

# Ivermectin or Vaccines? Which is Better?

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## COVID-19 Infection

We here at [Fact-Checked.org](https://fact-checked.org)<sup>1</sup> have known since the beginning of this pandemic that Zinc and Zinc ionophores are at the heart of preventing COVID-19 infection and as we have learned more about this disease and how our Government Agencies have totally failed to protect us, Ivermectin (IVM) is turning out to be a miracle drug that you need to know about. IVM is another ligand that transports blood serum metals like zinc and can be found in the [Zinc20](#)<sup>2</sup> pharmaceutical database funded by a subsidiary of the National Institute of Health (NIH). Drug companies use the pharmaceutical Zinc20 database to document manufactured synthetic organic molecules and compounds to mimic the actions of nutraceuticals (i.e., vitamins, amino acids, hormones, flavonoids, etc. which also appear in this database) These ionophores carry essential metals like Zinc, Calcium, Magnesium, and Selenium which are critical to our immune system. We believe we need to make our readers aware of this information which is intentionally covered up by Big Pharma (BP) and it's many "paid-for" minions in the News Media, Big Tech, and Government.

So, we researched many scientific papers and applied our causal assessment strategies to this question, and herein is what all the government healthcare agencies don't want you to know. But before we jump into what we found, let's do a quick review of how COVID-19 attacks human cells and the resulting three phases of the disease as seen below in Figure 1. The bold black line shows the severity of the disease over time.

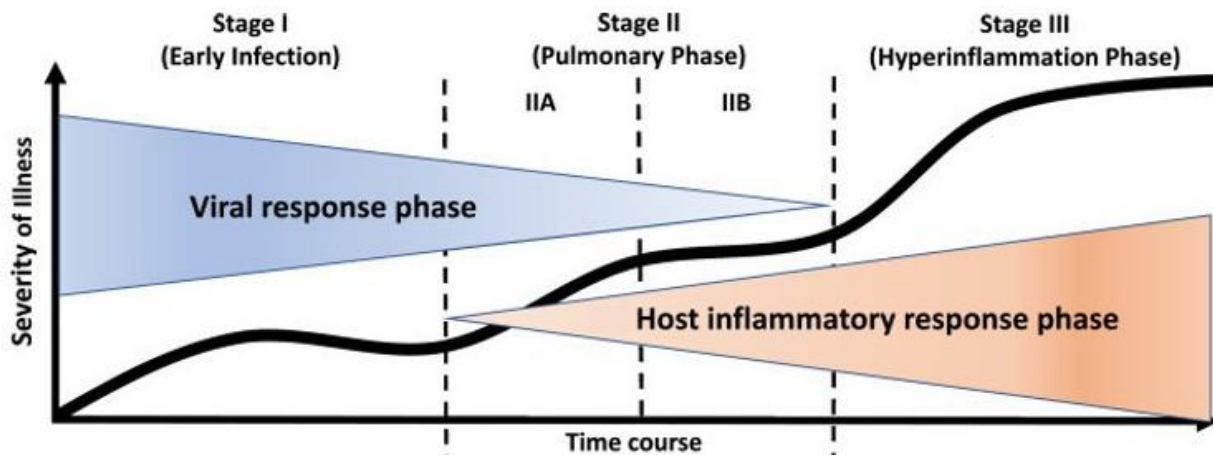


Figure 1: Stages of COVID-19

Phase 1 symptoms are Runny Nose, Respiratory Distress, Dry Cough, Fever, and Loss of Taste and Smell.

Phase 2 symptoms are Shortness of Breath, Tingling and Lack of Oxygen to the Body.

Phase 3 symptoms are Lungs filled with Fluid, Blood Clots, Stroke, and Cardiac Failure.

As discussed in [COVID-19 and Real Science](#),<sup>3</sup> we learned that these three phases are driven by the six sequential mechanisms listed below:

### **Six Attack Mechanisms:**

1. Inhalation of viral aerosols or swapping spit with an infected person.
2. The virus spike protein attaches to an ACE-2 receptor site in nose/mouth cells.
3. Once inside the cell, the virus reproduces using the cells own operating system.
4. After producing a few million more viral proteins, it kills the cell and spreads by replicating this same process.
5. Using special enzymes, the virus disrupts the immune system allowing it to spread.
6. The resulting cytokine storm invades the whole body; the lungs fill with fluid and you die.

As more real science has been performed and scientists looked more closely at Ivermectin, we find many more detailed causal relationships, which are discussed below:

### **Ivermectin (IVM) to the Rescue**

In a meta-analysis performed in May 2021 by the Japan Antibiotics Research Association, a study of the many different defense mechanisms Ivermectin uses against SARS-CoV-2 was performed and they found 20+ different ways it fights the virus.

**Action 1:** IVM binds tightly to the ACE-2 receptor site on the human cells and blocks the virus from entering. This binding affinity is [stronger than any other ionophore](#)<sup>4</sup> tested, so if you are already taking your vitamins C, D and E, etc. this ionophore is [even better](#).<sup>5</sup>

**Action 2:** If the virus gets inside the human cell, it uses some special proteins to trick the cell into thinking it is a nice guy. IVM attaches to these proteins and blocks the nuclear transport of the virus into the host cell.<sup>6</sup>

**Action 3:** IVM acts as a very effective<sup>7</sup> zinc ionophore by transporting zinc into the cell to prevent viral replication. Following a standard oral dose in healthy humans, it reaches peak plasma levels in 3.4 to 5 hours, and has a plasma half-life of 12 to 66 hours, so each dose provides some protection for 1 to 5 days.

