

Research Article

## Spatial and Temporal Analysis of Coronavirus (Covid 19) In Iraq and Its Relationship to Temperature Averages

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**Abstract:** Coronaviruses are a group of viruses that can cause diseases such as colds, severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS), and a new type of coronavirus has been discovered after it was identified as a cause of the spread of one of the diseases that began in China in 2019. And the virus is now known as the severe acute respiratory syndrome Corona 2 (SARS Cove 2), through follow-up, scrutiny and spatial and temporal analysis of infections in Iraq, it was found that there is a nearby focus in which the epidemic (Iran) spread and was transmitted to Iraq by infected carriers without their knowledge of the lack of The presence of any Prior knowledge or information about this epidemic at the time. These are the Iraqi tourists who were receiving treatment for other diseases in Iran and then returned home, as well as the transmission of the epidemic by some Iranian students who came during the spread of the epidemic.

**Keywords:** Coronaviruses, SARS Cove 2, Iraq, transmission.

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## INTRODUCTION

The cities and regions adjacent to Iran and those that have tourist and economic activity with Iran (central and southern Iraq) are more than exposed to the epidemic, but on a limited scale, as no city witnessed an outbreak of the virus not because of the preventive measures, which had a simple role but rather because of high temperatures. The clarity of the sky and the concentration of solar radiation during the period of the virus entering Iraq (24/27/3) and the inappropriate environment for the virus is not only the air temperature but more that causes damage to the virus is the actual direct solar radiation, which is very effective when the sky is clear and this It is not available in central and south For Iraq during that period, which guarantees to paralyze the virus's activity and preventing its spread on surfaces, objects, and air because heating surfaces and bodies with various components reaches more than twice the temperature of the air, if the air temperature is 25 degrees, the temperature of the metal surfaces and building materials can reach more than 50 degrees. It guarantees to disrupt the virus system and destroying its protein sheath, and this is the most important factor that contributed to reducing the virus outbreak in addition to the procedures of the crisis cell and the Ministry of

Health, who had great credit for recovering many cases and quarantined them. The cases of infection reached until the time of preparing the research 3/3/2020 (362) cases, a number that does not represent An epidemic in Iraq.

## RESEARCH PROBLEM

What is the spread of the Coronavirus in Iraq? And for how long? What are the ages of the injured and the dead? What are the reasons for that? Is this related to temperature?

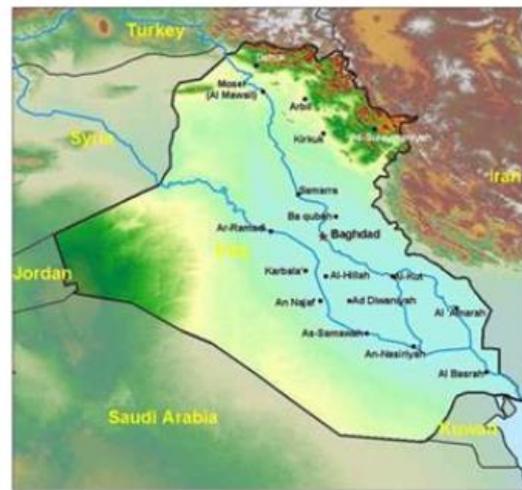
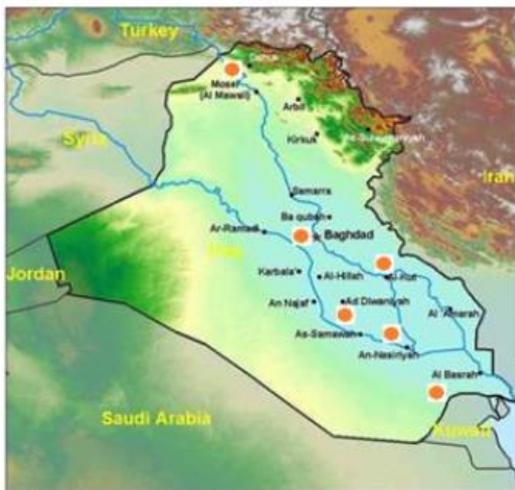
### The Hypothesis of the Research

Covid 19 has spread in Iraq but it is less than the rest of the world, and this will continue despite the procedures, and its spread is related to infection from injured people coming from Iran in particular, and what helps not to explode in people with high temperatures.

### Study Boundaries

represented by the political borders of Iraq and six meteorological stations in Iraq were chosen to be deployed regularly on its territory, to apply the study to them, and these stations are Mosul, Baghdad, Hay, Diwaniyah, Nasiriya, Basra ,See map (1).

Map (1) the political borders of Iraq and the elected climate stations.



### Coronavirus Disease

The resulting disease is called coronavirus (COVID 19), and cases of coronavirus have been discovered in an increasing number of countries, including the United States, and public health groups like the World Health Organization and the Centers for Disease Control and Prevention in the United States By monitoring the matter and posting updates on its websites, the World Health Organization declared the disease a global pandemic in March - March 2020, and these groups issued recommendations about disease prevention and treatment. It was mentioned in the book *Building the Universe and the Fate of Man*, a book in Arabic published in 2006<sup>(1)</sup> for the first Once stipulated in a The second separation of biological terrorism kills one million people in 2020, "all this will be an evil mastermind or human error as it would be in the year 2020 (biological error) .

