

The Vicious Variants of the Coronavirus. The Possibility of 4th Vaccination

Shimon Shatzmiller*, Ludmila Buzhansky, Inbal Lapidot, Galina Zats and Rami Krieger

Department of Chemical Sciences, Ariel University, Ariel, Israel

*Corresponding Author: Shimon Shatzmiller, Department of Chemical Sciences, Ariel University, Ariel, Israel.

Received: November 29, 2021; Published: May 30, 2022

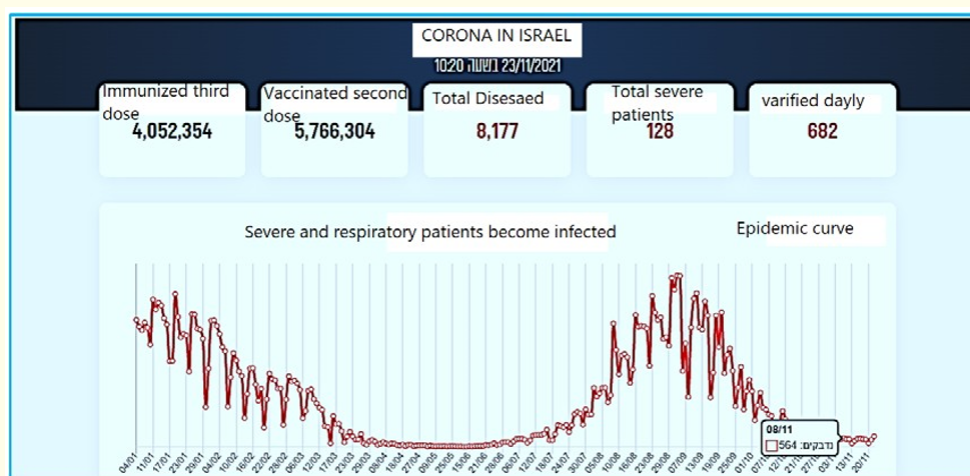


Figure 1

Preparing for aggravation: These are the decisions made in the Corona Cabinet all the details.

The ministers convened to discuss the next steps in the fight against the plague. Meeting adjourned in the shadow of the increase in the coefficient of infection. And the start of the children's immunization campaign. During the meeting, the Prime Minister instructed to prepare for another test operation among all the students. Just before returning from the holiday break.

The Corona Cabinet convened today (Tuesday) to discuss the next steps in the fight against the plague, in the shadow of the increase in the infection coefficient, which stands at 1.08, and the vaccination campaign for children aged 11-5, which opened today. During the discussion, the ministers have dealt with a lot of morbidity among children recently, and Prime Minister Bennett instructed to prepare for an antigen test that will be conducted for students before returning from the Hanukkah holiday.

The discussion presented the state of the disease nationwide by the professionals in the Ministry of Health, and also prepared for the child vaccination campaign that began today. The ministers also discussed preparations for the Hanukkah holiday performances, following a discussion held earlier this week chaired by the Prime Minister and the Minister of Health.

As mentioned at the end of the discussion, Prime Minister Bennett has instructed to promote another antigen campaign in the education system after the Hanukkah holiday. In addition, he recommended to continue promoting the national information campaign to increase immunization and target two main target audiences: children aged 5 - 11, and people who have not yet received the third vaccine. With an emphasis on youth.

It was also decided to extend the regulations implementing the green label outline and occupancy restrictions in enclosed spaces for an additional two weeks, subject to the approval of the Knesset's Constitution Committee. It was further decided that at this stage the existing situation will continue and no easing or worsening of the corona guidelines is expected.

The discussion was attended by the Minister of Health, the Minister of Foreign Affairs, the Minister of Education, the Minister of the Interior, the Minister of Justice, the Minister of Internal Security, the Minister of Housing and Construction, the Minister of Culture and Sports, the Minister of Social Equality, the Minister of Tourism, the Minister of Finance and the Minister of Innovation. , Director General of the Prime Minister's Office, Director General of the Ministry of Health, Director General of the Ministry of Public Health, Corona, Head of Public Health Services at the Ministry of Health, Commissioner of Budgets at the Ministry of Finance, Deputy Attorney General, Deputy Minister of National Security, The commander of the Home Front Command, who is in charge of defense in the Ministry of Defense, and other professionals.

At the beginning of the discussion, Prime Minister Naftali Bennett said: "There is a very strong and very severe wave of the Delta strain that has hit the world in Eastern Europe and now also in Western Europe. Austria in general closure. From the fact that they did not do the boosters on time".