**Action 4:** IVM [acts as an antiviral](#)<sup>8</sup> for SARS-CoV-2 and many other viruses, so it is a very good antiviral compound that can also protect you from colds and flu.

**Action 5:** IVM also acts to fight the replication of the virus by [interrupting the transcription of the viral RNA](#)<sup>9</sup> making it impossible for the virus to know what to do next.<sup>10</sup> Kind of like taking the little [connecting](#)<sup>11</sup> knobs off LEGOs so they won't fit together.

**Action 6:** If the virus gets past Action 5 above, and begins the replication process anyway, Ivermectin binds to one critical enzyme and two other proteins the virus uses in this process and again [prevents replication](#).<sup>11</sup>

**Action 7:** Furthermore, Ivermectin inhibits some critical signal transducers and activators of transcription at the nuclear level thus preventing import of viral proteins into the human cell and this [allows the cell to carry out its normal antiviral response](#).<sup>12</sup>

**Action 8:** Virus-infected cells release interferons that bind to the interferon receptors present on neighboring cells alerting them to a viral attack. These receptors then further activate members of an enzyme family used to signal an action in the protein reproduction. After gaining entry into the host cell, the virus hijacks the host cell machinery and works towards antagonizing the normal interferon-mediated host cell antiviral response. As a result, the cells surrounding the SARS-CoV-2 virus-infected cell [fail to receive critical and protective interferon signals](#)<sup>13</sup> causing the SARS-CoV-2 virus to replicate and spread without any hindrance. Ivermectin has been shown to promote the expression of several interferon-related genes and thus prevent this action.<sup>13</sup>

**Action 9:** Upon virus entry into the body, the host cells are also responsible for detecting the viral attack using another mechanism called intracellular pattern recognition receptors (PRRs). The virus activates one such PRR named the Toll-like receptors (TLRs) and blocks it from passing on the message to other cells. [Ivermectin messes with this process](#)<sup>14</sup> and prevents the virus from damaging this critical signaling mechanism.

**Action 10:** Ivermectin is very helpful in [preventing general inflammation](#)<sup>15</sup> because it works in the same way aspirin does, so it may also help with the many inflammatory maladies old people suffer from.

**Action 11:** A strong correlation exists between SARS-CoV-2 viral load, disease severity, and progression. It not only causes flu-like symptoms such as fever and a dry cough, but could also lead to widespread thrombosis with small blood clots along the walls of pulmonary blood vessels, reduced immune function, and increases in inflammation from cytokine and chemokine production resulting in the cytokine storm that kills people who reach stage 3 of the disease. [Ivermectin attacks several mechanisms](#)<sup>16</sup> in this cascading process and prevents it from happening. This is why it works to stop viral damage at phase 2 and 3 of the disease.

**Action 12:** IVM also interrupts the action of a critical enzyme called PAK-1 that the virus uses to reproduce.<sup>17</sup>

**Action 13:** It [suppresses the production](#) <sup>14</sup> of two other major components involved with the detrimental cytokine storms found in Phase 3. <sup>18</sup>

**Action 14:** IVM improves the body's ability to control inflammatory cytokine production in several other ways not already mentioned. <sup>19, 20, 21</sup>

**Action 15:** It controls the production of a protein coding gene and improves our ability to control inflammation of the lungs common in Phases 2 and 3 of the disease. <sup>22, 23</sup>

**Action 16:** IVM modulates the immune system in several other ways such that it does not get out of control. <sup>24</sup>

**Action 17:** It reduces the secretion of snot from the nose. <sup>25, 26</sup>

**Action 18:** IVM helps control our natural blood thinners such that the virus does not cause blood clots and other blood related complications common to SARS-CoV-2.

**Action 19:** A transmembrane receptor present on red blood cells along with ACE-2 receptors has been recognized as a key binding site for SARS-CoV-2 spike protein. The SARS-CoV-2 does not get inside the red blood cells but rather attaches to them and this can lead to clumping. Ivermectin binds to the Spike protein of the virus making it unavailable to bind with the red blood cells. This action might also be beneficial in advanced stages of COVID-19 presenting with clotting/thrombotic phenomena. <sup>27</sup>

**Action 20:** SARS-CoV-2 has been a well-known cause for acute myocardial injury and chronic damage to the cardiovascular system when there is an active infection as well as in long haulers disease following infection. This is caused by low oxygen levels. It has been demonstrated that Ivermectin improves cardiac function and increases the number of little energy packets in our cells thus preventing this low oxygen level and run-down feeling. <sup>28, 29</sup> So, if you have had the virus and still feel sluggish, maybe IVM can help.

### **What is Ivermectin** <sup>30</sup>:

But what is this stuff? It's been around since 1977 and received a Nobel Prize in 2015, so why haven't we heard much about it until now? To answer these questions, let's look at the history of it.

In 1975, Professor [Satoshi Omura](#) <sup>31</sup> who worked at the Kitasato University School of Pharmacy in Japan isolated an unusual bacterium from a soil sample collected on the periphery of a golf course at Kawana in Ito City, Shizuoka Prefecture. The microbe was sent to Merck, Sharp and Dohme Research Laboratories (MSDRL) in the US where it was found to display superior antiparasitic activity against the nematode worm. And at MSDRL, the active compounds from the bacterial culture were isolated and they called them "[avermectins](#)." <sup>32</sup> Interestingly, after decades of searching all over the world, this

Japanese microorganism remains the [only source of avermectin ever found](#),<sup>33</sup> so serendipity has played a large part in this story.