### Symptoms:

Signs and symptoms of Coronavirus (Covid 19) may appear two to 14 days after exposure, and may include: fever, cough, shortness of breath or difficulty breathing, and other symptoms may include: fatigue, aches, runny nose, and inflammation Sore throat symptoms of SK 2019 virus ranges from very mild to severe. Some people have no symptoms. Older people or those who already have medical conditions, such as diabetes and heart and lung disease, may be more likely to develop severe disease. This is similar to what happens with other respiratory diseases, such as influenza.

### Reasons:

It is unclear to what extent the new SK virus infection can transmit between people, and it appears to be spread among people with direct contact and is spread by droplets from the respiratory tract when the infected person coughs or sneezes, and also spreads if the person touches a surface on which the virus is infected Then touch his mouth, nose, or eyes.

### Risk factors:

The risk factors associated with Coronavirus 2019 (Covid 19) appear to include:

1. Residence recently in one of the areas that have experienced a continuous community spread of Coronavirus 2019 or a recent arrival from a trip to those areas, according to the areas defined by the Centers for Disease Control and Prevention or the World Health Organization.
2. Close contact with a person who is infected with the Coronavirus, such as when a family member or health care worker takes care of an infected person.

### Complications:

Complications include: (inflammation of both lungs, failure of several organs in the body, death).

### Prevention:

The lack of a vaccine to prevent infection with the new Coronavirus, despite the huge amount of news on social media and news and scientific channels to reach a cure or vaccine for this virus, but the truth is that even if this news is correct, they need clinical trials and application processes on people Infected and not infected with the virus, of different ages, and on people who have other diseases (chronic and normal), etc., therefore, it becomes necessary to take some steps to reduce the risk of infection, and the World Health Organization and the Centers for Disease Control and

<sup>1</sup>Hisham Taleb, *Building the Universe and the Destiny of Man: A Denunciation of the Big Bang Theory - Amazing Facts in Cosmic and Religious Sciences*, First Edition, 2006, and Second Edition 2012, Google's ranking No. 16 among 600 books in the physical universe energies.

Prevention have recommended that the following precautions be taken to prevent Coronavirus (Covid 19):

1. Avoid attending large events and gatherings.
2. Avoid close contact (within a distance of 6 feet or 1.8 meters) with anyone who is sick or has symptoms.
3. Maintaining a distance between one person and the other if the coronavirus is prevalent in the community.
4. Wash your hands frequently with soap and water for at least 20 seconds, or use a hand sanitizer that contains at least 60% alcohol.
5. Cover the mouth and nose with the elbow or a tissue when coughing or sneezing, and dispose of the tissue after using it.
6. Avoid touching the eyes, nose, and mouth if the hands are not clean.
7. Avoid sharing dishes, drinking glasses, bedding and other household items if he is ill.
8. Daily cleaning and disinfection for frequently touched surfaces.
9. If you are sick then stay at home and do not go to work, school or university, as well as to public places, unless this is to obtain medical care, while avoiding the use of public transportation if you are sick.
10. Avoid eating raw or undercooked meat and animal organs.
11. Avoid approaching live animals and surfaces that you may have touched if you visited live animal markets in areas that have recently seen new infections with the Corona virus.
12. If you have a chronic illness and you are at greater risk of developing an acute condition, consult your doctor about additional ways to protect yourself.

### **Injury Analysis**

Most of the Iraqis who died as a result of coronavirus infection were deprived of the appropriate traditions of funeral and burial after the graves refused to receive their bodies. In addition to the challenge posed by the possibility of infection with the virus and the transmission of infection, the families of those who died due to the virus face the challenge of burying their dead, and the traditional graves, whether those designated for the Shiite community in Najaf governorate or designated for the Sunni community in Dialah province near Baghdad, do not allow the burial of Corona victims and complain Families were unable to hide the bodies of their dead for days, as a result of not being allowed to bury them in traditional cemeteries. Rather, families were not even able to bury their dead in the relatively open lands far away from the cities. On the evening of Tuesday 17/3/2020, the people in Basmaya and Nahrawan East The capital Baghdad to cut off the road to health teams that were believed to want to bury citizens who died as a result of infection

with the virus in open areas close to the two mentioned areas, and although the death toll has not exceeded 30 cases so far, according to statistics of the Ministry of Health, panic took over the people simply because they knew there was A cemetery close to them who died due to coronavirus because they believed that the virus could be transmitted to them through the dead.

The family of Malik Kadhim Ismail Al-Shammari, 67, who died of the virus 6 days ago, is among those families who are suffering these two days as a result of not being able to match the body of her deceased. The family residing in the Kamalia neighborhood east of Baghdad sent an appeal yesterday to the religious authority in Najaf and the Iraqi government to find a solution to its suffering and allow the burial of its deceased. Fadel Muhammad Abbas, a neighbor of the al-Shammari family, says that the father was injured about two weeks ago after he went to visit the Shiite city of Kadhimiya. He added to Asharq Al-Awsat newspaper that (Al-Shammari was not one of the returnees from Iran, but it seems that the infection was transmitted to him during his local visit, and after the appearance of the features of the infection he was transferred to the hospital, last Friday, and when he was informed of his infection with the Coronavirus, he died a few hours later), The family has been experiencing a real ordeal for six days, and it has been unable to bury the body, which is still preserved in the refrigerators of the dead in Ibn Al-Qaf Hospital, and tried in every way to bury in the tombs of Najaf and was not allowed to do so, so I went to the funeral to the cemetery of Muhammad Sakran in Dialah, so the clans confronted them with weapons and refused to bury And besides this suffering, individuals underwent The extended family, who are more than (30) persons, to isolate the possibility of transmitting the infection to them from the deceased.