Here in Israel we control the plague well. We also took over the fourth wave without closing businesses, making a general closure and without preventing studies, and we also created a set of tools that were not like serologists and antigens to control disease. Here in Israel there is a disturbing trend of children. "And the number of respirators is good, but we know that illness also brings in serious patients later on. Therefore, the goal is to prevent serious illness and not to reach insufficiency, but we must not ignore metrics that give a picture".

We set out today with the children's vaccination campaign. There are about 3 million children in the world who have been vaccinated. It is very important that we give a boost to this move. There are currently no components of pressure through incentives or green notes. "For symptoms such as heart inflammation, it is higher in children with corona than in children with corona".

Bennett stressed: "In my experience, some things may come out so please do not say things that could hurt the campaign. I want to thank the people of the Ministry of Health, Dr. Sharon Elrai who suffers unbearable attacks when she does a good job. The way it is conducted is parallel to the war".

Corona projector Prof. Salman Zarqa: The last two weeks have been on the rise, the main morbidity is in the young age group. We are testing more there compared to the adults. Our solution is vaccines. "Hopefully we can put out this fire".

The project manager later referred to the children's vaccination campaign: The vaccines have already reached the health funds, some started vaccinating yesterday. We are talking about vaccination mainly through health funds, child health centers, there is a wide deployment in the afternoon as well. If there are accessibility problems Local.

He added: "Also preparing for the possibility of vaccinations in schools, there are more than 3,000 Corona loyalists in primary schools. Later on Hanukkah events, with vaccine mobility. There is a national outreach effort. The morbidity is usually mild in children but there is

a long-term risk. "We will be accessible, and parents can make an informed decision that we hope will be positive. The vaccine is safe, in the United States the vaccine is given. We are in favor of returning to normal".

Bennett: "How many children were we vaccinated today? On the first day of the operation?"

Zarqa: "I do not have an answer yet, I will update immediately. But I hear from the box office that there is over booking".

Bennett: "One of the things I found to reassure parents is transparency. The second thing is that children's vaccines are with a third of the amount of adult vaccines. This is a small figure that helps convince parents who are hesitant. I really ask everyone to set a personal example. To speak calmly and calmly. I think that with a soft information approach we will succeed in convincing parents to vaccinate their children".

Prof. Doron Gazit: "There is a real increase. It is not a matter of tests, it is really a disease. We need to check what has changed. Ventilation can lower infections in the classrooms".

Bennett: "I ask Edri to understand how much it costs to automate the classrooms in Israel with a ventilation system. I want to know costs by Sunday".

Gazit: "A green mark should be imposed on unvaccinated staff members. In the matter of the Shafatz, members of the household of people who have been found sick will undergo tests before returning to work. We got to winter, so I think with side effects one should be encouraged to stay home. Adherence to a green sign at Hanukkah events".

Prof. Ran Blitzer: "Amputation of chains is effective only in low numbers. So, activity should be increased now and not when the morbidity is high. There is a month.

Since the first human infection with SARS-CoV-2 in December 2019, many protein subunits have been proposed for use in humans. Subunit vaccines use one or more antigens appropriate to elicit a robust immune response. However, the main concern is the efficacy of subunit and antibody vaccines generated to neutralize SARS-CoV-2 variations such as B.1.1.7 (Alpha), B.1.351 (Beta) and P1 (Gamma), B.1.617 (Delta) and C.37 (Lambda). Protein Spike (S) is a potential fraction for use as an antigen in vaccine development. This protein plays a crucial role in the first stage of the infection process, as it binds to the Angiotensin-Converting Enzyme 2 (ACE2) receptor and enters the host cell after binding. Specific antibodies caused by the receptor binding domain (RBD) vaccine may effectively block and prevent the virus from invading. This review focuses on the effect of mutational spike versions of SARS-CoV2 (alpha, beta, gamma, delta, and lambda) on the efficacy of recombinant subunit vaccines. To date, little or no significant effect on vaccine efficacy against alpha and delta versions has been reported. Such an impact on vaccine efficacy for beta, delta, gamma and lambda versions may be even greater compared to the alpha version. However, more comprehensive analyzes are needed to assess the true impact on vaccine efficacy caused by SARS-CoV-2 variants [1].

The salient feature of viruses is that they hijack, in favor of their reproduction, the cellular mechanisms of the creatures (humans. Animals, etc.) for the benefit of their reproductive process [2].

So is the coronavirus that kidnaps the reproductive mechanism of the living creature, for example, man, to produce the new generations.

In this reproductive process, various defects sometimes occur. Still, most of these mutants are destroyed and not manifested, but sometimes there are mutants that last and some are more vicious than the virus that created them. So far, about 6 evil mutants in these have been studied.