Avermectin represented a completely new class of compounds, so they designated it an 'Endectocide', meaning it kills a large range of different parasites *inside* as well as *outside* the body. It is also capable of killing insect vectors. Ivermectin is a safer and more potent derivative of avermectin and proved to be a remarkable antibiotic for veterinary use when introduced onto the animal health market in 1981. Two years later, it became the world's biggest selling veterinary drug, a position it maintained for over 20 years. In time, and after its unmatched success in animal health, ivermectin was found to be a remarkably effective and safe drug for combating diseases caused by filarial parasitic worms in humans. The world's worst intractable human [filarial](#) diseases were Onchocerciasis (commonly known as River Blindness) and Lymphatic filariasis (commonly known as Elephantiasis). Ivermectin is being used to control and subsequently eradicate these two devastating, disfiguring and stigmatizing tropical diseases, which afflicted around 1 in 7 of the entire world population when treatment started.

It proved ideal in many ways, given that it was highly effective, broad-spectrum, safe, well tolerated, and could be easily administered. Ivermectin's impacts in controlling river blindness and elephantiasis, diseases which blighted the lives of billions of the poor and disadvantaged people throughout the tropics, is why its discoverers were awarded the Nobel Prize in Medicine in 2015 and the reason for its inclusion on the World Health Organization's (WHO) "List of Essential Medicines." Furthermore, it has also been used to successfully overcome several other human diseases and new uses for it are continually being found. More recently, Ivermectin has [been shown](#)<sup>34</sup> to effectively [fight several different kinds of cancer](#).<sup>35</sup> In a paper published in August of 2021 in [Frontiers in Pharmacology](#)<sup>36</sup> scientists found that Ivermectin appears to be a broad-spectrum antitumor drug being most sensitive to breast and ovarian cancer cells as well as colon cancer.

### **Ivermectin Studies and Statistics:**

Twenty countries are using Ivermectin to treat Covid-19. They include Mexico, Guatemala, Argentina, Brazil, Bolivia, Slovakia, the Czech Republic, Portugal, Nigeria, and Egypt. In South Africa doctors are allowed to prescribe Ivermectin, but it is not being rolled out everywhere.

According to Jackie Stone, a doctor in [Zimbabwe](#),<sup>37</sup> since January 2021 – when Ivermectin began to be used – it has cut COVID hospital admissions and deaths by over 70%. She said: "The death rate rose sharply in January and peaked on the 25th at 70 deaths per day. Official authorization for the use of Ivermectin was granted on the 26th of January. Just one month later, on the 26th of February, the COVID death rate had fallen to zero".

Also, according to a news release by [Bird News](#),<sup>38</sup> the strength of evidence in favor of Ivermectin has been supercharged by the publication of a review of 24 randomized trials conducted in 15 countries involving clinical trials of more than 3400 people. These studies showed infections and deaths fell dramatically when Ivermectin is administered.

As an example, a Dr. Lawrie from the United Kingdom says: “Contrary to the mainstream media reports, the evidence is that Ivermectin is clearly proven to work against COVID. In fact, there is more evidence on ivermectin’s effectiveness than on any other treatment option for COVID, and far more safety data than any of the novel therapies.”

To see the latest in Ivermectin treatment studies go to: [Real-Time meta-analysis](#).<sup>39</sup> As you can see in Table 1 below, as of 11/25/21, 67 studies show a 67% improvement whenever Ivermectin is used. When used as a preventative, the effectiveness was shown to be 75% to 92%. Please note that the current standard of care for most US Hospitals is Remdesivir, and the studies show it to be less effective than Aspirin, but costs 3,000 times more. If this isn’t enough evidence to show how corrupted our medical community has become, we don’t know what else to say?

Treatment	Improvement	# of Studies	Patients	Cost
Paxlovid	95%	1	1,219	\$700
Casirivimab	74%	9	35,238	\$2,100
Sotrovimab	67%	1	583	\$2,100
Ivermectin	67%	67	49,516	\$1
Melatonin	64%	11	13,517	\$1
Vitamin A	55%	5	15,863	\$2
Zinc	48%	20	50,281	\$1
Vitamin D	45%	53	66,371	\$1
Hydroxychloroquine	25%	298	413,756	\$1
Aspirin	20%	23	80,752	\$1
Remdesivir	19%	24	97,505	\$3,120
Vitamin C	11%	25	30,398	\$1

**Table 1: Sample of COVID Treatment Studies**

[Mexico City authorities created a home-treatment-kit](#),<sup>40</sup> including Ivermectin, for its 22 million-strong population in December 2020 and cut hospitalizations by over 70%. Some states in India that adopted Ivermectin policies saw their cases fall more than 90%; Uttar Pradesh – down 98% [37,944 to 596], Uttarakhand – down 97% [9642 to 287] and Goa – down 90% [4195 to 423]. Delhi saw a 99% drop [28,395 to 238]. The bottom line is that Ivermectin works, and it works extraordinarily well. You do not need to be a scientist to understand these numbers, as they are self-evident.

Besides cutting hospitalizations and deaths, Ivermectin can also be used as a preventative. In Argentina, 788 health workers took Ivermectin weekly and 407 did not.

