical-stockpile-unprepared-for-coronavirus partner/
- 3. Obama team left pandemic playbook for Trump administration, officials confirm. Victoria Knight, Kaiser Health News Nation. May 15, 2020. https://www.pbs.org/newshour/nation/obama-team-left-pandemic-playbook-for-trump-administration-officials-confirm
- 4. How Trump gutted Obama's Pandemic-preparedness systems: Former officials: Trump's reshuffling of positions and departments, focus on business solutions, downgrading of science, left the country dangerously unprepared for an unprecedented pandemic. Abigail Tracy, Vanity Fair. May 1, 2020. https://www.vanityfair.com/news/2020/05/trump-obama-coronavirus-pandemic-response
- 5. Event 201: A Global Pandemic Exercise. The Johns Hopkins Center for Health Security https://www.centerforhealthsecurity.org/our-work/exercises/event201/
- 6. Pandemic simulation exercise spotlights massive preparedness gap. Event 201, hosted by the Johns Hopkins Center for Health Security, envisions a fast-spreading coronavirus with a devastating impact. Katie Pearce. HUB. November 6, 2019. https://hub.jhu.edu/2019/11/06/event-201-health-security/
- 7. Johns Hopkins Center for Health Security, World Economic Forum and Bill & Melinda Gates Foundation Host Pandemic Exercise. Bloomberg. October 16, 2019. https://www.bloomberg.com/press-releases/2019-10-16/johns-hopkins-center-for-health-security-world-economic-forum-and-bill-melinda-gates-foundation-host-pandemic-exercise-and
- 8. COVID-19 and the Unraveling of Experimental Medicine Part I. Thorp KE, Thorp JA, Thorp EM. G Med Sci. 2022; 3(1): 015-045
- 9. COVID-19 and the Unraveling of Experimental Medicine Part II. Thorp KE, Thorp JA, Thorp EM. G Med Sci. 2022; 3(1): 074-106
- 10. COVID-19 and the Unraveling of Experimental Medicine Part III. Thorp KE, Thorp JA, Thorp EM. G Med Sci. 2022; 3(1):118-58
- 11. Biden declares the COVID-19 pandemic over as experts keep wary eye on potential fall surge. Frank Diamond. Feirce Healthcare News. September 19, 2022. https://www.fiercehealthcare.com/payers/biden-declares-covid-19-pandemic-over



- 12. Influenza: The Last Great Plague. W.I.B. Beveridge publ. Prodist 1978 (p 38)
- 13. WHO Reverses Course, Now Advises Against Use of 'Punishing' Lockdowns. https://fee.org/articles/who-reverses-course-now-advises-against-use-of-punishing-lockdowns/
- 14. WHO Coronavirus Dashboard. World Health Organization. https://covid19.who.int/
- 15. Role of asymptomatic and pre-symptomatic infections in covid-19 pandemic. Gao W, Lv J, Pang Y, Li L-M. BMJ. 2021:375:n2342. https://www.bmj.com/content/375/bmj.n2342
- 16. Global Percentage of Asymptomatic SARS-CoV-2 Infections Among the Tested Population and Individuals With Confirmed COVID-19 Diagnosis: A Systematic Review and Meta-analysis. Ma Q, Liu J, Liu Q, et al. JAMA Netw Open 2021 Dec; 4(12):e2137257
- 17. Asymptomatic cases, the hidden challenge in predicting COVID-19 caseload increases. Snider B, Patel B, McBean E. Infect Dis Rep. 2021 Apr;13(2):340-47
- 18. Asymptomatic transmission of SARS-CoV-2 and implications for mass gatherings. Wong J, Jamaludin SA, Alikhan MF, Chaw L. Influenza Other Resp Viruses. 2020 Sep; 14(5):596-98
- 19. SARS-CoV-2 Transmission From People Without COVID-19 Symptoms. Johansson MA, Quandelacy TM, Kada S. JAMA Netw Open. 2021; 4(1):e2035057
- 20. Most COVID transmission is still asymptomatic. Some 60% of virus spread starts with those who have no symptoms. Jennifer Henderson. MedPage Today May 11, 2020 https://abcnews.go.com/Health/covid-transmission-asymptomatic/story?id=84599810
- 21. The Proportion of SARS-CoV-2 Infections That Are Asymptomatic: A systematic review. Oran DP, Topol EJ. Ann Intern Med. 2021 May; 174(9):1344-45
- 22. Asymptomatic coronavirus infections contribute to over 50% of spread, according to UChicago study. Mitch Anderson. UChicagoMedicine https://www.uchicagomedicine.org/forefront/coronavirus-infections-contribute-to-over-50-percent-of-spread
- 23. Internal CDC document on breakthrough infections. July 29,2021 https://www.washingtonpost.com/context/cdc-breakthrough-infections/94390e3a-5e45-44a5-ac40-2744e4e25f2e/
- 24. Increases in COVID-19 are unrelated to levels of vaccination across 68 countries and 2947 counties in the United States. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8481107/
- 25. Global COVID-19 pandemic outcomes: dissecting a failed strategy. Thorp JA, Thorp MM, Thorp EM, Scott-Emuakpor A, Thorp KE. Preprints 2022, 2022110480; doi: 10:20944/preprints202211.0480.v1



- 26. Most of the World's Vaccines Likely Won't Prevent Infection From Omicron. They do seem to offer significant protection against severe illness, but the consequences of rapidly spreading infection worry many public health experts. Stephanie Nolan. The New York Times. December 19, 2021. https://www.nytimes.com/2021/12/19/health/omicron-vaccines-efficacy.html?auth=login-google1tap&login=google1tap
- 27. Vaccine effectiveness of two-dose BNT162b2 against symptomatic and severe COVID-19 adolescents in Brazil and Scotland over time: a test-negative case-control study. Florentino PTV, Millington T, Cerqueira-Silva T, et al. Lancet Infect Dis. 2022 August; S1473-3099(22)00451-0 https://pubmed.ncbi.nlm.nih.gov/35952702/
- 28. Waning of vaccine effectiveness against moderate and severe covid-19 among adults in the US from the VISION network: test negative, case-control study. Ferdinands JM, Rao S, Dixon BE, et al. BMJ. 2022 Oct; 379. https://www.bmj.com/content/379/bmj-2022-072141
- 29. Waning effectiveness of the third dose of the BNT162b2 mRNA COVID-19 vaccine. Patalon T, Saciuk Y, Peretz A, et al. Nature Communications. 2022 Jun; 13:3203 https://www.nature.com/articles/s41467-022-30884-6
- 30. Study: Pfizer COVID vaccine efficacy wanes 27 days after dose 2 in teens. Mary Van Beusekorn. CIDRAP Center for Infectious Disease Research and Policy. August 9, 2022 https://www.cidrap.umn.edu/news-perspective/2022/08/study-pfizer-covid-vaccine-efficacy-wanes-27-days-after-dose-2-teens
- 31. COVID-19 vaccine effectiveness against the Omicron (B.1.1.529) variant. Andrews N, Stowe J, Kirsebom F, et al. NEJM. 2022 Apr; 386(16):1532-46 https://pubmed.ncbi.nlm.nih.gov/35249272/
- 32. COVID-19 vaccine surveillance report. Week 1 UK Health Security Agency. January 6, 2022 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1045329/Vaccine_surveillance_report_week_1_2022.pdf
- 33. Breakthrough infections after COVID-19 vaccination: Insights, perspectives and challenges. Amanatidou E, Gkiouliava A, Pella E, et al. Metabol Open 2022 Mar; 14:100180 https://pubmed.ncbi.nlm.nih.gov/35313532/
- 34. Reduced Neutralization of SARS-CoV-2 Omicron Variant by Vaccine Sera and monoclonal antibodies. Wilhelm A, Widera M, Grikscheit K, et al. MedRxiv. December 8, 2021 https://www.medrxiv.org/content/10.1101/2021.12.07.21267432v1
- 35. Decreased breadth of the antibody response to the spike protein of SARS-CoV-2 after repeated vaccination. Horndler L, Delgado P, Romero-Pinedo S, et al. medRxiv. 2022 Mar https://www.medrxiv.org/content/10.1101/2021.08.12.21261952v3
- 36. Effectiveness of COVID-19 vaccines against Omicron or Delta infection. Buchan SA, Chung H, Brown KA, et al. medRxiv. January 1, 2022 https://www.medrxiv.org/content/10.1101/2021.12.30.21268565v1



