

## Understanding the Myths Vs Science of the novel coronavirus (COVID-19)

### CONCEPT NOTE

COVID-19 puts a lot of obstacles and pressures in our personal and professional life. These include the dissemination of misinformation about the disease, its transmission mode, treatment and vaccines, among others. These myths and misinformation have contributed to a cynicism about vaccinations, and to the extent of some believing that COVID-19 does not exist.

Given the scale of these infodemics and the public health risks they pose, this edition of *The COVID-19 Diary* aims to sift, decipher, produce and disseminate actual and factual information that can be accessed by the wider discerning community. The episode's topic: "*The Myth versus Science surrounding COVID-19*", will discuss the following sub-strands:

#### Sub-Strand 1: The Virus Origin Conspiracy

##### *Laboratory Development/Accident Theory*

The outbreak of the novel coronavirus continues to generate controversies of its origin, despite scientific explanation that it was initially transmitted from animals to human<sup>1</sup>. The allegation of a Chinese laboratory experiment that was deliberately or accidentally leaked at a wet market at Huanan near Wuhan, once dismissed by many as a fringe conspiracy theory, has managed to gain traction<sup>2</sup>. Proponents of this theory point to the presence of a major biological research facility in the city of Wuhan, the Wuhan Institute of Virology (WIV), which had been running a decade long study on coronaviruses in bats. Opponents argue that outbreak was an unaltered natural evolution from the wild, rather than engineered.

The second episode of *The COVID-19 Diary* assembles discussants from various disciplines to thoroughly discuss the origin and bring a finality to the debate.

#### Sub-Strand 2: The Transmissions Theories

##### *Sub-topic 1: The Weather Theory*

Some studies have investigated the link between climatic parameters and the spread of SARS-CoV-2<sup>3</sup>. The seasonal nature of the spread of some respiratory virus

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<sup>1</sup> <https://www.scientificamerican.com/article/the-lab-leak-theory-of-covids-origin-is-not-totally-irrational/>

<sup>2</sup> <https://www.bbc.com/news/world-asia-china-57268111>

<sup>3</sup> <https://bnrc.springeropen.com/articles/10.1186/s42269-021-00484-3>

infections, particularly the flu in the winter, lends credence to infodemics linking the spread of COVID-19 to weather conditions<sup>4</sup>. The relatively low infection rate in tropical Africa, with its high temperature and humidity, adds to the myths surrounding the disease's spread. The experts will again discuss the weather theory at the second episode of *The COVID-19 Diary*.

### ***Sub-topic 2: The Mosquito Theory***

Research abound that alludes that the novel coronavirus cannot be transmitted by mosquitoes<sup>56</sup>. A study by the Kansas State University's Biosecurity Research Institute concludes that the virus is unable to replicate in three common and widely distributed species of mosquitoes, namely the *Aedes aegypti*, *Aedes albopictus* and *Culex quinquefasciatus*<sup>7</sup>. A thorough discussion on this is needed to allay fears from the public.

### **Sub-Strand 3: Deliberate extinction on humanity theory.**

Some information in circulation alludes that COVID-19 was deliberately manufactured to wipe away humanity<sup>8</sup>. The COVID-19 Diary panelists will discuss the theories of extinction under specific sub-topics listed below.

### ***Sub-topic 1: Microchips theory***

The COVID-19 vaccine microchip conspiracy theories began emerging in May 2020 after Bill Gates announced there would be some digital certificates to track people who receive different vaccines<sup>910</sup>. These may have been debunked but the theories need a dissection to the level of the non-scientific community for a common understanding.

### ***Sub-topic 2: The depopulation theory***

Another information that has emerged from the COVID-19 pandemic is the depopulation theory that claims that the vaccination was an innovation to forcefully

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<sup>4</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7816859/>

<sup>5</sup> <https://www.financialexpress.com/lifestyle/health/do-mosquitoes-transmit-coronavirus-heres-what-study-says/2028654/>

<sup>6</sup> <https://www.genengnews.com/news/covid-19-not-transmitted-by-mosquitoes/>

<sup>7</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7368071/>

<sup>8</sup> <https://www.scientificamerican.com/article/nine-covid-19-myths-that-just-wont-go-away/>

<sup>9</sup> <https://www.bbc.com/news/52847648>

<sup>10</sup> <https://www.forbes.com/sites/brucelee/2021/05/09/as-covid-19-vaccine-microchip-conspiracy-theories-spread-here-are-some-responses/?sh=6ce46dc5602d>

depopulate humankind. This is supported by the infodemics that COVID-19 is a lab experiment to spread the virus in order to make people sick, cause deaths and the vaccine to be given to people of colour who were being used as "experiments" and to wipe them out<sup>11</sup>.