After ten weeks, 58% of those not taking Ivermectin had become sick – but not one of those who took it became sick. And the examples just go on and on.

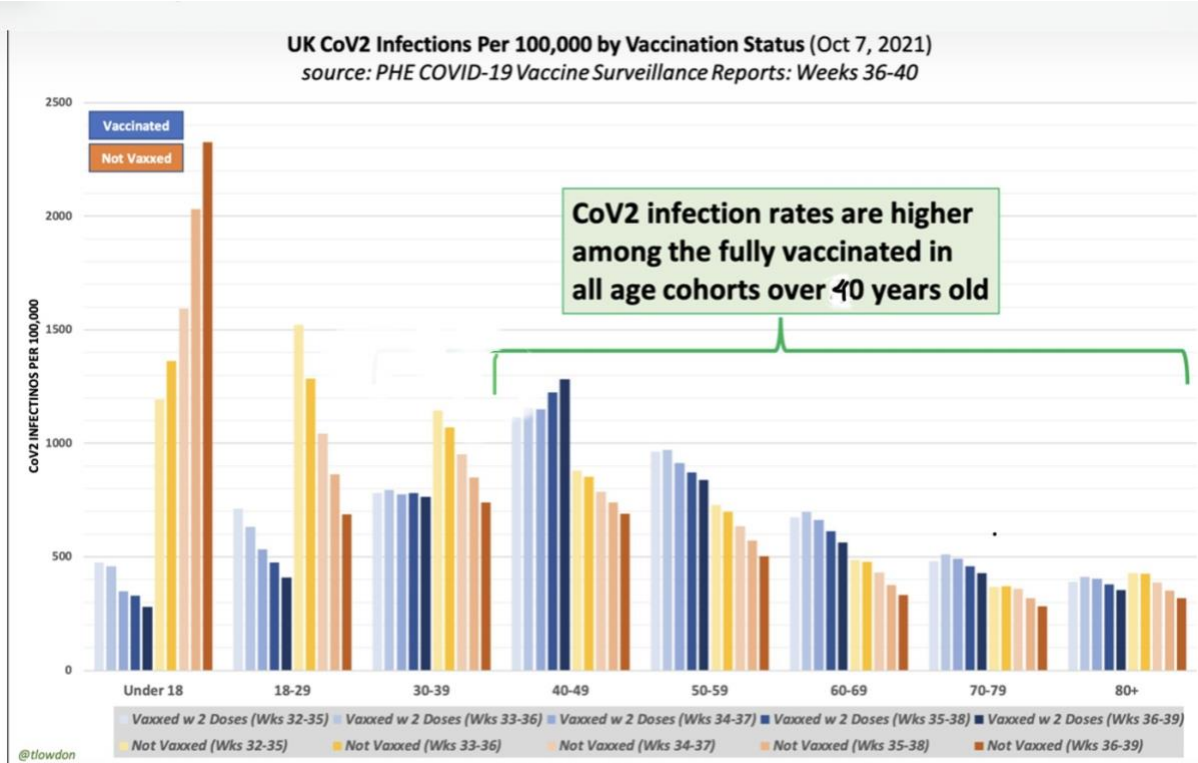
The use of Ivermectin has been restricted because the World Health Organization (WHO) says that further clinical trials are needed before they can recommend it. When you have 64 trials that say it is effective against COVID-19 most of the time, what more evidence do you need? Unless it is not about the virus, but about control. The evidence shows that so far the psychopaths from Big Pharma, the News media, all the three lettered government health agencies, and the many politicians are winning because the Sheeple are mindlessly following them. [Wakeup Sheeple!](#)<sup>41</sup> Also, we have personal experiences of many friends and family who have taken Ivermectin after being diagnosed with COVID-19 and recovered in a matter of days.

So, given this overwhelming evidence of its effectiveness, why are the CDC, WHO, FDA, NIH, etc. fighting so hard to prevent you from knowing this? Answer: Just follow the money. Big Pharma cannot make any money on Ivermectin, when a curative dose costs less than a dollar and they can sell their [newly patented, experimental gene-therapy vaccines](#)<sup>42</sup> for much-much more. Also, the Emergency Use Authorization (EUA's) for the vaccines in the US and the EU required that there was no alternative treatments available, so they work very hard to bury these truths. If Ivermectin had been approved for COVID like it should be, it would not have been given authorization for the gene-therapy vaccines without proven long-term trials. And while that would have been the moral thing to do, morality over profit does not exist in the globalized world of Big Pharma.

In Tamil Nadu, India – which withdrew their plans to use Ivermectin, [deaths rose ten-fold](#)<sup>43</sup> from April 20 to May 27 in contrast to those states in India, which did use Ivermectin, and where hospitalizations and death rates plummeted.

### **Vaccine effectiveness?**

The COVID-19 vaccines work to prevent death from the virus, but [they are doing nothing to stop the spread](#).<sup>44</sup> In some states like Vermont and Maine where 99% of old people have been vaccinated, they are experiencing record numbers of COVID-19 cases. In Ireland one county has a 99.7% vaccination rate and also has the [highest COVID case rate](#).<sup>45</sup> And, in a study from the United Kingdom they found COVID infection rates are higher among the fully vaccinated in all age groups over 40 years old. See Figure 2 below.