- 37. Vaccine effectiveness against SARS-CoV-2 infection with the Omicron or Delta variants following a two-dose or booster BNT162b2 or mRNA-1273 vaccination series: A Danish cohort study. Hansen CH, Schelde AB, Moustsen-Helm IR, et al. JAMA Research Letter https://www.medrxiv.org/content/10.1101/2021.12.20.21267966v3.full.pdf
- 38. Negative Vaccine Effectiveness Against Omicron: It Can Happen But Not Always Understanding what's really happening without cherry-picking studies. Yong SJ. Medium January 24, 2022 https://medium.com/microbial-instincts/negative-vaccine-effectiveness-against-omicron-it-can-happen-but-not-always-bc101c242c51
- 39. Negative vaccine efficacy: Dr. Paul Alexander sounds the alarm. The Desert Review. April 14, 2022. https://www.thedesertreview.com/opinion/columnists/negative-vaccine-efficacy---dr-paul-alexander-sounds-the-alarm/article_2226ec36-aeb6-11ec-8772-03a7ae44197e.html
- 40. Vaccination After SARS-CoV-2 Infection Increased Antibody Avidity Against the Omicron Variant Compared to Vaccination Alone. LeMaster C, Geanes ES, Fraley ES, et al. J Infect Dis. 2022 Jun 18; jiac247. https://pubmed.ncbi.nlm.nih.gov/35714328/
- 41. Abbott Laboratories 2021 Annual Report. https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_ABT_2021.pdf
- 42. Abbott's CEO pocketed nearly \$25 million last year. The payout came as the company's total net sales increased nearly 25%. Katherine Davis. Crain's Chicago Business. March 24, 2022 https://www.chicagobusiness.com/health-care/abbott-ceo-robert-ford-pocketed-nearly-25-million-last-year
- 43. WHO Director-General's opening remarks at the media briefing on COVID-19 16 March 2020. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---16-march-2020
- 44. Real-life clinical sensitivity of SARS-CoV-2 RT-PCR test in symptomatic patients. Kortela E., Kirjavainen V, Ahava MJ, et al. PLoS One. 2021 May; 16(5): e0251661
- 45. False-negative results of initial RT-PCR assays for COVID-19: a systematic review. Arevalo-Rodriguez I, Buitrago-Garcia D, Simancas-Racines D, et al. PLoS One. 2020;15(12): e0242958 https://pubmed.ncbi.nlm.nih.gov/33301459/
- 46. Estimate false-negative RT-PCR rates for SARS-CoV-2: a systematic review and meta-analysis. Pecoraro V, Negro A, Pirotti T, Trenti T. Eur J Ckin Invest. 2022 Feb;52(2): e13706
- 47. False-negative rate of COVID-19 PCR testing: a discordant testing analysis. Kanji JN, Zelyas N, MacDonald C, et al. Virol J 2021 Jan;18(1):13
- 48. The Appropriate Use of Testing for COVID-19. Zitek T. West J Emerg Med. 2020 Apr; 21(3):470-72
- 49. Analysis Finds List Prices for COVID-19 Tests Range from \$20 to \$850 At Large Hospitals Nationwide. Kaiser Family Foundation. July 15, 2020

 https://www.kff.org/health-costs/press-release/analysis-finds-list-prices-for-covid-19-tests-range-from-

https://www.kff.org/health-costs/press-release/analysis-finds-list-prices-for-covid-19-tests-range-from-20-to-850-at-large-hospitals-nationwide/



- 50. COViD-19 test prices and payment policy. Nisha Kurani, Karen Pollitz, Dustin Cotliar, Giorlando Ramirez, and Cynthia Cox. Peterson-KFF Health System Tracker. April 28, 2021 <a href="https://www.healthsystemtracker.org/brief/covid-19-test-prices-and-payment-policy/?utm_campaign=KFF-2020-Peterson&utm_medium=email&_hsmi=2&_hsenc=p2ANqtz-_C_22vS4MQo2b2VfKHPj5XQnxy6AjxIsQN8ivwzBkSx2xcMcuJVbwpVwOlzRFKVUPR7zlbW1lxhSe0S0zRy8YvIXI8TA&utm_cont
- 51. Colorimetric test for fast detection of SARS-CoV-2 in nasal and throat swabs. Della Ventura B, Cennamo M, Minopoli A, et al. ACS Sens. 2020 Oct; 5(10):3043-48
- 52. Upping the Ante on COVID-19 Antigen Testing: BinaxNOW: With a swab and a card, reliable coronavirus test results in 15 minutes. https://www.abbott.com/corpnewsroom/diagnostics-testing/upping-the-ante-on-COVID-19-antigen-testing.html
- 53. Rapid, point-of-care antigen tests for diagnosis of SARS-CoV-2 infection. Dinnes J, Sharma P, Berhane S, et al. Cochrane Database Syst Rev. 2022 Jul; 7(7):CD013705
- 54. Rapid coronavirus tests: a guide for the perplexed. Scientists still debate whether millions of cheap, fast diagnostic kits will help control the pandemic. Here's why. Georgia Guglielmi. Nature. February 9, 2021. https://www.nature.com/articles/d41586-021-00332-4
- 55. New blood tests for antibodies could show true scale of coronavirus pandemic. Large scale testing of populations should reveal those who cleared virus without knowing they were infected. Gretchen Vogel. Science. March 19, 2020 https://www.science.org/content/article/new-blood-tests-antibodies-could-show-true-scale-coronavirus-pandemic
- 56. COVID-19 Antibody Tests and Their Limitations. Liu G, Rusling JF. ACS Sens 2021 Mar;6(3):593-612
- 57. Benefits and limitations of serological assays in COVID-19 infection. Sidiq Z, Hanif M, Dwivedi KK, et al. J Tuberc. 2020 Dec; 67(4S):S163-S166
- 58. Total COVID-19 tests. Our World in Data. https://ourworldindata.org/grapher/full-list-total-tests-for-covid-19
- 59. COVID-19: Testing Information and News for Individuals, Healthcare Providers, Payers, and Organizations. https://www.labcorp.com/coronavirus-disease-covid-19
- 60. Backed by Millions in Public and Private Cash, Rapid Covid Tests Are Coming to Stores Near You. Hannah Norman. Kaiser Health News. April 1, 2021. https://khn.org/news/article/rapid-covid-tests-over-the-counter-marketing-public-private-investment/
- 61. States Begin Detailing Specific Use of 150 Million BinaxNOW COVID-19 Tests Distributed by Trump Administration. Scaling-Up Rapid Point of Care Testing Key to Protecting Seniors, Sustaining Ongoing State Reopening Efforts. Department of Health and Human Services https://www.hhs.gov/about/news/2020/10/25/states-begin-detailing-specific-use-150-million-binaxnow-covid-19-tests-distributed-trump-administration.html



- 62. Wall Street boosts lab companies amid Delta testing surge. Bob Herman. Axios. September 2, 2021. https://www.axios.com/2021/09/02/covid-19-tests-delta-surge-quest-labcorp-wall-street
- 63. Coronavirus testing is a windfall. Bob Herman. Axios. October 20, 2020 https://www.axios.com/2020/10/28/health-care-coronavirus-industry-labs-thermo-fisher-quest-labcorp
- 64. LabCorp, still riding the COVID-19 testing wave, exceeds its own expectations with \$4.2B Q1 revenue. Andrea Park. Fierce Biotech. April 29, 2021 https://www.fiercebiotech.com/medtech/labcorp-still-riding-covid-19-testing-wave-exceeds-its-own-expectations-4-2b-q1-revenue
- 65. LabCorp: https://ir.labcorp.com/news-releases/news-release-details/labcorp-announces-2021-fourth-quarter-and-full-year-results
- 66. Quest Diagnostics reports fourth quarter and full year 2021 financial results. Cision PR. Newswire. https://www.prnewswire.com/news-releases/quest-diagnostics-reports-fourth-quarter-and-full-year-2021-financial-results-provides-guidance-for-full-year-2022-increases-quarterly-dividend-6-5-to-0-66-per-share-301474330.html
- 67. Quest Diagnostics sees higher 2021 profit on COVID-19 testing surge. Reuters. January 12, 2022. https://www.reuters.com/business/healthcare-pharmaceuticals/quest-diagnostics-says-covid-19-testing-volumes-surge-omicron-spreads-2022-01-12/
- 68. The Real Anthony Fauci. Robert F. Kennedy Jr. Skyhorse Publishing. 2021.
- 69. Breakthrough: chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia. Gao J, Tian Z, Yang X. Biosci Trends. 2020;14(1):72-73
- 70. Diagnosis and Treatment Protocol for Novel Coronavirus Pneumonia (Trial Version 7). National Health Commission & National Administration of Traditional Chinese Medicine. Ed. Wei P-F. Chin Med J (Engl). 2020;133(9):1087-95
- 71. The pathophysiologic basis and clinical rationale for early ambulatory treatment of COVID-19. McCullough PA, Kelly RJ, Ruocco G, et al. Am J Med. 134(1):16-22
- 72. Multifaceted highly targeted sequential multidrug treatment of early ambulatory high-risk SARS-CoV-2 infection (COVID-19). McCullough PA, Alexander PE, Armstrong R, et al. Rev Cardiovasc Med. 2020; 21(4):517-530
- 73. The Real Anthony Fauci. Robert F. Kennedy Jr. Skyhorse Publishing. 2021. pg. 8
- 74. Aether, fields & energy dynamics in living bodies Part I. Thorp KE, Thorp JA, Walker PR. G Med Sci. 2021; 2(5): 014-025.
- 75. Aether, fields & energy dynamics in living bodies Part II. Thorp KE, Thorp JA, Walker PR. G Med Sci. 2021; 2(6): 001-020.



- 76. Aether, fields & energy dynamics in living bodies Part III. Thorp KE, Thorp JA, Walker PR G Med Sci. 2021; 2(6): 021-047.
- 77. The vascular endothelium: the cornerstone of organ dysfunction in severe SARS-CoV-2 infection. Pons S, Fodil S, Azoulay E, et al. Crit Care. 2020;24(1):353
- 78. Understanding COVID-19: in the end is it endothelium—what else? Lüscher TF. Eur Heart J 2020;41(32):3023-27
- 79. COVID-19 is, in the end, an endothelial disease. Libby P, Lüscher T. Eur Heart J. 2020; 41(32):3038-44
- 80. Endothelial dysfunction in COVID-19: lessons learned from coronaviruses. Gavriilaki E, Anyfanti P, Gavriilaki M, et al. Curr Hypertens Rep. 2020; 22(9):63
- 81. Endothelial dysfunction in COVID-19: a position paper of the ESC Working Group for Atherosclerosis and the ESC Council of Basic Cardiovascular Science. Evans PC, Rainger GE, Mason JC, et al. Cardiovasc Res 116(14):2177-84
- 82. Endothelial cells and SARs-CoV-2: an intimate relationship. Barbosa LC, Gonçalves TL, de Araujo LP, et al. Vasc Pharmacol. 2021; 137:106829
- 83. Endothelial dysfunction in COVID-19: current findings and therapeutic implications. Nägele MP, Haubner B, Tanner FC, et al. Atherosclerosis. 2020;314:58-62
- 84. COVID-19 and cardiovascular consequences: is the endothelial dysfunction the hardest challenge? Del Turco S, Vianello A, Ragusa R, et al. Thromb Res. 2020;196:143-51
- 85. Current and Future use of chloroquine and hydrochloroquine in infectious, immune, neoplastic and neurological diseases: a mini-review. Plantane D, Koudriavtseva. Clin Drug Invest 2018; 38(8): 653-71
- 86. Hydroxychloroquine in rheumatic autoimmune disorders and beyond. Nirk EL, Reggiori F, Mauthe M. EMBO Mol Med. 2020; 12(8): e12476
- 87. Therapy and pharmacological properties of hydroxychloroquine and chloroquine in treatment of systemic lupus erythematosus, rheumatoid arthritis and related diseases. Rainsford KD, Parke AL, Clifford-Rashotte M, Kean WF. Inflammopharmacology. 2015 Oct;23(5):231-69
- 88. Chronic hydroxychloroquine improves endothelial dysfunction and protects kidney in a mouse model of systemic lupus erythematosus. Gómez-Guzmán M, Jiménez R, Romero M, et al. Hypertension. 2014 Aug; 64(2):330-37
- 89. Hydroxychloroquine partially prevents endothelial dysfunction induced by anti-beta-2-GPI antibodies in an in vivo mouse model of antiphospholipid syndrome. Urbanski G, Caillon A, Poli C, et al. PLoS One. 2018 Nov; 13(11): e0206814