WHO label	Pango lineage*	GISAID clade	Nextstrain clade	Additional amino acid changes monitored*	Earliest documented samples
Alpha	B.1.1.7 #	GRY	20I (V1)	+S:484K +S:452R	United Kingdom, Sep-2020
Beta	B.1.351	GH/501Y.V2	20H (V2)	+S:L18F	South Africa May-2020
Gamma	P.1	GR/501Y.V3	20J (V3)	+S:681H	Brazil, Nov-2020
Delta	B.1.617.2§	G/478K.V1	21A	+S:417N	India, Oct-2020

WHO label ⁵	Pango lineage*	GISAID clade	Nextstrain clade	Earliest documented samples	Date of designation
Lambda	C.37	GR/452Q.V1	21G	Peru, Dec-2020	14-Jun-2021
Mu	B.1.621	GH	21H	Colombia, Jan-2021	30-Aug-2021

Figure 2: The table lists the same mutants that have caused great suffering and immense damage all over the planet.

The news about COVID-19 seems flooded with Greek letters. We hear about viral versions like Delta and Lambda, a terminology used when scientists understood the unintentional bias (and sometimes the persecution) associated with the geographical labeling of versions. A century later, considerable frustration remained in some circles given that the “Spanish influence” apparently began in Kansas. However, Spain took the blame because it did not participate in World War I and was not censored. In addition, the Spanish press reported infections of their royal family (although the British royalty suffered at the time), thus creating a label that continues to this day. To avoid repeating this mistake, the classification of new versions is similar to the hurricane terminology, with alphabetical names of significant new versions.

Like everyone before and others who have yet to arrive, this epidemic begins when a virus infects a person. This “patient zero” is the first victim of an elaborate series of microscopic abduction events. SARS- CoV-2, like all viruses, seeks out hosts, which it can subdue and manipulate to promote its spread and thus ensure its survival.

But this kidnapping of the body is pretty imperfect. More precisely, the production of new viruses by an infected person tends to be quite sloppy, well below the error rate of those trained in Six Sigma. For example, on average, the mechanism that produces SARS-CoV-2 makes about one error per 300,000 nucleotides. Given that the viral genome (all complementary to its RNA) comprises 30,000 base pairs, this means that about one in ten virus particles released by an infected cell will be a mutation.

Most mutants have no effect or they may even create a defective virus. Indeed, it is understandable that a mutation is a good thing since it necessarily limits the number of infectious viruses. The problem is that each infected cell produces something on the order of a thousand offsprings. These viruses in turn, infect other cells and the result is a dramatic expansion inactive viral particles.

A closer look reveals that mutations in SARS-CoV02 tend not to be random but focus on a specific viral protein, known as a “spike”, or “S” protein. If a change in S would allow the virus to become even more skilled at harvesting its prey, then the evolutionary mechanisms

Citation: Shimon Shatzmiller., et al. “The Vicious Variants of the Coronavirus. The Possibility of 4th Vaccination”. *EC Pharmacology and Toxicology* 10.6 (2022): 34-52.

of “most appropriate survival” would enable this mutant to become more common. Thus, when this new immigrant expands within the population, he eventually earns the nickname of the “variant”.

You’ve probably heard of S. It’s the viral protein that allows SARS-CoV- 2 to bind to and then abduct human cells. Most spike mutations can be harmful in the short term. With enough time and food (i.e. you and I), evolution tends to work against us.

More viruses require more mutations and therefore, inevitably, more variants. Eventually, the most powerful versions will dominate. This is exactly what we are seeing with the current Delta blow. Delta is a mutation whose survival has been facilitated by its ability to infect its prey effectively. Masks and ultraviolet radiation may slow down the spread of early viruses (hence the lack of need for outdoor face masks). However, enough people chose not to wear face masks indoors (or even recognize the severity of the epidemic) until we quickly got to the point where the mutations in the S that gave birth to Delta became less sensitive to these pressures.

Despite this failure, we can be excited that the Delta variant remains quite sensitive to vaccines presented by Moderna, Pfizer, Johnson and Johnson, and others. Indeed, the recent recovery in hospitalizations and avoidable deaths occur mainly with people who are for now. But the problem does not end in the Delta.

The fact that so many people have rejected the vaccine gives the virus more chances to deploy its mutational ability to our detriment, this time in even more dangerous and potentially catastrophic ways.

Moreover, by refusing to wear a mask and denying a vaccine, anti-wax drugs have created the perfect conditions for the rise of less sensitive versions than ever to the safest and most effective vaccines introduced less than a year ago.

For a short period, we begin to identify versions that can cause problems for those who have refused to be vaccinated and for their family members and vaccinated friends. The Lambda version, in particular, produces considerable anxiety among some scientists. Unfortunately, the Lambda will probably not be the last either. The combination of mutation and renewed high-risk behaviors (e.g. banning masks in schools or rejecting vaccinations) will undoubtedly lead to even more dangerous versions.