### ***Sub-topic 3: The mRNA-DNA conspiracy theory***

A new concern among vaccine skeptics is that mRNA-developed COVID-19 vaccines such as Pfizer and Moderna may alter the human DNA structure, resulting in long-term health problems<sup>12</sup>. This theory derives from information that vaccines contain a weakened version of the virus and genetic material that when injected into the body will somehow mix in with and change our own genetic material.

## **Sub-Strand 4: Immunities and Alternative Treatments Options**

Several other theories on immunity from COVID-19 infections abound. One of such, which has recently been debunked, is immunity from reinfection once a person is vaccinated<sup>13</sup>. Others have looked at religious rites, dieting, herbal, and homeopathic treatments as forms of defense against virus infections. As the world races for a cure for the disease, segments of society are resorting to several of these alternative methods as treatment options. Indeed, at the early days of the pandemic, many options which were more enticing were thought to be 'the cure' owing to their broad availability and enhanced impression of safety<sup>14</sup>. Some of these alternative treatments theories are listed below:

### ***Sub-topic 1: Alcohol Usage***

In circulation at the onset of COVID-19 was that drinking high-strength alcohol would cure infection by the virus. But an Indian tabloid reported of people falling ill after drinking alcohol made from toxic datura seeds, following a viral video on social media claiming that it would boost their immune system against COVID-19<sup>15</sup>. What really constitute "alcohol" and how will the application of alcohol, whether drunk or applied, lead to COVID-19 treatment?

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<sup>11</sup> <https://www.usatoday.com/story/news/2021/02/16/black-history-covid-vaccine-fears-medical-experiments/4358844001/>

<sup>12</sup> <https://coronavirus.nautil.us/can-covid-vaccine-alter-dna/>

<sup>13</sup> [www.scientificamerican.com/article/eight-persistent-covid-19-myths-and-why-people-believe-them-/%3famp=true](http://www.scientificamerican.com/article/eight-persistent-covid-19-myths-and-why-people-believe-them-/%3famp=true)

<sup>14</sup> [www.healthline.com/health-news/herbal-remedies-covid-19-what-to-know#Herbs-may-help-with-other-viruses](http://www.healthline.com/health-news/herbal-remedies-covid-19-what-to-know#Herbs-may-help-with-other-viruses)

<sup>15</sup> [www.aljazeera.com/amp/news/2020/4/27/iran-over-700-dead-after-drinking-alcohol-to-cure-coronavirus](http://www.aljazeera.com/amp/news/2020/4/27/iran-over-700-dead-after-drinking-alcohol-to-cure-coronavirus)

### ***Sub-topic 2: Antibiotics Treatment***

Antibiotics are used to treat bacterial infections. However, COVID-19 is a virus which, by its genomic make, cannot be treated with antibiotics. Yet antibiotics such as Aspirin are considered as treatment option<sup>16</sup>. Effective information on the genomic structure of COVID-19 is required to educate the public on the differences between bacteria and viruses and what treatment options work for each.

### ***Sub-topic 3: Herbal treatment, and dieting theories***

Beyond allopathic medicine, direct application of plants products offers treatment for many forms of ailments. Several plant-based treatments, particularly those with antiviral capabilities such as neem, lemon grass, lemon, and ginger, as well as other therapies like steam therapy continue to be proposed and suggestive of enhancing immunity and ultimately treatment of COVID-19<sup>17</sup>. Additionally, claim that particular foods and supplements lower angiotensin-converting enzyme activity or influence the immune system via gene expression, cell activation, and signaling molecule change. Thus, eating high-alkaline fruits like avocado, guava, papaya, can reduce the virus' "acidity" of COVID-19<sup>18</sup>. The lack of full understanding of properties and application of plant-based products for disease treatment adds to the myths of COVID-19.

## **The Next Episode of “The COVID-19 Diary”**

In episode 2 of ‘The COVID-19 Diary’ information series, the discussions will focus on **the Myths and Science of the novel coronavirus (COVID-19)**.

### **About The COVID-19 Diary**

**The COVID-19 Diary** aims to leverage the existing Association of African Universities Television (AAU TV) initiative to promote science engagement in Africa by strengthening the collaborations among science journalists, health journalists, communicators, higher education communities, researchers, policy makers and the general public. It ultimately seeks to produce good science communication stories and media products on emerging infectious diseases such as COVID-19 that are factual and impactful.

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<sup>16</sup> <https://www.google.com/amp/s/amp.usatoday.com/amp/5277398002>

<sup>17</sup> <https://www.aa.com.tr/en/africa/tanzania-banks-on-herbal-remedy-to-fight-coronavirus/2140066#>

<sup>18</sup> <https://www.bbc.com/news/53684037>

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