**Figure 2: COVID Infection Versus Vaccinations**

And according to the [World Health Organization \(WHO\) adverse effects database](#),<sup>46</sup> the vaccines are very dangerous with over 2 million adverse effects so far. The adverse effects are as follows:

- Blood and lymphatic system disorders (88,123)
- Cardiac disorders (107,441)
- Congenital, familial and genetic disorders (1188)
- Ear and labyrinth disorders (72,880)
- Endocrine disorders (2,967)
- Eye disorders (80,478)
- Gastrointestinal disorders (452,265)
- General disorders and administration site conditions (1,333,876)
- Hepatobiliary disorders (4,356)
- Immune system disorders (30,771)
- Infections and infestations (146,156)
- Injury, poisoning and procedural complications (106,796)
- Investigations (298,364)
- Metabolism and nutrition disorders (50,000)
- Musculoskeletal and connective tissue disorders (643,099)
- Neoplasms benign, malignant and unspecified (incl cysts and polyps) (3,233)
- Nervous system disorders (946,519)
- Pregnancy, puerperium and perinatal conditions (4,922)
- Product issues (3,653)
- Psychiatric disorders (103,711)



- Renal and urinary disorders (17,621)
- Reproductive system and breast disorders (84,169)
- Respiratory, thoracic and mediastinal disorders (231,914)
- Skin and subcutaneous tissue disorders (301,917)
- Social circumstances (15,353)
- Surgical and medical procedures (19,548)
- Vascular disorders (118,763)

Now compare these numbers to Ivermectin which has had 5,729 adverse events in 30 years of usage:

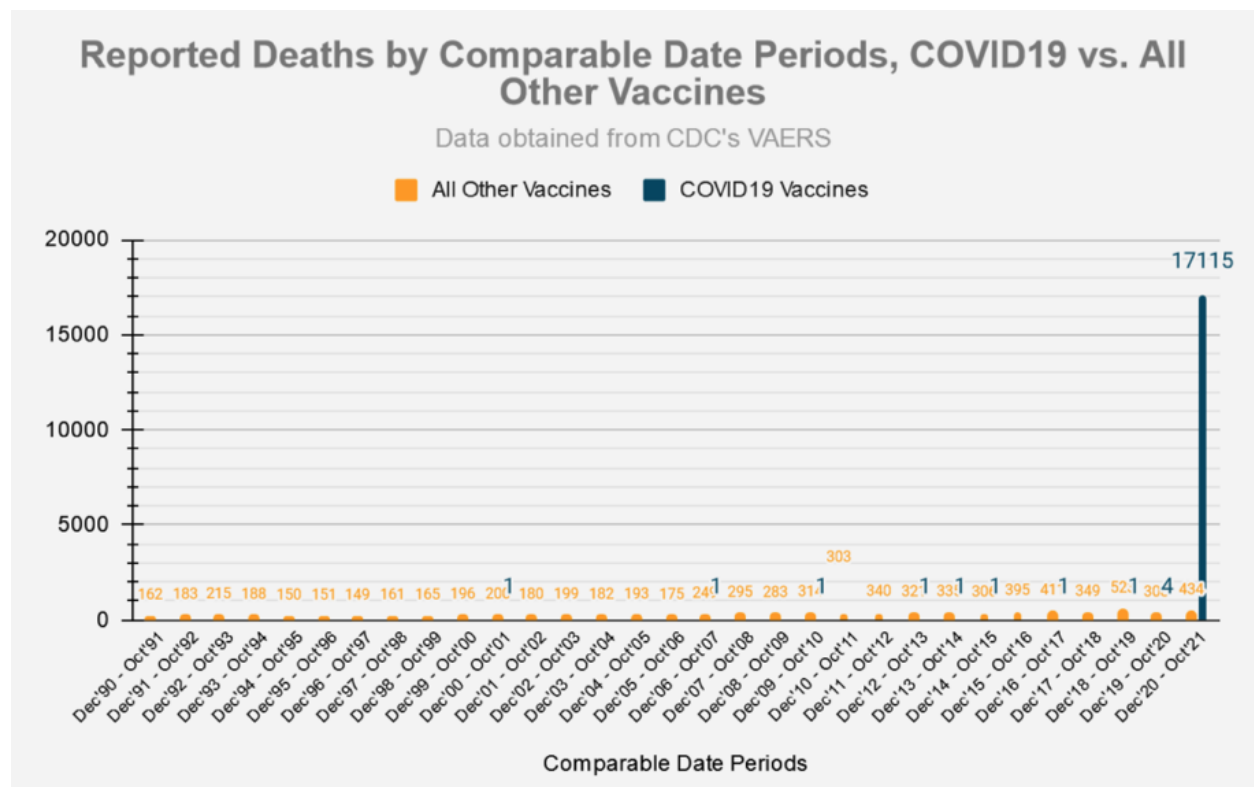
- Blood and lymphatic system disorders (66)
- Cardiac disorders (135)
- Congenital, familial and genetic disorders (2)
- Ear and labyrinth disorders (53)
- Endocrine disorders (8)
- Eye disorders (242)
- Gastrointestinal disorders (1,657)
- General disorders and administration site conditions (1,759)
- Hepatobiliary disorders (98)
- Immune system disorders (73)
- Infections and infestations (243)
- Injury, poisoning and procedural complications (752)
- Investigations (124)
- Metabolism and nutrition disorders (155)
- Musculoskeletal and connective tissue disorders (274)
- Neoplasms benign, malignant and unspecified (incl cysts and polyps) (10)
- Nervous system disorders (1,194)
- Pregnancy, puerperium and perinatal conditions (11)
- Product issues (44)
- Psychiatric disorders (233)
- Renal and urinary disorders (139)
- Reproductive system and breast disorders (43)
- Respiratory, thoracic and mediastinal disorders (218)
- Skin and subcutaneous tissue disorders (1,866)
- Social circumstances (12)
- Surgical and medical procedures (11)
- Vascular disorders (125)

So, we can now see that the WHO and all the other three-letter-government agencies are deceiving the world, when comparing their own data, that the EUA authorized, gene-therapy vaccines are 368 times more dangerous than Ivermectin.