Despite all this annoying news, there are reasons for hope. First, the current rise in serious infections and death is mostly limited to those who have rejected the vaccine. In other words, very few vaccinated people come with a disease that is difficult to require [3].

The COVID-19 versions have gone up so severely that they are now named after Greek homes [4].

The World Health Organization will call this month’s new mutation “Alpha, Chi, Omega”.

While variant Mu flies aimlessly up South America on its way to the U.S., scientists worldwide are watching in horror as Coronavirus mutations continue to emerge. Dr. Shioli Hall, a resident of the University of Wisconsin Hospital, sat down with the Herald to provide insights into the need for more complex COVID-19 nicknames. “The [World Health Organization] currently has an interest in at least twenty more mutations that have come down from the pike”, Hall said. “We only have 12 Greek letters in our pocket before we start doubling and tripling the names”. According to Hall, leaving the Greek and switching to an alphabet or alternative numbering system is out of the question because no one ever does. “It just looks weird”, Hall said. A word from disappointed freshmen: What the hell is a certificate? Everyone remembers where they were when their advisor told them, “We call it a certificate here”. I sure remember where he read ... At a news conference last week, CDC Director-General Rochelle Valensky announced to the public a mutation that is erupting in Spain.

“The World Health Organization will call this new version Alpha Chi Omega”, Valensky said. “The signs and symptoms are mostly suitable for SARS-CoV-2 B.1.1.7, or the British strain, but your lashes grow and you start using claw clips to lift your hair”. The Pan-National

Conference, an advocacy organization, actively involved in the membership of this nation, receives the latest name overlaps. "As long as the more deadly strains are named after the more problematic episodes, we're fine with that", spokesman Jamie Hernandez told the Herald. "Some of these housewives we deal with are so annoying, and a connection with a deadly virus can do some good to their egos". Hernandez declined to comment after further investigation into the implication that death should be exploited against a confession in Chavruta. Many college students in the U.S. are responding to the recent rise in tripled COVID-19 versions in different ways. Pre-match discussion clips: How to send it entirely in 2021 "Ahhhh yes, 2021. This fall semester is the first for many badgers out there. Not only is this the first reading".

Riku Tanaka, an international graduate student at Columbia University, sees this choice in terminology as a risk to prevent on-campus conversation. "If it's noisy and crowded, one might wonder if he'd just heard someone's life condition or health condition, and that's a strange problem there is", Tanaka said. But, according to student B in the state of Oregon, Malik Kraft-Mohani, COVID-19 names siblings and fraternities improves health literacy. As a result, some students know more about which Greek homes to fear on their campus, and they can base the judgment on which COVID-19 mutations should be aware.

"Some of these houses are so harmful and some are perfectly fine", Jones said. "If no one knows which COVID strains they should be aware of, as long as they know which siblings to avoid, at least they will have a basic knowledge of the virus". The prevalence of new mutations affects everyone, but COVID-19 bearing this dual essence has led to some sense of fearlessness.

Amanda Langdon, a young woman at the University of Berkeley, does not feel any discomfort because of the Pi Kappa Alpha strain, which has been said to be circulating in the Middle East since July. "No, believe me", Langdon said. "I went out with some guys from PIKE. They can't do much". In the end, it's all a matter of staying safe and secure. There will always be risks, and there will always be more dangerous variations. You just have to be careful about which of them take extra care. "Right now, the APhi and SAE strains are the ones to pay attention to", Dr. Hall said and ended her interview. "But everyone could probably see those coming".

In Israel: Hanukkah, disregard for guidelines - and children's vaccines. the fear of a new wave, and the reasons for optimism.

The virus is raging in Europe, and now in Israel, the infection coefficient indicates spread. From winter, through the loosening of green light enforcement to the million Israelis who did not receive a booster: these are the reasons for fear of a fifth wave. Bennett calls this a wave of children - these are the data of infection by age. The government advocates "soft persuasion", will the stars of the festivals be recruited?

The corona is raging in Europe, winter is approaching and with it more gatherings are expected in the closed spaces, and the holiday of Hanukkah performances are also approaching - all these when the coefficient of infection is already higher than 1 and now indicates a re-spread of the virus. So, the question now is: Is Israel on its way to a fifth wave, or a "wave of children", as Prime Minister Naftali Bennett often calls it? However, these are the reasons for concern and optimism.

They were focusing at the start of the vaccination campaign for 5 to 11- year-olds this coming Tuesday.

The coefficient of infection is higher than 1.