- 90. Effect of medication on microvascular vasodilation in patients with systemic lupus erythematosus. Bengtsson C, Andersson SE, Edvinsson L, et al. Basic Clin Pharmacol Toxicol 2010 Dec; 107(6):919-24
- 91. Endothelial function and arterial stiffness assessment as early surrogate markers of vascular risk in patients with systemic lupus erythematosus. Chin CW, Tan RS, Thumboo J. Clin Exp Rheumatol. 2013 Mar;31(2):295-301
- 92. Chronic hydroxychloroquine improves endothelial dysfunction and protects kidney in a mouse model of systemic lupus erythematosus. Gómez-Guzmán M, Jiménez R, Romero M, Sánchez M, et al. Hypertension. 2014 Aug;64(2):330-7
- 93. Early treatment with hydroxychloroquine prevents the development of endothelial dysfunction in a murine model of systemic lupus erythematosus. Virdis A, Tani C, Duranti E, Vagnani S, et al. Arthritis Res Ther. 2015 Oct 6;17:277
- 94. Chloroquine and hydroxychloroquine are associated with reduced cardiovascular risk: a systematic review and meta-analysis. Liu D, Li X, Zhang Y, Kwong J, Li L, et al. Drug Des Devel Ther. 2018 Jun 11;12:1685-1695
- 95. Chloroquine stimulates nitric oxide synthesis in murine, porcine, and human endothelial cells. Ghigo D, Aldieri E, Todde R, Costamagna C. J Clin Invest. 1998 Aug 1;102(3):595-605
- 96. Hypertension and impaired vascular function in a female mouse model of systemic lupus erythematosus. Ryan MJ, McLemore GR. Am J Physiol Regul Integr Comp Physiol. 2007 Feb; 292(2):R736-42
- 97. Use of hydroxychloroquine to prevent thrombosis in systemic lupus erythematosus and in antiphospholipid antibody-positive patients. Petri M. Curr Rheumatol Rep. 2011;13(1):77-80
- 98. In vivo chloroquine-induced inhibition of insulin degradation in a diabetic patient with severe insulin resistance. Blazar BR, Whitley CB, Kitabchi AE, Tsai MY, et al. Diabetes. 1984 Dec; 33(12):1133-7
- 99. The protective effect of antimalarial drugs on thrombovascular events in systemic lupus erythematosus. Jung H, Raja B, Su J, Shariati-Sarabi Z, et al. Arthritis Rheum. 2010 Mar; 62(3):863-8
- 100. Therapy and pharmacological properties of hydroxychloroquine and chloroquine in treatment of systemic lupus erythematosus, rheumatoid arthritis and related diseases Rainsford KD, Parke AL, Clifford-Rashotte M, et al. Inflammopharmacology 2015 Oct; 23(5):231-69
- 101. Hydroxychloroquine in decompensated, treatment-refractory noninsulin-dependent diabetes mellitus. A new job for an old drug? Quatraro A, Consoli G, Magno M, Caretta F. Ann Intern Med 1990; 112(9): 678-81
- 102. Potential Effect of Hydroxychloroquine in Diabetes Mellitus: A Systematic Review on Preclinical and Clinical Trial Studies. Wondafrash DZ, Desalegn TZ, Yimer EM, et al. J Diabetes Res. 2020 Feb 27;2020:5214751



- 103. Cholesterol-lowering effect of hydroxychloroquine in patients with rheumatic disease: reversal of deleterious effects of steroids on lipids. Wallace DJ, Metzger AL, Stecher VJ, et al. Am J Med. 1990 Sep;89(3):322-6
- 104. Chloroquine & Hydroxychloroquine equally affect tumor necrosis factor-Alpha, interleukin 6 & interferon-Gamma production by peripheral blood mononuclear cells. Van den Borne BEEM, Dijkmans BAC, De Rooij HH. J Rheumatol. 1997
- 105. Chloroquine inhibits processing of tumor necrosis factor in lipopolysaccharide-stimulated RAW 264.7 macrophages. Jeong JY, Jue DM. J Immunol. 1997 May 15; 158(10):4901-7
- 106. Chloroquine inhibits production of TNF-alpha, IL-1beta and IL-6 from lipopolysaccharidestimulated human monocytes/macrophages by different modes. Jang C-H, Choi J-H, Byun M-S, Jue D-M. Rheumatology (Oxford). 2006 Jun;45(6):703-10
- 107. Killing of Escherichia coli by Crohn's Disease Monocyte-derived Macrophages and Its Enhancement by Hydroxychloroquine and Vitamin D. Flanagan PK, Chiewchengchol D, Wright H, Edwards SW. Inflamm Bowel Dis. 2015 Jul;21(7):1499-510
- 108. Chloroquine inhibits tumor necrosis factor production by human macrophages in vitro. Picot S, Peyron F, Vuillez JP, Polack B, Ambroise-Thomas P. J Infect Dis. 1991 164: 830
- 109. Chloroquine and hydroxychloroquine equally affect tumor necrosis factor-a, interleukin 6, and interferon-c production by peripheral blood mononuclear cells. Van Den Borne BEEM, Dijkmans BAC, De Rooij HH, Le Cessie S, Verweij CL. J Rheumatol 1997; 24: 55 60
- 110. Mechanism of action of antimalarial drugs: inhibition of antigen processing and presentation. Fox RI, Kang HI. Lupus. 1993 Feb;2 Suppl 1:S9-12
- 111. Autophagy inhibitors. Pasquier B. Cell Mol Life Sci. 2016 Mar;73(5):985-1001
- 112. Mechanisms of action of hydroxychloroquine and chloroquine: implications for rheumatology. Schrezenmeier E, Dörner T. Nat Rev Rheumatol. 2020 Mar;16(3):155-166
- 113. Antimalarials. Koranda FC. J Am Acad Dermatol. 1981 Jun;4(6):650-55
- 114. Chloroquine autophagic inhibition rebalances Th17/Treg-mediated immunity and ameliorates systemic lupus erythematosus. An N, Chen Y, Wang C, et al. Cell Physiol Biochem 2017; 44(1): 412-22
- 115. Hydroxychloroquine inhibits the differentiation of Th17 cells in systemic lupus erythematosus. Yang J, Yang X, Yang J, Li M. J Rheumatol 2018 Jun; 45(6):818-26
- 116. Ivermectin as a broad-spectrum host-directed antiviral: the real deal? Jans DA, Wagstaff KM. Cells. 2020 Sep;9(9):2100
- 117. Ivermectin Old Drug, New Tricks? Laing R, Gillan V, Devaney E. Trends Parasitol. 2017 Jun; 33(6):463-72



- 118. Evaluation of cytotoxicity and antiviral activity of ivermectin against Newcastle disease virus. Azeem S, Ashraf M, Raseed MA, et al. Pak J Pharm Sci 2015 Mar; 28(2):597-602
- 119. Ivermectin is a specific inhibitor of importin α/β -mediated nuclear import able to inhibit replication of HIV-1 and dengue virus. Wagstaff KM, Sivakumaran H, Heaton SM, et al. 2012 May;443(3):851-56
- 120. Ivermectin inhibits porcine reproductive and respiratory syndrome virus in cultured porcine alveolar macrophages. Lee YJ, Lee C. Arch Virol. 2016 Feb; 161(2):257-68
- 121. The FDA-approved drug ivermectin inhibits the replication of SARS-CoV-2 in vitro. Caly L, Druce JD, Catton MG, et al. Antiviral Res. 2020 Jun; 178:104787
- 122. Discovery of berberine, abamectin and ivermectin as antivirals against chikungunya and other alphaviruses. Varghese FS, Kaukinen P, Gläsker S, et al. Antiviral Res. 2016 Feb; 126:117-24
- 123. Ivermectin is a specific inhibitor of importin α/β -mediated nuclear import able to inhibit replication of HIV-1 and dengue virus. Wagstaff KM, Sivakumaran H, Heaton SM, et al. Biochem J. 2012 May; 443(3):851-56
- 124. Nuclear localization of dengue virus (DENV) 1-4 non-structural protein 5; protection against all 4 DENV serotypes by the inhibitor Ivermectin. Tay MY, Fraser JE, Chan WK, et al. Antiviral Res. 2013 Sep; 99(3):301-06
- 125. Ivermectin inhibits DNA polymerase UL42 of pseudorabies virus entrance into the nucleus and proliferation of the virus in vitro and vivo. Lv C, Liu W, Wang B, et al. Antiviral Res. 2018 Nov; 159:55-62
- 126. Ivermectin is a potent inhibitor of flavivirus replication specifically targeting NS3 helicase activity: new prospects for an old drug. Mastrangelo E, Pezzullo M, De Burghgraeve T, et al. J Antimicrobe Chemother. 2012 Aug; 67(8):1884-94
- 127. Ivermectin: an award-winning drug with expected antiviral activity against COVID-19. Formiga FR, Leblanc R, de Souza Reboucas J, et al. Control Release. 2021 Jan; 329:758-61
- 128. Inhibition of human adenovirus replication by the importin $\alpha/\beta 1$ nuclear import inhibitor ivermectin. King CR, Tessier TM, Dodge MJ, et al. J Virol 2020 Aug; 94(18):e00710-20
- 129. Nuclear import and export inhibitors alter capsid protein distribution in mammalian cells and reduce Venezuelan Equine Encephalitis Virus replication. Lundberg L, Pinkham C, Baer A, et al. Antiviral Res. 2013 Dec; 100(3):662-72
- 130. Antivirals that target the host IMP $\alpha/\beta 1$ -virus interface. Martin AJ, Jans DA. Biochem Soc Trans. 2021 Feb; 49(1):281-95
- 131. Ion channel protein superfamily. Caterall WA. Encyclopedia of Biological Chemistry. 2013 https://www.sciencedirect.com/topics/neuroscience/inwardly-rectifying-potassium-channel