## **Conclusion:**

Based on our review of the Ivermectin research, we can see statistically significant reductions in mortality, time to clinical recovery, and time to viral clearance. Furthermore, results from [numerous controlled prophylaxis trials](#) <sup>47</sup> report significantly reduced risks of contracting COVID-19 with the regular use of Ivermectin. Given the abundance of ways Ivermectin works on the body to prevent COVID-19 infection, we need to share this knowledge with everyone, to stop the psychopaths from the various global, medical and governmental agencies from killing more people. With this safe and effective drug which prevents and treats early symptom COVID-19 and all of its variants, we do not need to experiment with human lives using these experimental gene-therapy vaccines, and proven to have killed thousands of people. See Figure 3 below for more evidence.

If these trends continue, this could be the biggest crime against humanity ever perpetrated.



**Figure 3: COVID Vaccine Deaths Versus All Other Vaccines**

So, given these important finds, the big question is what can we do to protect ourselves. According to Front Line COVID-19 Critical Care Alliance, you should use a preventative dose of 0.2 mg/kg of weight, which is about 18 mg for a 200-pound person and 12 mg for a 130-pound person. Take one dose on day 1 and day 3, then take one dose weekly for 10 weeks, followed by one dose every 2 weeks. Also, because it has been shown to be most effective when taken with Zinc, be sure to add this supplement to your daily protocol. For many more details go to their website: [FLCCC Alliance](#). <sup>48</sup> It is important to

note that because there is no long-term experience with these doses, scientists are [performing clinical trials](#)<sup>49</sup> to better understand what the optimal dose is, but these quantities are way below the known toxic doses by orders of magnitude, so they are considered to be very safe. Also, Ivermectin has been used safely in pregnant women, children, and infants.

Because of these findings, it would be wise to have an early treatment supply of Ivermectin available. To do that, go to this link [Indiamart](#).<sup>50</sup> Or, to buy direct from a reliable source contact Ravi at [Medsimportexport@gmail.com](mailto:Medsimportexport@gmail.com). We found him to be very professional and helpful. If you want to shop around, Indiamart will take your request for medicine and send it out to 5 or 10 pharmacies which will send you offers. Find the best offer and then choose a brand you trust. Iverjohn by Johnlee Pharmaceuticals Pvt. Ltd. and Medimark Drugs & Pharmaceuticals (Austro Ivermectin) are two vetted suppliers of Ivermectin in India. You may have to use an international money transfer company called [Wise](#),<sup>51</sup> to purchase products, but they take Apple Pay and other credit options. The whole process was relatively simple and smooth and the product was received in approximately 3.5 weeks. Be Safe!

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<sup>1</sup> Effective Thinking by Fact-Checked.org; <https://fact-checked.org>

<sup>2</sup> ZINC20—A Free Ultralarge-Scale Chemical Database for Ligand Discovery; [https://www.academia.edu/55210638/ZINC20\\_A\\_Free\\_Ultralarge\\_Scale\\_Chemical\\_Database\\_for\\_Ligand\\_Discovery](https://www.academia.edu/55210638/ZINC20_A_Free_Ultralarge_Scale_Chemical_Database_for_Ligand_Discovery)

<sup>3</sup> COVID-19 and Real Science; E. J. Ledet and Dean L. Gano, Nov. 2020;

[https://factcheckedorg.files.wordpress.com/2021/08/covid19-and-real-science.m3\\_4-1.pdf](https://factcheckedorg.files.wordpress.com/2021/08/covid19-and-real-science.m3_4-1.pdf)

<sup>4</sup> Ivermectin Docks to the SARS-CoV-2 Spike Receptor-binding Domain Attached to ACE2; By Steven Lehrer and Peter H. Rheinstein, September 2020; <https://iv.iarjournals.org/content/34/5/3023>

<sup>5</sup> Exploring the binding efficacy of ivermectin against the key proteins of SARS-CoV-2 pathogenesis: an *in silico* approach; By A Choudhury, et. al., Future Virology Vol. 6, No. 4; March 2021; <https://www.futuremedicine.com/doi/10.2217/fvl-2020-0342>

<sup>6</sup> Yang SNY, Atkinson SC, Wang C, Lee A, Bogoyevitch MA, Borg NA, et al. The broad spectrum antiviral ivermectin targets the host nuclear transport importin  $\alpha/\beta 1$  heterodimer. *Antivir Res.* 2020;177:104760.

<sup>7</sup> Freedman JC (2012) Chapter 4 - Ionophores in planar lipid bilayers. In: Sperelakis N (ed) *Cell Physiology Source Book*, 4th edn. Academic Press, pp 61–66 ISBN 9780123877383.