The director of health of Al-Karkh Jasib Latif Al-Hijami<sup>(2)</sup> has criticized the authorities and people who refuse to bury the dead of those infected with the Coronavirus. Al-Hijami wrote an angry post on Facebook, in which he said: "Aren't you a good man? Where is the debt? Where is Islam? Where is humanity? Where is the pronoun? Where is the Iraqi jealousy? He added, "Do your religion, your humanity and your conscience allow to prevent the burial of the body of a man who died God a week ago, and his wife and son who were injured and are currently in hospital, and allMembers of his family are in stone at another hospital and they have nothing left but God and us."The accumulation of corpses of the deceased with Coronavirus in hospital refrigerators and the possibility of the virus spreading in hospitals such as refrigerators in Sadr City hospitals and forensic medicine and the

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<sup>2</sup>An interview with the director of the Karkh Health Department on March 27-2020.

hospitals of the governorates and residential neighborhoods close to them. A week without being buried, which caused a health crisis and the possibility of an outbreak in the hospitals and neighborhoods surrounding the hospitals, and this caused psychological crises for the families of the deceased, and Baghdad Governorate chose a place in the outskirts of Baghdad to bury the corpses of the deceased in Corona, more than thirty kilometers from Aqr B residential gathering in the capital, but the people of the region refused to bury the victims of Corona, despite the assurance of specialists and medical personnel that the burial will be at a depth of six meters and is not afraid of the spread of infection through the burial process.

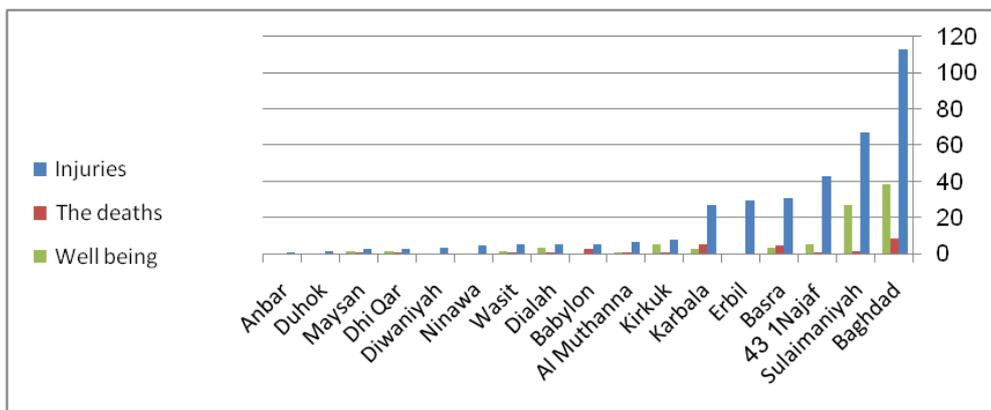
The Coronavirus pandemic spread in Iraq starting in February 2020 in the city of Najaf, when a sample of an Iranian religious student examined the

nationality and the result was positive for his infection with the Coronavirus associated with severe acute respiratory syndrome type 2 (SARS-CoV-2), and then revealed other cases She is infected with Covid-19, and the total confirmed cases in Iraq amounted to 362 cases, including 32 deaths as of March 27, 2020 (see Table 1), which also shows that the number of HIV infections until the day 27-32020 was (362) Infection distributed in the governorates of Iraq, Baghdad governorate represented the most virus-infected governorates (113), as well as most areas Cured and Well-being, in which the injured recovered (39) cases, and most of the governorates in which the infected died due to the virus (9) deaths, and the Sulaimaniyah, Najaf, Basra, and Erbil governorates came after. (67, 43, 31, 30) were reported, respectively, and the least affected governorates were Al-Anbar Governorate, with one injury, recovered after that.

**Table (1)** Preparation of infections, recovery and deaths in Corona virus in Iraq until 3/20/2020

Governorate	Injuries	The deaths	Well being	Governorate	Injuries	The deaths	Well being
Baghdad	113	9	39	Dialah	6	1	4
Sulaimaniyah	67	2	27	Wasit	6	1	2
Najaf 43 1	43	1	6	Ninawa	5	0	0
Basra	31	5	4	Diwaniyah	4	0	0
Erbil	30	0	0	Dhi Qar	3	1	2
Karbala	27	6	3	Maysan	3	1	2
Kirkuk	8	1	6	Duhok	2	0	0
Al Muthanna	7	1	1	Anbar	1	0	0
Babylon	6	3	0	Total	362	32	97

Source: Researchers relying on the Iraqi Ministry of Health, Ministry's Information Department, published data, 3/28/2020.



**Figure (1)** Preparing infections, recovery and deaths in Corona virus in Iraq up to 3/27/2020.

Researchers rely on Table (1).