- 132. Ivermectin: enigmatic multifaceted 'wonder' drug continues to surprise and exceed expectations. Crump A. Antibiot (Tokyo). 2017 May;70(5):495-505
- 133. Allosteric modulation of ligand gated ion channels by ivermectin. Zemkova H, Tvrdonova V, Bhattacharya A, et al. Physiol Res. 2014; 63(suppl 1):S215-24
- 134. A novel small-molecule selective activator of homomeric GIRK4 channels. Cui M, Xu K, Gada KD, et al. J Biol Chem. 2022 Jun; 298(6):102009
- 135. Hydrogen-bonding dynamics between adjacent blades in G-protein beta-subunit regulates GIRK channel activation. Mirshahi T, Logothetis DE, Rosenhouse-Dantsker A. 2006 Apr; 90(8):2776-85
- 136. Ivermectin and its target molecules: shared and unique modulation mechanisms of ion channels and receptors by ivermectin. Chen IS, Kubo Y. J Physiol. 2018 May; 596(10):1833-45
- 137. Ivermectin activates GIRK channels in a PIP₂-dependent, $G_{\beta\gamma}$ -independent manner and an amino acid residue at the slide helix governs the activation. Chen IS, Tateyama M, Fukata Y, et al. J Physiol. 2017 Sep; 595(17):5895-912
- 138. Biological Effects of Sunlight, Ultraviolet Radiation, Visible Light, Infrared Radiation and Vitamin D for Health. Holick MF. Anticancer Res. 2016 Mar;36(3):1345-56
- 139. Ultraviolet B Radiation: The Vitamin D Connection. Holick MF. Adv Exp Med Biol 2017; 996:137-154
- 140. Vitamin D, Cod Liver Oil, Sunshine & Phototherapy: Safe, Effective & Forgotten Tools for Treating & Curing Tuberculosis Infections—A Comprehensive Review. McCulloch PJ & Lehrer DS. J Steroid Biochem& Mol Biol. 2017
- 141. Solar ultraviolet radiation and vitamin D: a historical perspective. Rajakumar K, Greenspan SL, Thomas SB, Holick MF. Am J Pub Health. 2007 Oct; 97(10):pp. 1746-54
- 142. Sun exposure rapidly reduces plasmacytoid dendritic cells and inflammatory dermal dendritic cells in psoriatic skin. Heier I, Søyland E, Krogstad AL, et al. Br J Dermatol Oct; 165(4):792-801
- 143. Sun exposure induces rapid immunological changes in skin and peripheral blood in patients with psoriasis. Søyland E, Heier I, Rodríguez-Gallego C, et al. Br J Dermatol Feb; 164(2):344-55
- 144. Effects of ultraviolet light on human serum 25-hydroxyvitamin D and systemic immune function. Milliken SV, Wassall H, Lewis BJ, Logie J, Barker RN, Macdonald H, Vickers MA, Ormerod AD. J Allergy Clin Immunol. 2012 Jun;129(6):1554-61
- 145. Effects of ultraviolet light on human serum 25-hydroxyvitamin D and systemic immune function. Milliken SV, Wassall H, Lewis BJ, Logie J, Barker RN, Macdonald H, Vickers MA, Ormerod AD. J Allergy Clin Immunol. 2012 Jun;129(6):1554-61
- 146. Vitamin D and the immune system: new perspectives on an old theme. Hewison M. Endocrinol Metab Clin North Am. 2010 Jun;39(2):365-79



- 147. The vitamin D deficiency pandemic: approaches for diagnosis, treatment and prevention. Holick MF. Rev Endocr Metab Disord. 2017 Jun; 18(2):153-85
- 148. Vitamin D and autoimmune diseases. Illescas-Montes R, Melguizo-Rodríguez L,Ruiz C, Costela-Ruiz VJ. Life Sci. 2019 Sep 15;233:116744
- 149. Hypovitaminosis D association with disease activity in relapsing remitting multiple sclerosis in Brazil. Becker J, Callegaro D, Lana-Peixoto MA, Talim N, et al. J Neurol Sci. 2016 Apr 15;363:236-9
- 150. 25-Hydroxyvitamin D levels in serum at the onset of multiple sclerosis. Soilu-Hänninen M, Mononen AI, Heikilä A, Viljanen M, Hänninen A. Mult Scler. 2005 Jun;11(3):266-71
- 151. A low vitamin D status at diagnosis is associated with an early conversion to secondary progressive multiple sclerosis. Muris A-H, Rolf L, Broen K, Hupperts R, et al. J Steroid Biochem Mol Biol. 2016 Nov;164:254-257
- 152. Vitamin D and systemic lupus erythematous: a review. Clin Exp Rheumatol. Jan-Feb 2018; 36(1):153-162
- 153. Vitamin D in lupus new kid on the block? Kammen DL. Bull NYU Hosp Jt Dis. 2010; 68(3):218-22
- 154. Vitamin D and systemic lupus erythematosus: state of the art. Schneider L, Dos Santos ASP, Santos M, da Silva RM, et al. Clin Rheumatol. 2014 Aug;33(8):1033-38
- 155. Low levels of 25-hydroxyvitamin D in children and adolescents with type 1 diabetes mellitus: a single center experience. Bae KN, Nam H-K, Rhie Y-J, Song DJ, et al. Ann Pediatr Endocrinol Metab. 2018 Mar;23(1):21-27
- 156. Vitamin D and inflammatory bowel disease. Ardesia M, Ferlazzo G, Fries W. Biomed Res Int 2015;2015:470805
- 157. Vitamin D and Crohn's disease in the adult patient: a review. Basson A, JPEN J. Parenter Enteral Nutr. 2014 May;38(4):438-58.
- 158. Vitamin D levels and the risk of type I diabetes: a Mendelian randomization study. Manousaki D, Harroud A, Mitchell RE, et al. PLoS Med. 2021 Feb; 18(2):e1003536
- 159. Immunologic effects of vitamin D on human health and disease. Charoenngam N, Holick MF. Nutrients. 2020 Jul; 12(7):2097
- 160. Vitamin D deficiency and diabetes. Berridge MJ. Biochem J. 2017 Mar; 474(8):1321-32
- 161. Vitamin D deficiency among newly diagnosed tuberculosis patients and their household contacts: a comparative cross-sectional study. Workineh M, Mathewos B, Moges B, Gize A, Getie S, Stendahl O, Schon T, Abate E. Arch Pub Health. 2017. Jun 19;75:25
- 162. The role of vitamin D in reducing cancer risk and progression. Feldman D, Krishnan AV, Swami S, et al. J Nat Rev Cancer. 2014 May;14(5):342-57



- 163. Vitamin D baseline levels at diagnosis of breast cancer: a systematic review and meta-analysis. Voutsadakis IA. Oncol Stem Cell Ther. 2021 Mar; 14(1):16-26
- 164. Vitamin D—its bactericidal action. Raab W. Chest. 1946: pp. 409-415
- 165. Cutting edge: 1,25-dihydroxyvitamin D3 is a direct inducer of antimicrobial peptide gene expression. Wang TT, Nestel FP, Bourdeau V, Nagai Y, Wang Q, Liao J, Tavera-Mendoza L, Lin R, Hanrahan JW, Mader S, White JH. J Immunol. 2004: 173(5):2909-12
- 166. Toll-like receptor triggering of a Vitamin D-mediated Human Antimicrobial Response. Liu PT, Stenger S, et al. 2006: Science 311: 177
- 167. The activation of the cytochrome P-450 dependent monooxygenase system by light. Müller-Enoch D, Gruler H. Z Naturforsch C 1986 May-Jun;41(5-6):604-12
- 168. Light-induced activation and synchronization of the cytochrome P-450 dependent monooxygenase system. Häberle W, Gruler H, Dutkowski P, Müller-Enoch D. Z Naturforsch C. 1990 Mar-Apr;45(3-4):273-9
- 169. Light-driven biocatalysis with cytochrome P450 peroxygenases. Girhard M, Kunigk E, Tihovsky S, Shumyantseva VV, Urlacher VB. Biotechnol Appl Biochem. 2013 Jan-Feb; 60(1): 111-18
- 170. Slaving the cytochrome P-450 dependent monooxygenase system by periodically applied light pulses. Gruler H, Müller-Enoch D. Eur Biophys J. 1991; 19(4): 217-19
- 171. Vitamin D Receptor: New Assignments for an Already Busy Receptor. Norman AW. Endocrinology. 2006; vol 147: pp. 5542-5548
- 172. Preconditioning with ischemia: a delay of lethal cell injury in ischemic myocardium. Murry CE, Jennings RB, Reimer KA. Circulation. 1986 Nov;74(5):1124-36
- 173. Ischemic preconditioning reduces infarct size in swine myocardium. Schott RJ, Rohmann S, Braun ER, Schaper W. Circ Res. 1990 Apr;66(4):1133-42
- 174. Effect of preconditioning ischemia on reperfusion arrhythmias after coronary artery occlusion and reperfusion in the rat. Hagar JM, Hale SL, Kloner RA. Circ Res. 1991 Jan;68(1):61-8
- 175. Preconditioning myocardium with ischemia. Jennings RB, Murry CE, Reimer KA. Cardiovasc Drugs Ther. 1991 Oct;5(5):933-8
- 176. Blockade of ATP-sensitive potassium channels prevents myocardial preconditioning in dogs. Gross GJ, Auchampach JA. Circ Res. 1992 Feb;70(2):223-33
- 177. Ischemic preconditioning attenuates acidosis and postischemic dysfunction in isolated rat heart. Asimakis GK, Inners-McBride K, Medellin G, Conti VR. Am J Physiol. 1992 Sep;263 (3 Pt 7):H887-94
- 178. Ischemic preconditioning protects against coronary endothelial dysfunction induced by ischemia and reperfusion. Richard V, Kaeffer N, Tron C, et al. Circulation 1994 Mar;89(3):1254-61