<sup>8</sup> Ivermectin, antiviral properties and COVID-19: a possible new mechanism of action; By Emanuele Rizzo, May 2020; <https://link.springer.com/article/10.1007%2Fs00210-020-01902-5>

<sup>9</sup> Coronavirus biology and replication: implications for SARS-CoV-2; By Philip V'kovski, et. al., *Nature Reviews Microbiology*, October 2020; <https://www.nature.com/articles/s41579-020-00468-6>

<sup>10</sup> Ma Y, Wu L, Shaw N, Gao Y, Wang J, Sun Y, et al. Structural basis and functional analysis of the SARS coronavirus nsp14- nsp10 complex. *Proc Natl Acad Sci USA.* 2015;112:9436–41.

<sup>11</sup> Molecular Docking Reveals Ivermectin and Remdesivir as Potential Repurposed Drugs Against SARS-CoV-2; By Ahmad F. Eweas, et. al., *Frontier in Microbiology*, January 2021.

<https://www.frontiersin.org/articles/10.3389/fmicb.2020.592908/full>

<sup>12</sup> The FDA-approved drug ivermectin inhibits the replication of SARS-CoV-2 *in vitro*; By Leon Caly, et.al., *Science Direct*, June 2020. <https://www.sciencedirect.com/science/article/pii/S0166354220302011?via%3Dihub>

<sup>13</sup> Attenuated Interferon and Proinflammatory Response in SARS-CoV-2–Infected Human Dendritic Cells Is Associated With Viral Antagonism of STAT1 Phosphorylation; By Dong Yang, et. al., *The Journal of Infectious Diseases*, September 2020. <https://academic.oup.com/jid/article/222/5/734/5860442>

<sup>14</sup> Ivermectin inhibits LPS-induced production of inflammatory cytokines and improves LPS-induced survival in mice; By X. Zhang, et. al., *Inflammation Research*, November 2008. <https://link.springer.com/article/10.1007%2Fs00011-008-8007-8>

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- <sup>15</sup> NF- $\kappa$ B signaling in inflammation; By Ting Liu, et. al., Nature: Signal Transduction and Targeted Therapy, July 2017. <https://www.nature.com/articles/sigtrans201723>
- <sup>16</sup> An aberrant STAT pathway is central to COVID-19; By Toshifumi Matsuyama, et. al., Nature, October 2020. <https://www.nature.com/articles/s41418-020-00633-7#author-information>
- <sup>17</sup> Dou Q, Chen H-N, Wang K, Yuan K, Lei Y, Li K, et al. Ivermectin induces cytostatic autophagy by blocking the PAK1/Akt axis in breast cancer. *Cancer Res.* 2016;76:4457–69.
- <sup>18</sup> deMelo GuilhermeDias, et al. Anti-COVID-19 efficacy of ivermectin in the golden hamster. *bioRxiv.* 2020. <https://doi.org/10.1101/2020.11.21.392639>.
- <sup>19</sup> Mechanisms of Ivermectin Facilitation of Human P2X Receptor Channels; Avi Priel, Shai Silberberg, Feb., 2004, *Journal of General Physiology.* <https://rupress.org/jgp/article/123/3/281/33850/Mechanism-of-Ivermectin-Facilitation-of-Human-P2X4>
- <sup>20</sup> Stokes L, Layhadi JA, Bibic L, Dhuna K, Fountain SJ. P2X4 receptor function in the nervous system and current breakthroughs in pharmacology. *Front Pharm.* 2017;8:291 <https://doi.org/10.3389/fphar.2017.00291>
- <sup>21</sup> Layhadi JA, Turner J, Crossman D, Fountain SJ. ATP evokes Ca<sup>2+</sup> responses and CXCL5 secretion via P2X4 receptor activation in human monocyte-derived macrophages. *J Immunol Balt Md 1950* 2018;200:1159 <https://doi.org/10.4049/jimmunol.1700965>
- <sup>22</sup> Andersson U, Ottestad W, Tracey KJ. Extracellular HMGB1: a therapeutic target in severe pulmonary inflammation including COVID-19? *Mol Med.* 2020;26:42.
- <sup>23</sup> Juarez M, Schcolnik-Cabrera A, Dueñas-Gonzalez A. The multi- targeted drug ivermectin: from an antiparasitic agent to a repositioned cancer drug. *Am J Cancer Res.* 2018;8:317–31. Published 2018 Feb 1
- <sup>24</sup> Xydakis MS, Dehghani-Mobaraki P, Holbrook EH, et al. Smell and taste dysfunction in patients with COVID-19. *Lancet Infect Dis.* 2020;20:1015–6. [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30293-0/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30293-0/fulltext) Epub 2020 Apr 15. PMID: 32304629; PMCID: PMC7159875
- <sup>25</sup> Ci X, Li H, Yu Q. Ivermectin exerts anti-inflammatory effect by downregulating the nuclear transcription factor kappa-B and mitogen-activated protein kinase activation pathway. *Fundam Clin Pharm.* 2009;23:449–55.
- <sup>26</sup> Yan S, Ci X, Chen N. Anti-Inflammatory effects of ivermectin in mouse model of allergic asthma. *Inflamm Res.* 2011;60:589–96.
- <sup>27</sup> David E Scheim. Ivermectina for COVID 19 treatment Clinical response at quasi-threshold doses via hypothesized alleviation of CD147 mediated vascular occlusive (June, 2020) SS RN: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3636557](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3636557) .
- <sup>28</sup> Zheng YY, Ma YT, Zhang JY, et al. COVID-19 and the cardio-vascular system. *Nat Rev Cardiol.* 2020;17:259–60. <https://www.nature.com/articles/s41569-020-0360-5>
- <sup>29</sup> Nagai H, Satomi T, Abiru A, Miyamoto K, Nagasawa K, Maruyama M, et al. Antihypertrophic effects of small molecules that maintain mitochondrial ATP levels under hypoxia. *EBioMedicine* 2017;24:147–58. [https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964\(17\)30376-6/fulltext](https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964(17)30376-6/fulltext)
- <sup>30</sup> Ivermectin NDA; <https://factcheckedorg.files.wordpress.com/2021/10/050742s022lbl.pdf>
- <sup>31</sup> Satoshi Omura,; Wikipedia; [https://en.wikipedia.org/wiki/Satoshi\\_Ōmura](https://en.wikipedia.org/wiki/Satoshi_Ōmura)
- <sup>32</sup> Avermectin; Wikipedia. <https://en.wikipedia.org/wiki/Avermectin>
- <sup>33</sup> History of Ivermectin; *American Journal of Therapeutics*, May 2021. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8088823/>
- <sup>34</sup> The multitargeted drug ivermectin: from an antiparasitic agent to a repositioned cancer drug; By Mandy Juarez, et. al., *American Journal of Cancer Research*, February 2018. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5835698/>
- <sup>35</sup> Ivermectin reverses the drug resistance in cancer cells through EGFR/ERK/Akt/NF- $\kappa$ B pathway; Lu Jiang, et. al., *Journal of Experimental & Clinical Cancer Research*, June 2019. <https://jccr.biomedcentral.com/articles/10.1186/s13046-019-1251-7>
- <sup>36</sup> Ivermectin has New Application in Inhibiting Colorectal Cancer Cell Growth; By Shican Zhou, et. al., August 2021. [https://www.frontiersin.org/articles/10.3389/fphar.2021.717529/full?fbclid=IwAR3\\_dqJtxFiPHItDFB71EXluYTpSIDFWRxUxMqEpgL1Dpds5J-Y5S7yCahA#B9](https://www.frontiersin.org/articles/10.3389/fphar.2021.717529/full?fbclid=IwAR3_dqJtxFiPHItDFB71EXluYTpSIDFWRxUxMqEpgL1Dpds5J-Y5S7yCahA#B9)
- <sup>37</sup> The impact of ivermectin use in Zimbabwe; By Christine Clark, April 2021. <https://medicalupdateonline.com/2021/04/the-impact-of-ivermectin-use-in-zimbabwe/>
- <sup>38</sup> Ivermectin Treats and Prevents COVID-19; *Bird News*, June 2021. <https://bird-group.org/meta-analysis-paper/>
- <sup>39</sup> Real Time Meta-Analysis; *Real Time.* <https://c19early.com>
- <sup>40</sup> Covid Deaths Plunge After Mexico City Introduces Ivermectin; By Art Moore, May 2021. <https://stuartbramhall.wordpress.com/2021/05/31/covid-deaths-plunge-after-mexico-city-introduces-ivermectin/>