**Chronology of injuries<sup>(3)</sup>**

February: The Ministry of Health announced on 24/220/2001 the first confirmed case of HIV in Najaf for an Iranian religious student, and the patient was placed in health custody in Al-Hakim Hospital and

nine people were touched by the patient and were accompanied by him On 25/2/2020: The Ministry of Health announced four cases of Coronavirus in Kirkuk governorate within one family who came from Iran, and 20 people were quarantined in the Dar Al Nada Hotel in Najaf on suspicion of having Coronavirus after coming into contact with the Iranian casualty, and the Najaf Health Department announced the deportation of the

<sup>3</sup>Iraqi Ministry of Health, Ministry's Information Department, published data, 2020.

student Iranian infected with Coronavirus to his country after agreement and coordination between the Ministry of Health and the Iranian Consulate in Najaf and the approval of the World Health Organization and transferred from the Hakim General Hospital in Najaf where he was lying there two days ago to Iran by land and by ambulance, and on February 27 the Ministry of Health announced the first registration Injury in the capital b Dad is a 42-year-old man who was returning from his travel from Iran and deposited health detention in Al-Furat General Hospital and announced the registration of a new injury in Kirkuk to a 51-year-old man returning from Iran, bringing the number of injuries in Iraq to 7 cases. On February 28, a ministry announced Health A second case was registered in the capital, Baghdad, for a 32-year-old woman returning from Iran who was transferred to quarantine at the Euphrates General Hospital. On February 29, 2020, the Ministry of Health announced the discovery of five new confirmed cases of coronavirus, four of them in Baghdad (three in Karkh and one in Rusafa) and the fifth in the province of Babylon.

March: On 1March, the Ministry of Health announced the discovery of six new confirmed cases of the Coronavirus, two of them in Baghdad (one on the Rusafa side and the other on the Karkh side) and four cases in Sulaimaniyah province, all of whom were in Iran recently.

2March: The Ministry of Health also announced five new confirmed cases of the new corona virus, three of which are in Baghdad (two on the Rusafa side and one on the Karkh side) and one in Maysan province and the fifth in Najaf province, and the health of the Kurdistan region of Iraq announced the discovery of a new confirmed case in Sulaimaniyah Governorate, to increase the confirmed cases in Sulaimaniyah to 5 cases, and on March 3, the Ministry of Health announced five new confirmed cases of the new Corona virus, one in Baghdad, one in Karbala Governorate, one in Najaf Governorate, and two in Wasit Governorate, residents of the Suwaira district, who returned from Iran recently, and on March 4 The Sulaimaniyah health has resulted from the death of a 63-year-old man with the Corona virus, and the man, who was an imam of the mosque in the city of Sulaimaniyah, was subject to a quarantine before his death, becoming the first death in Iraq due to Corona, and the Ministry of Health announced the registration of three confirmed cases, two in Dialah and one in Najaf, then the ministry announced late at night recording two deaths in Baghdad due to Corona for a 26-year-old woman and a 65-year-old man, bringing the number of deaths in Iraq to three, and on March 5 the health of the Kurdistan Region of Iraq announced the injury of two individuals The family of the cleric who died on Wednesday from the Coronavirus, bringing the number of cases of amniocentesis German to eight, one of them died. The

Ministry of Health announced the registration of three new infections, two of them in Kirkuk, and a third in Wasit, of a man from the people of Jisan who works as a driver at the border crossing with Iran. On 6/3/2020, the first case of recovery from the Coronavirus in Iraq was recorded for a 42-year-old man in a hospital General Euphrates in Baghdad, and the diagnosis of 8 new cases in Iraq has been confirmed, five in Baghdad and two injuries confirmed in Sulaimaniyah (previously announced) and the eighth injury of a 63-year-old female from Karbala and later died to become the first death in Karbala due to Corona, and announced the health of the region The first case was recorded in Erbil, bringing the number of deaths in Iraq to 4 and the number of injuries to 48.

On 7March, 2020, the Ministry of Health announced the registration of eight confirmed infections with the Coronavirus, seven of which were in Baghdad (six in Rusafa and one in Karkh) and one in Najaf for a 32-year-old female from the city of Kufa / Alwa Al-Fahal returning from Iran, and announced the health of the region An injury was recorded in Erbil, a 49-year-old female from Iran.

On 8March, Babel's health announced the death of the HIV-infected case of a 73-year-old man who was lying in Al-Murjan Hospital, and Maysan's health had reported a death due to Corona to a 35-year-old injured person after arriving at the martyr Al-Sadr Teaching Hospital's emergency, where He was in a very critical condition, and the injured had returned from Iran through Baghdad International Airport and entered the country on February 27, and the Ministry of Health announced the registration of six confirmed new infections, one in Muthanna for a 30-year-old woman returning from Karbala who is a resident of the Khidr District, and one in Anbar for a woman Her age (64 years), from Al-Khalidiyah District, was in the medical city accompanying a patient I was infected with Coronavirus, one in Dhi Qar for a 62-year-old man from the Al-Shatra district returning from Iran, and one in Karbala for a 23-year-old Najaf man who works as an employee of the Karbala Health Department and was injured as a result of contact with an injured woman who died before Two days in Karbala, one in Baghdad and one in Maysan for a man returning from Iran who later died. Dialah's health announced the registration of a new infection with the Coronavirus in Dialah governorate for an elderly woman (67 years old) and the health of the province announced the registration of three single cases in Erbil for a woman aged (52 years) who is the sister of the woman who was diagnosed with the infection in Erbil and who had returned from Iran, Two men in Sulaimaniyah, two men, one of whom is aged (53 years), who is returning from Iran, and the second one, aged (32 years), who was infected with the deceased person in Sulaimaniyah.