- 179. Reimer KA, Heide RSV, Jennings RB. Ischemic Preconditioning Slows Ischemic Metabolism and Limits Myocardial Infarct Size. Ann NY Acad Sci. 1994 Jun;723(1):99-115
- 180. Parratt J, Vegh A, Cardiosci. Pronounced antiarrhythmic effects of ischemic preconditioning. 1994 Mar;5(1):9-18
- 181. Gürke L, Marx A, Sutter PM et al. Ischemic preconditioning improves postischemic function, but not energy metabolism of skeletal muscles. Swiss Surg. 1995;(2):107-9
- 182. Finegan BA, Lopaschuk GD, Gandhi M, Clanachan AS. Ischemic preconditioning inhibits glycolysis and proton production in isolated working rat hearts. Am J Physiol.1995 Nov;269(5 Pt 2):H1767-75
- 183. Przyklenk K, Bauer B, Ovize M, Kloner RA, Whittaker P. Regional ischemic 'preconditioning' protects remote virgin myocardium from subsequent sustained coronary occlusion. Circulation. 1993 Mar;87(3):893-9
- 184. Ozone and oxidation therapies as a solution to the emerging crisis in infectious disease management: a review of current knowledge and experience. Rowen RJ. Med Gas Res. 2019(4); 232–237
- 185. Ozone Preconditioning in Viral Disease. Thorp JA, Thorp KE, Thorp EM, Viglione DD. Virol Curr Res. 2022;6:S1
- 186. Ozone therapy for the treatment of COVID-19 pneumonia: A scoping review. Izadi M, Cegolon L, Javanbakht M, Sarafzadeh A, et al. Int Immunopharmacol. 2021.Mar;92:107307
- 187. A plausible "penny" costing effective treatment for corona virus- ozone therapy. Rowen RJ, Robins H. J Infect Dis Epidemiol. 6:113
- 188. A preliminary evaluation on the efficacy of ozone therapy in the treatment of COVID-19. Zheng Z, Dong M, Hu K. J Med Virol. 2020 Nov; 92(11):2348-2350. doi: 10.1002/jmv.26040
- 189. Safety and efficacy of ozone therapy in mild to moderate COVID-19 patients: A phase 1/11 randomized control trial (SEOT study). Shah M, Captain J, Vaidya V, et al. Int Immunopharmacol 2021.91:107301
- 190. Ozone therapy for patients with COVID-19 pneumonia: Preliminary report of a prospective case-control study. Hernández A, Viñals M, Pablos A, et al. Int Immunopharmacol. 2021 Jan; 90:107261. doi: 10.1016/j.intimp.2020.107261
- 191. Virucidal effect of ozone treatment of laboratory animal viruses. Sato H, Wananabe Y, Miyata H. Jikken Dobutsu. 1990 Apr;39(2):223-9
- 192. Inactivation of murine norovirus and hepatitis A virus on fresh raspberries by gaseous ozone treatment. Brié A, Boudaud N, Mssihid A, et al. Food Microbiol 2018 Apr;70:1-6



- 193. Novel therapy for COVID-19 does intravenous ozonated-saline affect blood and tissue oxygenation? Thorp JA, Hollonbeck SA, Viglione DD et al. J Gynecol Res Obstet. 2020; 6(2): 046-050. DOI: https://dx.doi.org/10.17352/jgro.000085
- 194. Ameliorative effect of ozone on cytokine production in mice injected with human rheumatoid arthritis synovial fibroblast cells. Chang JD, Lu HS, Chang YF, et al. Rheumatol Int. 2005 Dec;26(2):142-51
- 195. The effect of different concentrations of of ozone on the level of TNF-alpha, TNF-R1, and TNF-R2 in rats with rheumatoid arthritis. Chen H, Yu B, Lu C, et al. Rheumatol Int. 2013 May;33(5):1223-7
- 196. Anti-inflammatory effect of ozone therapy in an experimental model of rheumatoid arthritis. Tartari APS, Moreira FF, Pereira MCDS, et al. Inflammation. 2020 Jun;43(3):985-993
- 197. Ozone therapy attenuates NF-kB-mediated local inflammatory response and activation of Th17 ceolls in treatment for psoriasis. Zeng J, Lei L, Zeng Q, et al. Int J Biol Sci. 2020 Apr 6;16(11):1833-1845
- 198. Remission of aggressive autoimmune disease (dermatomyositis) with removal of infective jaw pathology and ozone therapy: review and case report. Rowen RJ. Autoimmunity Highlights (2018) 9:7 https://doi.org/10.1007/s13317-018-0107-z
- 199. Ozone therapy attenuates NF-kB-mediated local inflammatory response and activation of Th17 ceolls in treatment for psoriasis. Zeng J, Lei L, Zeng Q, et al. Int J Biol Sci. 2020 Apr. 16(11);1833-1845
- 200. Anti-inflammatory effect of ozone therapy in an experimental model of rheumatoid arthritis. Tartari APS, Moreira FF, Pereira MCDS, et al. Inflammation 2020 Jun. 43(3);985-993
- 201. Medical ozone increases methotrexate clinical response and improves cellular redox balance in patients with rheumatoid arthritis. León Fernández OS, Viebahn-Haensler R, Cabreja GL, et al. Eur J Pharmacol. 2016 Oct 15;789:313-318
- 202. Ozone: A Multifaceted Molecule with Unexpected Therapeutic Activity. Zanardi I, Borrelli E, Valacchi G, et al. Curr Med Chem. 2016;23(4):304-14
- 203. Changes in Th17 cells frequency and function after ozone therapy used to treat multiple sclerosis patients. Dadashpour M, Yousefi M, Ahmadi M. Mult Scler Relat Disord. 2020 Nov;46:102466. doi: 10.1016/j.msard.2020.102466. Epub 2020 Aug 24. PMID: 32862036
- 204. Validity of Oxygen-Ozone Therapy as Integrated Medication Form in Chronic Inflammatory Diseases. Bocci V, Zanardia I, Valacchi G, et al. Cardiovasc Hematol Disord Drug Targets. 2015;15(2):127-38. doi: 10.2174/1871529x1502151209114642. PMID: 26126818
- 205. One year in review 2020: fibromyalgia. Bazzichi L, Giacomelli C, Consensi A, et al. Clin Exp Rheumatol. 2020 Jan-Feb;38 Suppl 123(1):3-8. Epub 2020 Feb 21. PMID: 32116216
- 206. Ozone therapy in 65 patients with fibromyalgia: an effective therapy. Tirelli U, Cirrito C, Pavanello M, et al. Eur Rev Med Pharmacol Sci. 2019; 23:1786–1788



- 207. Ozone therapy in 65 patients with fibromyalgia: An effective therapy. Tirelli U, Cirrito C, Pavanello M, et al. Eur Rev Med Pharmacol Sci. 2019; 23;1786–1788
- 208. Ozone Inhibits APP/A β Production and Improves Cognition in an APP/PS1 Transgenic Mouse Model. Lin SY, Ma J, An JX, et al. Neuroscience. 2019 Oct 15;418:110-121
- 209. Ozone: a natural bioactive molecule with antioxidant property as potential new strategy in aging and in neurodegenerative disorders. Cassellati C, Galoforo AC, Bonvicini C, et al. Ageing Res Rev. 2020 Nov;63:101138
- 210. Protective Effects of Ozone Oxidative Postconditioning on Long-term Injury After Renal Ischemia/Reperfusion in Rat. Jiang B, Su Y, Chen Q, et al. Transplant Proc 2020 Jan-Feb; 52(1):365-372
- 211. Ozone oxidative postconditioning inhibits oxidative stress and apoptosis in renal ischemia and reperfusion injury through inhibition of MAPK signaling pathway. Wang L, Chen Z, Liu Y, et al. Drug Des Devel Ther. 2018 May 21; 12:1293-1301
- 212. Targeting and inflammation in chronic kidney disease. Ruiz S, Pergola PE, Zager RA, Vaziri ND. Kidney Int. 2013. 83;1029-1041
- 213. Ozone postconditioning in renal ischaemia-reperfusion model. Functional and morphological evidences. Fernández Iglesias A, González Núñez L, Calunga Fernández JL, et al. Nefrologia. 2011. 31(4);464-70
- 214. Effect of medical ozone therapy on renal blood flow and renal function of patients with chronic severe hepatitis. Gu XB, Yang XJ, Zhu HY, et al. Chin Med J (Engl) 2010 Sep;123(18):2510-3
- 215. Effects of medical ozone therapy on acetaminophen-induced nephrotoxicity in rats. Demirbag S, Uysal B, Guven A, et al. Ren Fail. 2010 May. 32(4):493-7
- 216. Ozone oxidative post-conditioning in acute renal failure. Calunga JL, Trujillo Y, Menéndez S, et al. J Pharm Pharmacol. 2009 Feb;61(2):221-7
- 217. Improvement of renal oxidative stress markers after ozone administration in diabetic nephropathy in rats. Morsy MD, Hassan WN, Zalat SI. Diabetol Metab Synd. 2010; 2: 29–35
- 218. Preliminary results of ozone therapy as a possible treatment for patients with chronic hepatitis C. Zaky S, Kamel SE, Hassan MS, et al. J Altern Complement Med. 2011 Mar;17(3):259-63
- 219. Effects of ozone treatment on the infectivity of hepatitis A virus. Vaughn JM, Chen YS, Novotny JF, et al. Can J Microbiol. 1990 Aug;36(8):557-60
- 220. Combined treatment including ozonotherapy of patients with viral hepatitis. Chernyshev AL, Filimonov RM, Karasev AV, et al. Vopr Kurortol Fizioter Lech Fiz Kult. 2008 May-Jun;(3):19-22
- 221. Clinical study of medical ozone therapy in chronic hepatitis B of 20 patients. Jiao XJ, Peng X. Zhonghua Shi Yan He Lin Chuang Bing Du Xue Za Zhi. 2008 Dec;22(6):484-5