The infection rate, the number R, has risen steadily in recent days. Last night (Saturday) already crossed the 1st threshold and now stands at 1.02 - a figure that indicates a re-spread of the epidemic: from Sunday to Friday this week, 2,952 Israelis were diagnosed positive for the virus, compared to 2,879 In the first six days last week - an increase of 2.53%.

Prof. Dror Mevorach, (director of the internal medicine department at Hadassah Ein Kerem Hospital in Jerusalem) warned over the weekend: “the increase in the infection coefficient requires close monitoring of the epidemic. Once the infection rate is higher than 1, “And we’ll get into some kind of epidemic outbreak. We all need to be careful and understand that we are no longer in decline”.

Children’s morbidity - and Hanukkah performances

In his recent statements to the media, Bennett often refers to the current illness as the “wave of children”, and in his remarks last night, he noted that 49% of new infections are between the ages of 11-0. In addition, the Prime Minister has announced that he will also enter a special discussion regarding Hanukkah and the festival season. “At this stage, it appears that the events will take place on the basis of the green label rules”, he was quoted as saying. “It will be made clear to the organizers that surprise checks will be carried out and that the green mark will be enforced. In addition, the prime minister wants to see these events as an opportunity - for example, one of the ideas is to set up inviting immunization stations near the halls.

According to the Ministry of Health, in the last 30 days 33.1% of the verified (i.e. a third of them) are aged 0 to 9, in addition to 27.3% are aged 10 to 19. That is, over 60% of the verified since October 21 are less than 20 years old. The data also show that 9.3% of those verified in the last month are in their 20s, 12.1% in their 30s and 9.2% in their 40s and 3.9% aged 50 to 59.

About 2.7% of those verified in the last 30 days are in their 60s, 1.6% in their 70s, 0.7% are 80 to 89 years old and 0.1% are 90 years old or older. In fact, since October 21, 24 Israelis aged 90 and over have been diagnosed as positive for Corona. This shows that 5.1% of those verified in the last month are over 60 years old.

Even though more than 60 percent of those verified are under 20 - there is no seriously ill patient currently between the ages of 0 and 19. Eight serious patients in their 20s are hospitalized - six unvaccinated and two with a valid vaccine. Seven patients hospitalized in critical condition are in their 30s who are not vaccinated at all. In addition, 29 critically ill patients in their 50s are hospitalized - 26 unvaccinated, two vaccinated without validity and a single patient defined as vaccinated.

The highest number of serious patients is in the age group 60 to 69. 31 Israelis of this age are hospitalized in critical condition - 26 unvaccinated, two vaccinated without validity and three vaccinated.

Among Israelis in their 70s there are 20 critically ill patients - 13 unvaccinated and seven vaccinated and among those aged 80 and over there are nine critically ill patients - six vaccinated and three not. The rate is less than 10%, of those who are not vaccinated at all in the age group 60 and over.

The fear of the outbreak in Europe - and from Ben Gurion Airport

Some health experts also express concern about the possibility of importing new diseases through Ben Gurion Airport. However, the data have so far not indicated a significant disease coming from abroad, and others believe that current procedures prevent a “loophole” there. At the top of the Ministry of Health regarding possible facilitations for travelers abroad, so that they can be satisfied before boarding a flight back to Israel with a quick antigen test and not a PCR test, has provoked criticism from some of the experts. It should be noted that even if this relief is approved, the obligation of PCR tests after landing at Ben Gurion Airport will remain.

“Now is the time to be very vigilant, especially at Ben Gurion Airport and among those returning from abroad”, said Prof. Gili Regev-Yohai, director of the Infection Prevention and Control Unit at Sheba Hospital in Tel Hashomer. “People will come into the country five days after landing in the country”, she said.

The experts' concern comes as stated against the background of the severe eruption experienced by countries across Europe, from the east to the west. In Austria, for example, a full closure has already been imposed a few days after the closure. This concerns the unvaccinated only. And now even in its neighbor Germany the possibility of such a drastic step is not ruled out. The director-general of the Ministry of Health, Prof. Nachman Ash, also expressed concern about the situation in Europe and stated in an interview at the Ynet studio that countries may again be defined as red, so that the flight to them will be banned in practice [5].

Winter - Gatherings indoors

"As in the US, the rise in morbidity there in the last two weeks is attributed to the cooling weather leading to more gatherings indoors. Those in the country express concern that this will contribute to a rise in morbidity". Prof. Cyril Cohen, an expert in the immune system at Bar Ilan University.

Riots in an anti-Corona demonstration in Holland, police shoot demonstrators

The Netherlands is in partial closure. Planning restrictions on the unvaccinated people. Many protesters rioted last night in Rotterdam, setting fire to cars and throwing stones at police - who opened fire and seriously injured two protesters. Mayor: "This is an orgy of violence". Tens of thousands protest in Austria against national closure: "No to vaccines, enough to dictatorship" [6].