On 9 March, Basra Health announced the first death due to Corona to a 75-year-old man from Iran. The Ministry of Health announced the registration of six new infections in Corona, two in Najaf for two women, the first (55 years) and the second for a 36-year-old woman, one in Basra for a 75-year-old man who died later, two in Erbil and the sixth in Sulaimaniyah (previously announced). And the recovery of three previously diagnosed cases and the provincial health announced the registration of a confirmed injury in Arbil, the fourth in the province.

On 10 March, the health of the province announced the registration of a confirmed injury in Sulaimaniyah to a 19-year-old woman and the registration of another injury to a 64-year-old man from the Ashti district of the Kuesnjak district in Erbil. The Ministry of Health announced the registration of (15) cases in Iraq, (11) in Baghdad (7 in Al-Karkh and 4 in Al-Rusafa), (4) in Kirkuk. The health of Basra announced the registration of a second infection with the Coronavirus in the province.

On 11/3/2020 Karbala Health Department announced the registration of the second death of a 68-year-old injured from the people of Al-Ghadeer neighborhood. He arrived at Imam Al-Hussein Medical City night before and was in a critical health condition and died within hours. The health of Najaf announced that a member of the Iranian consul's family had been recorded in Najaf, and the consul confirmed that he would leave with his family to Iran in the coming hours to receive treatment. The health of the province announced the registration of three injuries in the Erbil governorate to a 32-year-old man and another man who was aged (34 years), and a woman aged (38 years), bringing the number of injured people in the Kurdistan Region of Iraq to (19) injuries.

On March 12, the Ministry of Health announced the registration of six new cases of coronavirus, five of which were in Baghdad (one on the Rusafa side of a 45-year-old woman, and 4 in the Medical City Hospital) and a sixth in Najaf., And on 13

March The Ministry of Health in the Kurdistan region announced the registration of nine new injuries, eight of them in the Sulaimaniyah governorate (six people belonging to the family of the deceased cleric in Sulaimaniyah recently and the seventh case belongs to a man returning from Italy and the eighth to a 48-year-old man from the people of Tuila, in Halabja, he was returning from Iran, one injury in the Erbil governorate of the ophthalmologist (Ahmed Ismail Abdel Ghani), and the Ministry of Health announced the registration of ten new injuries, five of which were in Baghdad (3 on the Rusafa side, one in the Medical City Hospital, and one on the Karkh side of a man who reached from Age (39 years) was returning from Iran) and two In Wasit

Governorate, for a man and his wife who were returning from Iran, one injury in Babil Governorate, for a 69-year-old woman from Al-Musayyib District, one in Karbala Governorate, and one in Najaf Governorate for a 71-year-old man who was returning from Iran and then died Later.

The health of Wasit announced the registration of the first death in the province for a man from the Sheikh Saad district who was returning from Iran, and Al-Rusafa Health announced the registration of two new cases of coronavirus for the first two women who had a history of contact with a sister with her from Iran and the second at the age of 72 years returning from Iran two weeks ago, the Ministry of Health announced the registration of five cases, three in Baghdad (one in Rusafa and two in Al-Karkh), one in Dhi Qar for a 23-year-old nurse who was in contact with an injured person, and one in Karbala for a 70-year-old man from Al-Hur Al-Sagheer is returning from Iran recently.

Al-Rusafa Health announced on March 15 the registration of a new injury for a 15-year-old boy from Iran with bone cancer and Darwin's syndrome, and the health of the province announced the registration of five new injuries in Sulaimaniyah, then Basra Health announced the registration of a third injury in the province to a 37-year-old man returning from Iran, and the same thing was announced by Diwaniyah Health that the first injury was reported in the province to a man returning from Iran, and the Ministry of Health announced (15) new cases, nine in Baghdad (seven in Rusafa and two in Al-Karkh), and one in Maysan for a man (57 years old), One in Diwaniya for a returning woman from Iran, and one in Dialah for a 32-year-old woman ) From the people of Daly Abbas, returning from a visit to Karbala, two in Najaf to a 54-year-old man returning from Iran, and the second to a 37-year-old woman who was in contact with her injured relative from Iran, and on March 16, Rusafa Health announced the registration of eight confirmed cases and one case A new death for a 50-year-old man from the Zaafaraniya area, and the injuries are for four men and three women (the first for a 59-year-old man) returned two weeks ago from Kirkuk governorate, and the second for a 52-year-old female from a neighborhood resident The second secretary, and the third for a 23-year-old woman from the second residence of Al-Amin, who is a stepmother The first case, and the fourth for a 48-year-old woman living in Al-Madaen, the daughter of one of the previous infected cases, the fifth for a man who came into contact with one of the previous cases, the sixth for a man (54 years), and the eighth for a 50-year-old man who lived in the Zaafaraniya area He died hours after entering the hospital, and the health of Diwaniya Governorate announced the registration of a second case, which is from the Shamiya District, and the Ministry of Health announced the registration of six cases, three in Baghdad, two at the Karkh side and one

at the Medical City Hospital, and two cases in Najaf Governorate for two women, one of whom was returning from Saudi Arabia ( His age) and the second is from Iran And a case in Diwaniya, and the health of the province announced that three injuries were recorded in Sulaimaniyah, the first of a 4-year-old child who is a resident of Al-Takya, and the second of a 45-year-old woman who is a relative of the deceased man with the virus, and the third case is a woman who is aged (27 years), and she is from the people of the city of Sulaimaniyah.