- 222. The effect of rectal ozone on the portal vein oxygenation and pharmacokinetics of propranolol in liver cirrhosis (a preliminary human study). Zaky S, Fouad EA, Kotb HI. Br J Clin Pharmacol. 2011 Mar;71(3):411-5
- 223. The Role of Ozone Therapy in Hepatic Fibrosis due to Biliary Tract Obstruction. Kocaman H, Erginel B, Onder SY, et al. Eur J Pediatr Surg. 2016 Feb;26(1):133-7
- 224. Oxygen/ozone protects the heart from acute myocardial infarction through local increase of eNOS activity and endothelial progenitor cells recruitment. Di Filippo C, Luongo M, Marfella R, Ferraraccio F, et al. Naunyn Schmiedebergs Arch Pharmacol. 2010 Sep;382(3):287-91
- 225. Beneficial Effects of Ozone Therapy on Oxidative Stress, Cardiac Functions and Clinical Findings in Patients with Heart Failure Reduced Ejection Fraction. Buyuklu M., Kandemir, F.M., Set T, et al. Cardiovasc Toxicol 2017; 17: 426–433
- 226. Ozone: A Multifaceted Molecule with Unexpected Therapeutic Activity. Zanardi I, Borrelli E, Valacchi G, et al. Curr Med Chem. 2016;23(4):304-14
- 227. Oxidative stress-induced mitochondrial dysfunction drives inflammation and airway smooth muscle remodeling in patients with chronic obstructive pulmonary disease. Weigman CH, Michaeloudes C, Haji G, et al. J Allergy Clin Immunol. 2015 Sep;136(3):769-80
- 228. Ozone therapy for diabetic foot. Kushmakov R, Gandhi J, Seyam O, et al. Med Gas Res 2018. Sep 25;8(3):111-115
- 229. An Overview of Ozone Therapy for Treating Foot Ulcers in Patients With Diabetes. Wen Q, Chen Q. Am J Med Sci. 2020 Aug;360(2):112-119
- 230. Increased growth factors play a role in wound healing promoted by noninvasive oxygen-ozone therapy in diabetic patients with foot ulcers. Zhang J, Guan M, Xie C, Luo X, et al. Oxid Med Cell. Longev. 2014;2014:273475
- 231. Therapeutic efficacy of ozone in patients with diabetic foot. Martinez-Sanchez G, Al-Dalain SM, Menendez S, Re L, et al. Eur J Pharmacol. 2005; 523:151-161
- 232. Efficacy of ozone-oxygen therapy for the treatment of diabetic foot ulcers. Wainstein J, Feldbrin Z, Boaz M, Harman-Boehm I. Diabetes Technol Ther. 2011 Dec.13(12):1255-60
- 233. Diabetes and chronic oxidative stress. A perspective based on the possible usefulness of ozone therapy. Bocci V, Zanardi I, Huijberts MSP, et al. Diabetes Metab Syndr. 2011; 5(1):45-9
- 234. Ozonated Oils and Cutaneous Wound Healing. Lim Y, Lee H, Woodby B, Valacchi G. Curr Pharm Des. 2019; 25(20):2264-2278
- 235. Therapeutic efficacy of ozone in patients with diabetic foot. Martínez-Sánchez G, Saied M, Menendez S, et al. Euro J Pharm. 2005:523(1-3):151-161



- 236. The effect of ozone therapy on experimental vasospasm in the rat femoral artery. Orakdogen M, Uslu S, Emon ST et al Turk Neurosurg 2016. 26;860-865
- 237. Non-invasive Oxygen-Ozone therapy in treating digital ulcers of patients with systemic sclerosis. Hassanien M, Rashad S, Mohamed N, et al. Acta Reumatol Port. 2018. Jul-Sep;43(3):210-216
- 238. Efficacy of different methods of ozone therapy in vascular complications of diabetes mellitus. Kulikov AG, Turova EA, Shcherbina TM, Kisileva OM. Vopr Kurortol Fizioter Lech Fiz Kult. 2002;(5):17-20
- 239. Effect of ozone on vascular endothelial growth factor (VEGF) and related inflammatory cytokines in rats with diabetic retinopathy. Xie TY, Yan W, Lou J, Chen XY. Genet Mol Res. 2016 May 13;15(2)
- 240. Ozone therapy for the treatment of chronic wounds: A systematic review. Fitzpatrick E, Holland OJ, Vanderlelie JJ. Int Wound J 2018; 15;633–644
- 241. Ozone and ozonated oils in skin diseases: a review. Travagli V, Zanardi I, Valacchi G, et al. Mediators Inflamm. Article ID 610418. 2010
- 242. Ozonated Aloe vera Oil Effective Increased the Number of Fibroblasts and Collagen Thickening in the Healing Response of Full-Thickness Skin Defects. Taqwim Hidayat A, Thohar Arifin M, Nur M. Int J Inflam. Feb; 2021
- 243. Ozonated sesame oil enhances cutaneous wound healing in SKH1 mice. Valacchi G, Lim Y, Belmonte G, et al. Wound Repair Regen. 2011 Jan-Feb. 19(1);107-15
- 244. Therapeutic effects of topical application of ozone on acute cutaneous wound healing. Kim HS, Noh SU, Han YW, et al. J Korean Med Sci. 2009; 24: 368–374
- 245. Comparison between intra-articular ozone and placebo in the treatment of knee osteoarthritis: A randomized, double-blinded, placebo-controlled study. Lopes de Jesus CC, Dos Santos FC, de Jesus LMOB, et al. PLoS One 2017; 12; e0179185
- 246. Ozone therapy for low back pain. A systematic review. Costa T, Linhares D, Ribeiro da Silva M, Nuno Neves N. Acta Reumatol Port. Jul-Sep 2018;43(3):172-181
- 247. A single subcutaneous injection of ozone prevents allodynia and decreases the over-expression of pro-inflammatory caspases in the orbito-frontal cortex of neuropathic mice. Fuccio C, Luongo C, Capodanno P, et al. Eur J Pharmacol. 2008;603:42–49
- 248. Clinical utility of ozone therapy for musculoskeletal disorders. Seyam O, Smith NL, Reid I, Gandhi J, et al. Med Gas Res. 2018(8):103–110
- 249. Ozone therapy as a treatment for low back pain secondary to herniated disc: A systematic review and meta-analysis of randomized controlled trials. Magalhaes, FN, Dotta, L., Sasse, A, et al. Pain Physician. 2012, 15, E115–E129
- 250. Ozone Therapy for Complex Regional Pain Syndrome: Review and Case Report. Rowen RJ, Robins H. Curr Pain Headache Rep. 2019;23: 41 (2019)



- 251. Oxygen-Ozone Therapy in the Rehabilitation Field: State of the Art on Mechanisms of Action, Safety and Effectiveness in Patients with Musculoskeletal Disorders. de Sire A, Agostini F, Lippi L, et al. Biomolecules. 2021 Feb 26. 11(3);356
- 252. Intramuscular oxygen-ozone therapy in the treatment of acute back pain with lumbar disc herniation: A multicenter, randomized, double-blind, clinical trial of active and simulated lumbar paravertebral injection. Paoloni M, Di Sante L, Cacchio A, et al. Spine. 2009.34;1337–1344
- 253. A randomized control trial of comparing ultrasound-guided ozone (O2 -O3) vs. corticosteroid injection in patients with shoulder impingement. Babaei-Ghazani A, Fadavi HR, Eftekharsadat B, et al. Am J Phys Med Rehabil. 2019, 98, 1018–1025
- 254. Short-Term Therapeutic Effects of Ozone in the Management of Pain in Knee Osteoarthritis: A Meta-Analysis. Arias-Vázquez PI, Tovilla-Zárate, CA Hernández-Díaz Y, et al. PMR. 2019, 11, 879–887
- 255. Intra-articular ozone therapy efficiently attenuates pain in knee osteoarthritic subjects: A systematic review and meta-analysis. Noori-Zadeh A, Bakhtiyari S, Khooz R, et al. Complement. Ther Med. 2019, 42, 240–247
- 256. The effectiveness of percutaneous injections of ozonotherapy in low back pain. Barbosa LT, Rodrigues CF, Andrade RR, Barbosa FT. Rev Assoc Med Bras. 2020, 66, 1146–1151
- 257. Therapeutic Effect of Medical Ozone on Lumbar Disc Herniation. Niu T, Lv C, Yi G, et al. Med. Sci Monit 2018; 24, 1962–1969
- 258. Low back pain and sciatica: Treatment with intradiscal-intraforaminal O2 -O3 injection. Our experience. Muto M, Ambrosanio G, Guarnieri G, et al. Radiol Med 2008, 113, 695–706
- 259. Treatment of the lumbar disc herniation with intradiscal and intraforaminal injection of oxygenozone. Zhang Y, Ma Y, Jiang J, et al. J Back Musculoskelet. Rehabil. 2013; 26;317–322
- 260. Treatment with intradiscal and intraforaminal injections of steroid and oxygen-ozone versus steroid only. Gallucci M, Limbucci N, Zugaro L, et al. Radiology. 2007, 242, 907–913
- 261. The Biochemical and Pharmacological Properties of Ozone: The Smell of Protection in Acute and Chronic Diseases. Di Mauro R, Cantarella G, Bernardini R, Di Rosa M. Int J Mol Sci. 2019; 20(3):634
- 262. Mechanisms of Action Involved in Ozone Therapy: Is healing induced via a mild oxidative stress? Sagai M, Bocci V. Med Gas Res. 2011; Dec 20;1:29
- 263. Ozone Therapy: A clinical review. Elvis AM, Ekta JS. J Nat Sci Biol Med. 2011;2(1):66-70
- 264. Ozone therapy: an overview of pharmacodynamics, current research, and clinical utility. Smith NL, Wilson AL, et al. Med Gas Res. 2017 Oct 17.7(3);212-219
- 265. Oxidant-specific biomarkers of oxidative stress. Association with atherosclerosis and implication for antioxidant effects. Niki E. Free Rad Biol Med. 2018 May 20;120:425-440