In Rotterdam in the Netherlands, there were riots last night (Friday) protesting the corona restrictions, while the country is amid a partial closure in light of the rise in morbidity. Police in riot gear stormed a rally on Friday, removing 51 protesters by truck. Seven injured in the riots, including two protesters who were hit by gunfire and hospitalized in critical condition. The mayor called the riots an "orgy of violence".

View the gallery

Hundreds of protesters rioted in the port city. They set fire to a police car, cars and electric scooters, lit candles and threw stones at police officers. The mayor of Rotterdam, Ahmad Abu-Taleb, said that the police opened fire on the rioting protesters in addition to the warning shots.

"In some cases the police felt the need to pull out their weapons to protect themselves. They shot at protesters, people were injured", the mayor said. "It was an explosion of violence. One can't think of another way to describe it". Police are investigating the incident and are investigating whether police indeed shot the protesters [7].

Germany is moving to impose new epidemic regulations against the backdrop of record numbers of cases.

The measures include a rule that only those who have been vaccinated, recovering from an infection or a negative test can travel by public transport or get to work in person.

German lawmakers approved stricter Covid restrictions on Thursday, a day after the head of the national agency responsible for monitoring the epidemic warned of a "really bad Christmas" and said the corona virus had once again become a nationwide state of emergency.

"Every human and mouse that can be vaccinated should be vaccinated now", said Luther Wheeler, head of the agency, Robert Koch Institute, in a video discussion with the leader of Saxony, the German state with the highest infection rates.

"Otherwise", Dr. Wheeler added, "we will not control this crisis".

The remarks allegedly heard by a scientist of ordinary fitness came when Germany published another record in new infections every day. The agency reported more than 65,000 new cases on Wednesday - a 61 percent increase from two weeks earlier - and 264 deaths.

On Thursday, lawmakers in parliament approved a bill whose steps include a rule that only people who have been vaccinated against the virus, recovered from an infection or a negative test can travel on public transport or participate in work in person. Less than 70 percent of Germany's population is fully vaccinated.

The new measures, proposed by the parties expected to replace Chancellor Angela Merkel in government, will also oblige employers to offer the option of working from home if possible.

To take effect, the rules must also be approved by the leaders of 16 German states, a move that is expected to take place on Friday. Since proposing the bill early last week, the parties have tightened some of the proposals amid criticism that the means were insufficient to stem the recent outbreak.

Saxon Gov. Michael Kretschmer said Thursday that his country's lawmakers will vote Friday on new tough lock-in measures. He described the restrictions as a "hard and clear breakwater" that would last for several weeks.

Ms. Merkel is scheduled to meet with state governors on Thursday afternoon to try to formulate a unified strategy and discuss ways to increase the vaccination rate.

Authorities in the Netherlands have announced that police are expected to make further arrests as Rotterdam city center - the area where the riots took place - is networked with security cameras. Police from across the country arrived in Rotterdam last night to help local police deal with the rioting protesters. Local media reported that gangs of football fans were involved in the riots.

In response to the riots, Dutch Justice Minister Fred Harper has said that the "extreme violence" of the protesters against the police and firefighters in Rotterdam is "repulsive". He added: "The right to demonstrate is very important in our society, but what we saw last night is simply criminal behavior" [8].

Following the riots in Rotterdam, a similar demonstration that was supposed to take place in Amsterdam was canceled. Although organizers announced its cancellation, several hundred protesters arrived at Dam Square in the city center.

Last week the Netherlands announced a partial closure for three weeks, including early closure (at 20:00) of pubs, restaurants and clubs. Protesters in Rotterdam protested the government's intention to impose restrictions on the unvaccinated: nowadays restaurant and pub owners are demanding that Dutch people present a "Corona certificate" at the entrance, which is given to the vaccinated and recovering. Even those who are not vaccinated are eligible for the certificate, but should present a negative corona test. The Netherlands plans to limit the certificate to the vaccinated and recovering only.

In Vienna in the afternoon, tens of thousands of people protested the national closure that will begin on Monday - about a week after the entry into force in Austria of an unvaccinated closure only. The far-right Freedom Party, which has promised to fight the new restrictions, was one of the organizers of the demonstration. The masses gathered in the Heroes' Square in Vienna and waved signs that read, among other things, "No to vaccines" and "overthrow the fascist dictatorship". Demonstrations against corona restrictions are also expected during the day in Switzerland, Croatia and Italy.

Thousands in demonstration today in Vienna

Austrian Chancellor Alexander Schellenberg announced yesterday that the national closure will last at least 10 days, and may be extended to 20 days if necessary. Schellenberg also announced that as of February 1, a vaccination requirement will apply to all citizens. Now, a

Some countries have required workers in certain industries to be vaccinated, but no overall duty has been imposed on the public. These are civil servants, health system workers and other industries.