On 17March, the Ministry of Health announced the registration of (21) cases of coronavirus, (17) of them in Baghdad (15 on the Rusafa side and two in the Medical City Hospital), and three in Karbala Governorate, the first for a woman in the seventieth century who was returning from Iran and the others Women have close ties to a wounded woman, and one in Basra Governorate. The health of the province announced the registration of a new injury in Sulaimaniyah to a 27-year-old woman, who is the friend of the injured, who was diagnosed yesterday.

On 18-March 2020, the Ministry of Health announced the registration of seven new cases, five in Baghdad (Al-Rusafa side), four of them are in positive conditions, the first is a two-year-old girl, another two-year-old, a woman (42 years), and another woman (27 years) and the fifth case is For a 72-year-old woman, one in Dialah for a 67-year-old man from the Khalis district, and one in Basra for a 59-year-old woman who later died, raising the death toll to 12 cases, and the province's health announced a new injury in Sulaimaniyah for a child At the age of five years in the Al-Taqiyya district, Karbala's health also announced that two cases of Coronavirus had been blamed. The tin precedent for the case, bringing the number of casualties in the province of Karbala to (11) case.

On 19March, the Ministry of Health announced the registration of (11) new infections with the Coronavirus, four in Baghdad (three in the first Rusafa for a 54-year-old man from the people of Zaafaraniya, and the second for a 31-year-old man) the brother of the first and third casualty of a 30-year-old woman. Among the residents of the New Baghdad area was in contact with an infected case from her family, one in the city of medicine), one in Najaf, one in Basra, one in Diwaniya, one in Muthanna, and one in Wasit (for a man who is the son of the wounded man who died in the Sheikh Saad district), and two in Karbala, and the health of the province announced the registration of the first injury in the Duhok governorate to a man aged 50 years old, who was returning from Germany Oh, and the governor of Basra announced the registration of a third death of a 46-year-old woman from Iran due to the Corona virus, and the health of the province announced the registration of a new case in Sulaimaniyah to a 63-

year-old woman who is the mother of a previously infected person, and the health of Dhi Qar announced the registration of the first case The death of a 88-year-old man from the residents of Sayyid Dakhil district, the patient entered the hospital two days ago and as a result of suspicions of the injury, the patient's sample was sent to the central laboratory in the capital Baghdad and it was confirmed that he was infected with the virus, and the Ministry of Health announced the registration of (15) new cases of infection in Baghdad The first of a 66-year-old man from the family of Zaafaraniya touches with In the case of an injured woman, the second is of a 30-year-old man, the brother of the first case and in contact with an injured case, and the third is of a 56-year-old woman, the wife of the first case, all of whom are residents of Al-Zaafaraniya, and the fourth is of a 46-year-old man from the New Baghdad area who comes into contact with an infected case ), Five injuries in Najaf, three in Babel, one in Dhi Qar (later died), one in Basra, and one in Karbala for a 63-year-old man.

On 20March, the Ministry of Health announced the registration of 15 new cases, six in Baghdad (two in Rusafa and four in Al-Karkh), two in Najaf, two in Muthanna, four in Basra, and one in Sulaimaniyah, and three deaths, one in Basra , And two in Baghdad (Al-Karkh and Medical City), and the health of the province announced the registration of six cases in Sulaimaniyah, and they were five men, ages 23, 25, 40, 40 and 70 years, along with a woman of (24) years old, three of the new wounded were relatives and contacts with An injured person previously died, in addition to a returnee from Spain, bringing the total total injuries (214) cases, and the number of deaths (17) h On March 21, the health of the province announced the registration of seven new cases of Coronavirus six in Sulaimaniyah governorate for a 37-year-old man on the one hand we would break in the Rapren region, and the second for a man (aged 45 years) from Darbandikhan, and the rest from Sulaimaniyah city, and they A woman of 38 years old, men of ages 28, 62 and 48 years old, and one in the Erbil governorate of a 29-year-old man, and four of the injured had previously visited Iran and European countries, and only two of the remaining patients were in contact with former patients, On 22March, the Ministry of Health announced 19 new cases of the virus, eight in Baghdad, five On the Rusafa side, two in the Medical City Hospital, one in the Karkh side, two in the Najaf governorate, one in the Karbala governorate, one in the Muthanna governorate, one in the Erbil governorate and six in the Sulaimaniyah governorate, and four new deaths were recorded, three in the Medical City Hospital in Baghdad and one in the governorate Dialah, bringing the total number of injuries to 233 cases, and deaths to (21) cases, and the first case was recorded in Nineveh Governorate for a photojournalist working for the Iraqi media network called Muhannad Al-Anazi, who had returned from Saudi Arabia after performing the Umrah rituals, and