- 266. Pisoschi AM, Pop A. The role of antioxidants in the chemistry of oxidative stress: A review. 2015 Jun 5. Eur J Med Chem; 97:55-74
- 267. Kattoor AJ, Pothenini NVK, Palagiri D, Mehta JL. Oxidative Stress in Atherosclerosis. Curr Atheroscler Rep. 2017 Sep 18. 9(11);42
- 268. Strohmaier H, Hinghofer-Szalkay H, Schaur RJ. Detection of 4-hydroxynonenal (HNE) as a physiological component in human plasma. J Lipid Mediat Cell Signal. 1995. 11:51-61
- 269. A physicochemical investigation on the effects of ozone on blood. Travagli V, Zanardi I, Silvietti A, Bocci V. Int J Biol Macromol. 2007 Dec 1. 41(5);504-11
- 270. Erythrocyte ascorbate recycling: Antioxidant effects in blood. Mendiratta S, Qu ZC, May JM. Free Rad Biol Med. 1998. 24: 789-797
- 271. Enzyme-dependent ascorbate recycling in human erythrocytes: Role of thioredoxin reductase. Mendiratta S, Qu ZC, May JM. Free Rad Biol Med. 1998. 25;221-228
- 272. The emerging role of reactive oxygen and nitrogen species in redox biology and some implications for plasma applications to medicine and biology. Graves DB. J Phys D Appl Phys 2012; 45;263001
- 273. Total antioxidant status in plasma and body fluids. Rice-Evans C, Miller NJ. Methods Enzymol 1994; 234:279-293
- 274. The Real Anthony Fauci. Robert F. Kennedy Jr. Skyhorse Publishing. 2021

275. ibid.

276. UN tackles 'infodemic' of misinformation and cybercrime in COVID-19 crisis. United Nations Department of Global Communications. March 31, 2020

https://www.un.org/en/un-coronavirus-communications-team/un-tackling-%E2%80%98infodemic%E2%80%99-misinformation-and-cybercrime-covid-19

277. Hydroxychloroquine: how an unproven drug became Trump's coronavirus 'miracle cure'. Julia Carrie Wong. The Guardian. April 7, 2020

https://www.theguardian.com/world/2020/apr/06/hydroxychloroquine-trump-coronavirus-drug

278. Trump tells Americans to take unproven malaria drug to prevent Covid-19. President's own public health advisers have warned against taking hydroxychloroquine. Jessica Glenza. The Guardian. April 4, 2020

https://www.theguardian.com/world/2020/apr/04/coronavirus-us-ventilators-new-york-trump-touts-unproven-cure-malaria-drug

279. How 'America's Frontline Doctors' Sold Access to Bogus COVID-19 Treatments—and Left Patients in the Lurch. Vera Bergengruen. Time. August 26, 2021

https://time.com/6092368/americas-frontline-doctors-covid-19-misinformation/



280. Who are the doctors in the viral hydroxychloroquine video? Daniel Funke. July 29, 2020. Politifact. July 29, 2020

https://www.politifact.com/article/2020/jul/29/who-are-doctors-viral-hydroxychloroquine-video/

281. No Evidence That Doctor Group in Viral Video Got Near COVID 'Front Lines'— Who are the physicians behind America's Frontline Doctors? Ryan Basen, Amanda D'Ambrosio, Kristina Fiore. MedPage Today. January 5, 2021

https://www.medpagetoday.com/infectiousdisease/covid19/87797

282. Commentary: Docs Fight Back Against COVID Conspiracy Theories. Ranit Mishori, MD, MHS. Medscape. August 5, 2020

https://www.medscape.com/viewarticle/935248

- 283. Group of physicians combats misinformation as unproven COVID-19 treatments continue to be prescribed. The group wants state boards to discipline doctors who spread misinformation. Soo Rin Kim, Laura Romero, Dr. Mark Abdelmalek, Steve Osunsami. ABC News. March 4, 2022 https://abcnews.go.com/US/group-physicians-combats-misinformation-unproven-covid-19-treatments/story?id=83097330
- 284. No License for Disinformation. https://www.nolicensefordisinformation.org/
- 285. RETRACTED: Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis. Mehra MR, Desai SS, Ruschitzka F, Patel AN. Lancet. 2020 May; S0140-6736(20)31180-6
- 286. Brazilian chloroquine study halted after high dose proved lethal for some patients. Concerns grow as the journal Nature raises alarm on serious heart risks associated with Covid-19 patients taking the drug. Jessica Glenza. The Guardian April 24, 2020 https://www.theguardian.com/world/2020/apr/24/chloroquine-study-coronavirus-brazil
- 287. 'It's a nightmare.' How Brazilian scientists became ensnared in chloroquine politics. Researchers accused of killing patients after using a high dose to treat coronavirus infection. Lindzi Wessel. Science. June 22, 2020

https://www.science.org/content/article/it-s-nightmare-how-brazilian-scientists-became-ensnared-chloroquine-politics

- 288. FDA cautions against use of hydroxychloroquine or chloroquine for COVID-19 outside of the hospital setting or a clinical trial due to risk of heart rhythm problems. Does not affect FDA-approved uses for malaria, lupus, and rheumatoid arthritis. US Food and Drug Administration. July 1, 2020. https://www.fda.gov/drugs/drug-safety-and-availability/fda-cautions-against-use-hydroxychloroquine-or-chloroquine-covid-19-outside-hospital-setting-or
- 289. WHO discontinues hydroxychloroquine and lopinavir/ritonavir treatment arms for COVID-19. WHO Bulletin. July 4, 2020

https://www.who.int/news/item/04-07-2020-who-discontinues-hydroxychloroquine-and-lopinavir-ritonavir-treatment-arms-for-covid-19



290. CDC warns as use of anti-parasitic drug ivermectin for COVID-19, as calls to poison control centers increase. Jen Christensen. CNN. August 26, 2021

https://www.cnn.com/2021/08/26/health/ivermectin-covid-19-warning-injuries/index.html

291. Mississippi Is Pleading With People To Stop Using A Livestock Drug To Treat COVID-19. Wynne Davis. NPR. August 23, 2021 https://www.npr.org/2021/08/23/1030208101/mississippi-livestock-drug-ivermectin-covid-misinformation

292. FDA issues 'You are not a cow' warning after livestock drug use. Bloomberg Law. August 21, 2021. https://news.bloomberglaw.com/product-liability-and-toxics-law/fda-issues-you-are-not-a-cowwarning-after-livestock-drug-use

293. COVID-19 Treatment. Guidelines National Institutes of Health https://www.covid19treatmentguidelines.nih.gov/

294. Remdesivir for the treatment of COVID-19 — final report. Beigel JH, Tomashek KM, Dodd LE, et al. NEJM 2020;383:1813-26

295. The 'very, very bad look' of remdesivir, the first FDA-approved COVID-19 drug. The Food and Drug Administration held no advisory meeting of antiviral, and the European Union signed contract without knowing of failed trial. Jon Cohen, Kai Kupferschmidt. Science. October 28, 2020. https://www.science.org/content/article/very-very-bad-look-remdesivir-first-fda-approved-covid-19-drug

296. Expert US panel develops NIH treatment guidelines for COVID-19. 'Living document' expected to be updated often as new clinical data accrue. National Institutes of Health. April 21, 2020 https://www.nih.gov/news-events/news-releases/expert-us-panel-develops-nih-treatment-guidelines-covid-19

297. WHO recommends against the use of remdesivir in COVID-19 patients. World Health Organization. November 20, 2020.

https://www.who.int/news-room/feature-stories/detail/who-recommends-against-the-use-of-remdesivir-in-covid-19-patients

298. WHO rejects antiviral drug remdesivir as a COVID treatment. In a review of several trials, the World Health Organization found that Gilead's drug did not improve survival rates for patients nor did it help them recover. Benedict Carey. New York Times. November 19, 2020 https://www.nytimes.com/2020/11/19/health/remdesivir-covid-19.html

299. Gilead's long-awaited remdesivir price is \$3,120, in line with watchdog estimates. Angus Liu. Fierce Pharma. June 29, 2020

300. Potential Cardiotoxic Effects of Remdesivir on Cardiovascular System: A Literature Review. Nabati M, Parasee H. Cardiovasc Toxicol. 2022 Mar; 22(3):268-72

301. Kidney disorders as serious adverse drug reactions of remdesivir in coronavirus disease 2019: a retrospective case—noncase study. Chouchana L, Preta L-H, Tisseyre M, et al. Kidney Int 2021 May;99(5):1235-1236



302. Acute Kidney Injury Associated With Remdesivir: A Comprehensive Pharmacovigilance Analysis of COVID-19 Reports in FAERS. Wu B, Wu F, He Z, et al. Front Pharmacol. 2022 Mar; 13:692828