As part of the full closure in Austria, shops will be closed and cultural events will be canceled. Schools will not be closed, but Austrian Health Minister Wolfgang Spitz has said only those who need to attend will do so. He called on parents to keep the children in their homes as much as possible.

The immunization rate in Austria is among the lowest in Western Europe and stands at 66%. The infection rate in the country is the highest on the continent, and in the last week it has reached 991 per 100,000 inhabitants.

Immunized vs. unvaccinated: Europe's cubid culture war [9]

In the pockets of Europe, resistance to vaccines has become the long tail of the populist nationalist movements that have rocked European politics for a decade.

Every Monday, tough anti-vax activists hold a rally in the town of Annberg-Buchholz, in East Germany.

ANNABERG-BUCHHOLZ, Germany - Sven Müller is not proudly vaccinated. He thinks Covid vaccines are ineffective and unsafe but a way to make money for drug companies and corrupt politicians who take away his freedom.

According to state law to stop coronary heart disease, he is not allowed to go to restaurants, a bowling alley, a movie theater or a barbershop. Starting next week, he will also be banned from entering most stores. But that only strengthened his determination.

"They can not break me", said Mr Müller, 40, who owns a bar in the town of Annberg-Buchholz, in the mountainous region of eastern Saxony, where the vaccination rate is 44% - the lowest in Germany.

Mr. Müller embodies a problem that is as sharp in some parts of Europe as it is in the United States. If Germany had red and blue countries, Saxony would be crimson. In such places, the pockets of unvaccinated people are driving the latest round of infection, filling tense hospital wards, endangering economic recovery and sending governments to face a fourth wave of the plague.

Even when studies show that vaccination is the most effective way to prevent infection and avoid hospitalization or death if infected, convincing those who are deeply skeptical about vaccines has proven almost impossible. Instead, Western European governments are increasingly resorting to thin coercion with a mixture of mandates, incentives and penalties.

Sven Müller at his bar in Annberg-Buchholz. Most of his patrons are not as vaccinated as he is, he says.

In many countries it works. When President Emmanuel Macron declared in July that vaccine passports would be required to enter most social places, France - where the feeling against vaccines was strong - was one of the least vaccinated countries in Europe. He currently has one of the highest vaccination rates in the world.

Italian Prime Minister Mario Draghi followed in the footsteps of Mr Macron in even more harsh measures. In Spain, most of the attempts of populist parties to provoke a broad response against vaccines were erased.

But regional opposition to the corona vaccine remained unchanged. Moreover, the problem is more persistent in Central and Eastern Europe and German-speaking countries and regions bordering them.

Italy, the northern province of Bolzano - bordering Austria and Switzerland, where 70 percent of the German-speaking population - has the lowest vaccination rate in the country. Experts have linked a sharp rise in infections there to frequent exchanges with Austria, but also to a cultural tendency among the population for homeopathy and natural healing.

“There is some correlation with far-right parties, but the main reason is this trust in nature”, said Patrick Franconi, a doctor who heads the county’s immunization campaign. Especially in the Alps, he said, the German-speaking population relies on fresh air, organic produce and herbal teas more than traditional drugs.

In fact, Germany, Austria, and the German-speaking region of Switzerland have the largest chunks of unvaccinated populations in all of Western Europe. About one in four people over the age of 12 are not vaccinated, compared to one in 10 in France and Italy and almost none in Portugal.

Sociologists say that in addition to an influential culture of alternative medicine, resistance to vaccines fueled by a strong tradition of decentralized government that tends to fuel distrust of rules imposed by the capital - and an extreme right-wing ecosystem that knows how to exploit both.

Opposition to vaccines, said Pia Lamberti of CeMAS, a Berlin research organization focused on disinformation and conspiracy theories, is in some ways the long tail of populist-nationalist movements that have rocked European politics for a decade.

“Radical anti-waxers are not a huge group, but they are large enough to cause a plague problem”, Ms. Lamberti said. “It shows the success of the far right.

Director-general of the ministry of health: “Fourth vaccine? matter of time”

Prof. Ash says in an interview with the Ynet studio that “there is no room to panic” following the increase in the infection coefficient: “You can live with today’s numbers, they are not that high. But if the coefficient continues to rise, we will have to do a reverse for relief”. He estimates that in the future we will need a fourth vaccine dose: “A matter of time, the question is how long”.