- 
- <sup>41</sup> Wakeup Sheeple; By Dean L. Gano, 2021. <https://factcheckedorg.files.wordpress.com/2021/07/wakeup-sheeple.r4.2-2.pdf>
- <sup>42</sup> VAERS Summary for COVID-19 Vaccines through 10/15/2021; October 2021. <https://vaersanalysis.info/2021/10/22/vaers-summary-for-covid-19-vaccines-through-10-15-2021/>
- <sup>43</sup> IVERMECTIN: AN UNTOLD STORY OF A “WONDER DRUG” THAT MADE A DIFFERENCE IN INDIA (EYEWITNESS ACCOUNT); By Yogi Salsa, Bear Witness, August 2021. <https://bwcentral.org/2021/08/ivermectin-an-untold-story-of-a-wonder-drug-that-made-a-difference-in-india-eyewitness-account/>
- <sup>44</sup> Vaccination Rates Not Linked to Lower COVID Rates, Epidemiology Paper Finds; By Jon Miltimore, FEE Stories, October 2021. <https://fee.org/articles/vaccination-rates-not-linked-to-lower-covid-rates-epidemiology-paper-finds/>
- <sup>45</sup> Horowitz: Irish county with 99.7% vaccination rate has highest COVID case rate; By Daniel Horowitz, Blaze Media, October 2021. <https://www.theblaze.com/op-ed/horowitz-irish-county-with-99-7-vaccination-rate-has-highest-covid-case-rate>
- <sup>46</sup> World Health Organization Adverse Events Database; <http://www.vigiaccess.org>
- <sup>47</sup> WHO Adverse Events for Ivermectin; [https://ivmmeta.com/#fig\\_fpp](https://ivmmeta.com/#fig_fpp)
- <sup>48</sup> FLCCC Alliance Prophylaxis Treatment for COVID-19; <https://covid19criticalcare.com/wp-content/uploads/2020/11/FLCCC-I-MASK-Protocol-v4-2020-11-22.pdf>
- <sup>49</sup> Ivermectin Peer Reviewed Trials; [https://ivmmeta.com/#fig\\_fpp](https://ivmmeta.com/#fig_fpp)
- <sup>50</sup> Indiamart; <https://my.indiamart.com>
- <sup>51</sup> International Money Transfer Company; <https://wise.com>