303. Gilead saw \$5.6B in remdesivir sales last year. Mackenzie Bean. Becker's Hospital Review. February 2, 2022

https://www.beckershospitalreview.com/pharmacy/gilead-saw-5-6b-in-remdesivir-sales-last-year.html

304. US secures world stock of key Covid-19 drug remdesivir. No other country will be able to buy remdesivir, which can help recovery from Covid-19, for next three months at least. Sarah Boseley. The Guardian. June 30, 2020

https://www.theguardian.com/us-news/2020/jun/30/us-buys-up-world-stock-of-key-covid-19-drug

305. How Pfizer Won the Pandemic, Reaping Outsize Profit and Influence. Arthur Allen, Kaiser. Health News. July 5, 2022

https://khn.org/news/article/pfizer-pandemic-vaccine-market-paxlovid-outsize-profit influence/#:~:text=Pfizer%20has%20spent%20handsomely%20to,more%20robust%20U.S.%20 vaccination%20programs

306. Oral nermatrelvir for high-risk, non-hospitalized adults with COVID-19. Hammond J, Leister-Tebbe H, Gardner A, et al. NEJM. 2022 Apr;386(15):1397-1408

307. Caution required with use of ritonavir-boosted PF-07321332 in COVID-19 management. Heskin J, Pallett SJC, Mughal N, et al. Lancet. 2022 Jan;399(10319):21-22

308. Price of COVID treatments from Pfizer, Merck, GSK align with patient benefits -report. Deena Beasley. Reuters. February 3, 2022

https://www.reuters.com/business/healthcare-pharmaceuticals/price-covid-treatments-pfizer-merck-gsk-align-with-patient-benefits-report-2022-02-03/

309. COVID-19 rebound may be more common in people who take paxlovid, early study suggests. Brenda Goodman. CNN. November 16, 2022

https://www.cnn.com/2022/11/16/health/paxlovid-rebound-study/index.html

310. COVID-19: Should vaccine trials be unblinded? Lenzer J. BMJ. 2020;371 https://www.bmj.com/content/371/bmj.m4956

311. The Price of Success—How To Evaluate COVID-19 Vaccines When They're Available Outside Clinical Trials. Rita Rubin. JAMA Medical News and Perspectives. February 18, 2021 https://jamanetwork.com/journals/jama/fullarticle/2776787

312. Covid-19: Researcher blows the whistle on data integrity issues in Pfizer's vaccine trial. Thacker PD. BMJ. November 2, 2021; 375 doi: https://doi.org/10.1136/bmj.n2635

313. Dr. Nagase Talks on FOIA of Pfizer's COVID-19 Vaccine Documents, Adverse Events, and More. Download the documents at this website.

https://centipedenation.com/first-column/dr-nagase-talks-on-foia-of-pfizers-covid-19-vaccine-adverse-events-and-more/



314. H.R.133 - Consolidated Appropriations Act, 2021116th Congress (2019-2020) https://www.congress.gov/bill/116th-congress/house-bill/133

315. FACT SHEET: Biden Administration Announces Historic \$10 Billion Investment to Expand Access to COVID-19 Vaccines and Build Vaccine Confidence in Hardest-Hit and Highest-Risk Communities. The White House. March 25, 2021

https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/25/fact-sheet-biden-administration-announces-historic-10-billion-investment-to-expand-access-to-covid-19-vaccines-and-build-vaccine-confidence-in-hardest-hit-and-highest-risk-communities

316. Fauci says herd immunity possible by fall, 'normality' by end of 2021. Alvin Powell. The Harvard Gazette. December 10, 2020

https://news.harvard.edu/gazette/story/2020/12/anthony-fauci-offers-a-timeline-for-ending-covid-19-pandemic/

317. Exclusive: The federal government paid hundreds of media companies to advertise COVID-19 vaccines while those same outlets provided positive coverage of the vaccines. Chris Pandolfo. Blaze Media. March 3, 2022

https://www.theblaze.com/news/review-the-federal-government-paid-media-companies-to-advertise-for-the-vaccines

- 318. Feds Secretly Paid Media to Promote COVID Shots. The Biden administration made direct payments to nearly all major corporate media outlets to deploy a \$1 billion taxpayer-funded outreach campaign designed to push only positive coverage about COVID-19 vaccines and to censor any negative coverage, according to documents obtained by The Blaze. Megan Redshaw. The Defender. March 9, 2022
- 319. CDC Awards \$3 Billion to Expand COVID-19 Vaccine Programs. Funding can be used for innovative partnerships with community-based organizations to increase vaccine uptake, including in underserved populations. Centers for Disease Control and Prevention, CDC Newsroom, April 6, 2021 https://www.cdc.gov/media/releases/2021/p0407-covid-19-vaccine-programs.html
- 320. Inside the \$250 Million Effort to Convince Americans the Coronavirus Vaccines are Safe. Graham Kates. CBS News. December 23, 2020

https://www.cbsnews.com/news/covid-vaccine-safety-250-million-dollar-marketing-campaign/

- 321. Social media 'micro-influencers' join effort to get America vaccinated Health care leaders are relying on social media and local doctors and nurses to battle vaccine skepticism, especially in hard-hit minority communities. Mohana Ravindranath. Politico. January 30, 2021 https://www.politico.com/news/2021/01/30/vaccine-rollout-influencers-463917
- 322. To fight vaccine lies, authorities recruit an 'influencer army.' The White House has teamed up with TikTok stars, while some states are paying "local micro influencers" for pro-vaccine campaigns. Taylor Lorenz. The New York Times August 1, 2021 https://www.nytimes.com/2021/08/01/technology/vaccine-lies-influencer-army.html



323. US turns to social media influencers to boost vaccine rates. James Anderson. AP News. August 10, 2021

https://apnews.com/article/lifestyle-technology-joe-biden-social-media-business-a2992b2881fcef68e1 144efa7b869844

324. Influencers are using their clout and getting paid to promote COVID best practices for New Jersey. Lauren Dezensky and Allison Gordon. CNN. December 13, 2020

https://www.cnn.com/2020/12/13/us/covid-influencer-instagram-tiktok-new-jersey-vaccine-trnd/index.html

- 325. Covid misinformation on Facebook is killing people Biden. BBC News. July 17, 2021 https://www.bbc.com/news/world-us-canada-57870778
- 326. Psaki says administration is working with Facebook to limit misinformation. Jen Psaki said the White House's relationship with Big Tech 'shouldn't come as any surprise'. Emma Colton. Fox Business. July 16, 2021

https://www.foxbusiness.com/politics/white-house-facebook-vaccine-misinformation

- 327. AFL lawsuit reveals damning CDC documents proving government collusion with Big Tech to censor free speech and promote Biden administration propaganda. America First Legal. July 27, 2022. https://www.aflegal.org/news/afl-lawsuit-reveals-damning-cdc-documents-proving-government-collusion-with-big-tech-to-censor-free-speech-and-promote-biden-administration-propaganda
- 328. National Priorities to Combat Misinformation and Disinformation for COVID-19 and Future Public Health Threats: A Call for a National Strategy. Sell TK, Hosangadi D, Smith E, et al. Johns Hopkins School of Public Health Center for Health Security. March 23, 2021
- 329. Meeting COVID-19 Misinformation and Disinformation Head-On. The U.S. needs a national strategy to combat health-related misinformation and disinformation. Johns Hopkins. Bloomberg School of Public Health.

https://publichealth.jhu.edu/meeting-covid-19-misinformation-and-disinformation-head-on

330. Axios-Ipsos poll: the misinformed are less likely to get vaccinated. David Nather. Axios. April 1, 2021

https://www.axios.com/2021/04/01/axios-ipsos-poll-covid-misinformation-vaccination-rates

331. The partisan divide in vaccinations is starker than you realize. The effort to reach the unvaccinated has become the latest political fault line in the COVID response. Dan Goldberg and Alice Miranda Ollstein. Politico. June 5, 2021

https://www.politico.com/news/2021/06/05/partisan-divide-vaccinations-491947

332. The biggest divide on vaccination isn't race or income but party — and the divide is growing The unvaccinated lean Republican by a 3-to-1 margin. Philip Bump. Washington Post. November 16, 2021. https://www.washingtonpost.com/politics/2021/11/16/party-divide-vaccination/



- 333. Pro-Trump counties now have far higher COVID death rates. Misinformation is to blame. Daniel Wood, Geoff Brumfiel. NPR. December 5, 2021
- https://www.npr.org/sections/health-shots/2021/12/05/1059828993/data-vaccine-misinformation-trump-counties-covid-death-rate
- 334. Republican-leaning counties in Northeast Ohio suffer higher COVID death tolls, a new NPR analysis shows. Stephanie Czekalinski, Lisa Ryan. WKSU Public Radio for Northeast Ohio. May 20, 2022 https://www.wksu.org/health-science/2022-05-20/republican-leaning-counties-in-northeast-ohio-suffer-higher-covid-death-tolls-a-new-npr-analysis-shows
- 335. Pfizer to become \$100B behemoth next year thanks to COVID-19 drug and vaccine: analyst. Angus Liu. Fierce Pharma. November 23, 2021 https://www.fiercepharma.com/pharma/pfizer-to-exceed-100b-revenue-2022-thanks-to-covid-19-drug-and-vaccine-analyst
- 336. Pfizer predicts \$54bn in 2022 revenue from Comirnaty and Paxlovid. Rachel Arthur. BioPharma. February 8, 2022
- https://www.biopharma-reporter.com/Article/2022/02/08/Pfizer-predicts-54bn-in-2022-sales-from-Comirnaty-and-Paxlovid
- 337. Remarks by President Biden on the status of the country's fight against COVID-19. The White House October 25, 2022
- https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/10/25/remarks-by-president-biden-on-the-status-of-the-countrys-fight-against-covid-19-2/