announced the health of the province to record ten New injuries in Sulaimaniyah, two in The city of Sulaimaniyah and seven in the Darbandikhan district and one injury in Chamchamal district, and on March 23, the health of the province announced the registration of 12 cases in Erbil Governorate, the Ministry of Health announced the registration of 33 new cases, seven of them in Baghdad (three on the Rusafa side and two On the side of Al-Karkh, two in the Medical City Hospital, two in Najaf, one in Basra Governorate, one in Nineveh Governorate, ten in Erbil Governorate, and (12) cases in Sulaimaniyah Governorate, and three new deaths were recorded in (Baghdad on the side of Rusafa, Basra, and Dialah), and announced health Karbala recorded three new injuries and two deaths, bringing the total number of injuries to pain Rude (16), four deaths, three healing cases, Nineveh Governorate recorded four new cases, which are the father, mother, brother, and sister of photojournalist Muhannad Al-Anzi, who was confirmed yesterday. The health of the province announced the registration of eight new injuries in Sulaimaniyah governorate for five men and three women, and one death Again in the city of Sulaimaniyah, and the same context, the health of the province announced the registration of six new infections in Erbil, five in the Siberian complex and one in the Soran district. Basra Health announced that the number of injuries in the province is (21), five deaths and one recovery, and Najaf Health announced the registration of (13) new cases in the province, and the Ministry of Health announced the registration of (50) new injuries three in Baghdad, two on the Rusafa side and one in Medical City Hospital, (11) cases in Basra Governorate, four in Nineveh Governorate, three in Karbala Governorate, one in Dialah Governorate, (13) in Najaf Governorate, eight in Sulaimaniyah Governorate, six in Erbil Governorate, and one in Duhok Governorate, Four new deaths were recorded, two in Karbala Governorate, one in Basra Governorate and one in Tuberculosis Governorate In Yemen, the health of Karbala announced the registration of four new cases, bringing the total number of injuries in the governorate to (20) cases, and the health of Diwaniya announced the registration of a fourth injury in the governorate for a woman from the Shamiya district, and the health of Kirkuk announced the registration of a new injury, the eighth in the province for a woman aged (70 years) Residents of the Taza region, and on March 25 above

### **The Average Temperature in Iraq and Its Relationship to the Coronavirus:**

Coronavirus (Covid 19) is related to climate elements, especially temperatures, and when monitoring the spatial and climate distribution of Coronavirus, it is clear that the virus is infected with developed countries in Europe, such as Germany, France, Italy, etc., and in Asia such as China, Japan, etc. and the United States of America, and upon verification it appears that most of

these countries fall on Converging display circuits with cold or cool cold climates. This means that they are an ideal environment for the virus. On the other hand, it means that the rise in temperature can reduce or hinder its spread. We lose his strength by increasing temperatures, and the temperature of (56 ° C) is the best degree of his death. As for Dr. Ahmed Shaheed, Professor of Virology at Zagazig University in the State of Egypt, (Covid 19) dies at a temperature of (26 ° C) which is a temperature available during different seasons except for winter in Iraq<sup>(4)</sup>.

When noting the schedule (2) and the maps (2) and (3), it becomes clear that the usual, maximum and minimum temperatures rise from January in the elected stations, as the maximum temperature in the living, Diwaniyah, Nasiriya and Basra stations has reached a degree (26 ° C) It was in it (25,1,25,4,25,9,25,7) in the month of March, respectively, and the same is true for the normal and minimum temperatures that are high compared to their counterparts in neighboring countries and the world. See maps (4) and (5) and this It makes the possibility of spreading the virus in Iraq a few, accompanied by the closure of the borders, the urban process and the interruption of travel between regions and parts of Iraq.

The measured temperatures are the temperature of the moving air and this heat is gained from the heating caused by the solar radiation, and because the air is moving, this movement greatly reduces its temperature, so the effect of the solar radiation on other fixed objects is much greater than its effect on the air, if it is The air temperature in clear air (25 ° C), because the temperature of solid surfaces and solids will reach (50 ° C), and this is what the viruses that were exposed to on the external surfaces in the period in which they entered the Iraqi territories were exposed as they were heated up to (50 ° C) throughout the center and south of Iraq Where the sky is clear for most of the days in u In March, this matter helped a lot in not spreading the virus and not spreading the epidemic much more than the preventive measures taken by the crisis cell, although it has taken many important measures, it is not our reason to limit the spread of the epidemic as much as direct solar radiation control by doing so through heating The body of bulk viruses, destroying their fatty protein coat and eliminating huge numbers of them.

So the decisive factor we have in Iraq is the state of the climate during the transmission of the virus, and here, perhaps, saying (why the number of infections has decreased in the western and northern regions despite the decrease in temperatures) Here we would like to say that they are areas that are not in contact with Iran and do not continue with tourism and economic

<sup>4</sup>[www.albawabhnews.com](http://www.albawabhnews.com)

with it and all that happened in it Injuries came from central and southern Iraq, or from a very small number of immigrants from Iran, and we return to saying that the actual direct solar radiation is one of the empty public spaces of viruses and limited the spread of the epidemic in a remarkable way among this world that was subjected to a terrible outbreak of the epidemic due to the cloudy and cold climate during a period of time Be careful Epidemic to them.

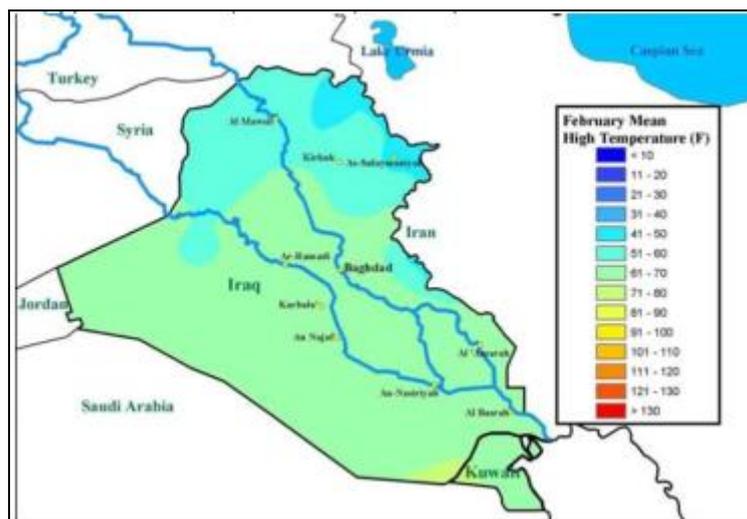
It can be said that high temperatures and low relative humidity reduce and will reduce the spread of Virus Covid 19, which is available in the climate of Iraq, knowing that this atmosphere begins with availability starting from the Baghdad governorate to go to the southern governorates of Iraq.

**Table (2)** the normal, maximum and minimum temperatures in the stations chosen for September - March for the period (2019 - 2020).

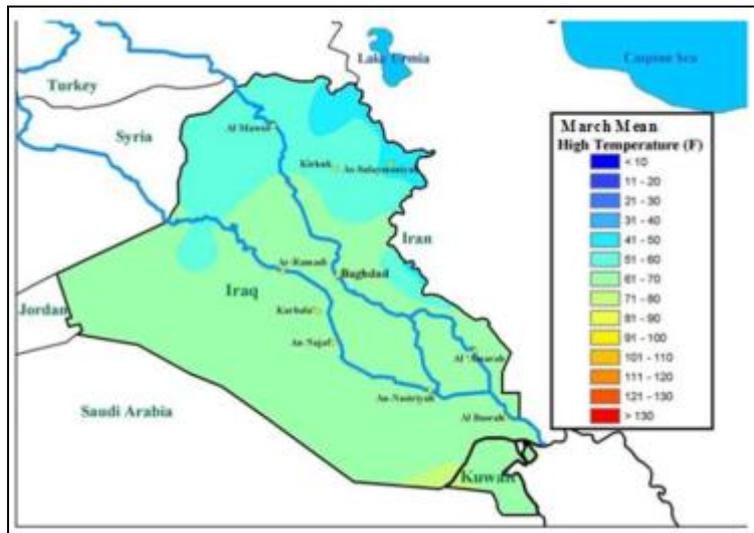
Element	The month Stations	September	October	November	December	January	February	March
The normal temperature ° C	Mosul	28.8	21.2	13.4	8.7	7.0	9.0	20.8
	Baghdad	30.9	24.8	16.5	11.5	9.7	12.5	16.8
	Hay	33.5	27.8	18.8	13.5	11.6	14.3	18.8
	Diwaniya	32.4	26.7	18.4	13.3	11.5	13.9	18.5
	Nasiriya	33.7	27.8	19.6	13.5	12.0	14.9	19.7
	Basra	33.9	27.8	19.9	14.3	12.6	15.0	19.7
The maximum temperature ° C	Mosul	38.6	30.8	21.1	14.6	12.7	14.8	19.5
	Baghdad	40.5	33.7	23.7	17.5	16.0	18.9	23.7
	Hay	42.8	35.5	26.2	19.1	17.2	19.9	25.1
	Diwaniya	42.7	34	42.9	18.6	17.0	19.8	25.4
	Nasiriya	42.8	35.8	26.4	19.7	17.6	20.3	25.9
	Basra	42.9	36.5	26.9	20.4	17.9	20.8	25.7
Minimum temperature ° C	Mosul	17.1	14.3	8.2	4.1	3.1	3.3	6.9
	Baghdad	21.4	16.7	9.6	5.5	4.4	6.0	10.4
	Hay	24.9	20.5	13.6	8.2	6.8	8.9	12.2
	Diwaniya	23.5	19.3	12.1	7.5	5.7	7.6	12.2
	Nasiriya	24.3	19.4	12.6	7.8	6.6	8.5	12.2
	Basra	25.5	20.9	14.3	9.1	7.5	9.2	14.2

Source: Researchers relying on the Iraqi General Weather Authority and seismic survey, climate section, unpublished data, 2020.

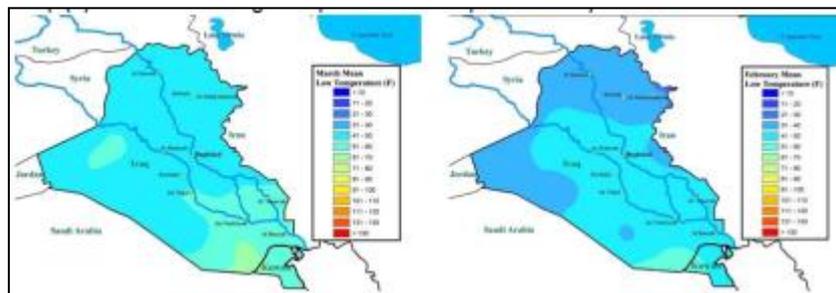
Map (2) the maximum temperature in Iraq for February 2020



Map (3): Average maximum temperature in Iraq for March 2020



Map (4) the lowest average temperatures in Iraq for February and March 2020



## CONCLUSIONS

1. The Coronavirus will end in continuous high temperatures, and that the approaching summer months in Iraq will lead to its complete end in Iraq.
2. That access to a vaccine that resists the "emerging corona" is the only solution to stop any new mutation of this virus with the advent of winter as the virus activates like other viruses.
3. Researchers do not expect any mutation to occur during the summer months because the virus dies in this period, and therefore no mutation can occur until the return of winter and the cold weather in which the virus lives.
4. Not finding a vaccine to fight the virus means the emergence of a new wave of the virus with the advent of winter.

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