In an interview with the Ynet studio, the Ministry of Health director- general says that “there is no room for panic at the moment”, following the slowdown in decline in Corona in recent days. However, Prof. Nachman Ash warns that “ He said he estimates that the protection given by the third vaccine dose will also decrease over time, so it will be necessary to get vaccinated again from time to time:

- Bennett sets a goal: by the end of December - to vaccinate more than half of the children
- Operational Investigation to Prevent Child Immunization: “False Information, Conspiracy Theories”.

The fear of a new wave and the reasons for optimism

Over the weekend, the adhesion coefficient R rose to more than 1 and reached 1.02. The decline in the number of verified people every day is halted. Now the plague is spreading again. “We’ll have to see in the next few days where this is going”, Prof. Ash said. “It’s worrying. You can live with today’s numbers, they are not that high. We would like to see them lower, but the main thing is that the morbidity will not increase again”.

What steps are at stake if the trend continues? “In the next few days it’s the immunization. In the future, if the coefficient of infection goes up and we see it go up towards 1.2, we will have to do a reverse to the concessions we have given recently, especially a crowd limit. I hope we do not reach that”.

Most of the outbreak is in children and most adults are vaccinated, so maybe it will not expand. "I want to mention that there are about a million people here, mostly young people, who have not received the booster dose and they do have the potential for infection. As time goes by from their second dose their vaccine fades more and more. So spread can be through this population.

Queues are opened for pediatric vaccines.

The next day, the vaccination of children aged 11-5 is scheduled to begin. All the health funds announced this morning: the scheduling of appointments for the children's vaccines was opened this morning to the insured. The children can be vaccinated with the help of one of the parents.

Prof. Ash says his ministry is trying to take a balanced approach that will encourage immunization but not create an atmosphere of coercion. "We understand the sensitivity of the children's vaccine. On the one hand, they really say clearly - you have to get vaccinated, this is the solution for the child so that he does not get infected, and many children still get infected today and it should be prevented. "They will come to get vaccinated. A health decision must be made by the parents in front of the children, and our information must be overcome in the coming days in this matter", he said.

Do you anticipate an onslaught on vaccine hotspots in the coming month? "In the polls there were 40 percent who said they would get vaccinated. I hope they will get vaccinated quickly and the numbers will be significant in the coming days. We will have to invest in publicity".

Why not vaccinate in schools at the same time? "From an analysis we did we saw that the most effective vaccine is through the HMOs. We estimate that parents will want to accompany the children to the vaccine, and it will be more convenient. We will also be vaccinated in schools, but we will do it in coordination with the schools. "It's much more spotty, just like we've done so far at older ages".

Education Minister Yifat Shasha Bitton says that you did not contact the schools about vaccines. Did you apply? "We apply all the time. We are in touch with the Ministry of Education. When there is a need to coordinate with a particular school there is a procedure that is done on an ongoing basis".

The Ministry of Health director general also referred to the atmosphere of "victory" at the end of the fourth wave and clarified that the joy was premature. The plague and disease are still here, we see what is happening in Europe. Anything can happen to us, caution is as good for today just as it was for the height of the wave. You have to pay attention to a green sign and masks".

Prof. Ash noted that at the moment, there is no decline in the defense that gives the impetus, but in his estimation, this level of defense will decrease later, and in the future more shots will be given. "I estimate that the antibody level goes down even after the booster, it can not stay at a high level on a regular basis. The question is how much does it go down, from what levels did it start and if it manifests itself in adhesions".

Is there a scenario that Israel goes for a fourth vaccine? "It's probably a matter of time. The question is what is the time, because if it's a year then we'll be very happy. If we see the decline significantly again after half a year, of course it's a bigger burden. In any case it probably won't last many years, "The booster, and we'll have to keep getting vaccinated every season. I hope it will be a year or more" [10].

South Africa: Scientists identify the new version of COVID-19

The South African health minister has said a specified version of the corona virus is causing "serious concern". Scientists have said the version, which has spread rapidly among young people, may be behind a national leap in cases.

Scientists from South Africa have identified a new version of COVID-19 that poses a “major threat” to efforts to curb the virus, officials said at a news conference Thursday.

Health Minister Joe Pahala said the version, called B.1.1.529, was behind an “exponential” increase in the number of reported cases in the country.

“[It] is now a version of serious concern that is leading the jump in numbers”, Pahala said.

Virologists have discovered nearly 100 cases related to the version in the country.

Last week, South Africa saw about 200 approved new corona virus infections a day, and then the new daily cases grew to more than 1,200 on Wednesday and climbed to 2,465 on Thursday.

What do we know about the version?

B.1.1.529 has multiple mutations and this can help it evade the body’s immune response and make it more transmitted, scientists have warned.

“Although the data is limited, our experts are working overtime with all the surveillance systems set up to understand the new version and what the potential consequences could be”. said Adrian Poren, acting director-general of the National Institute of Infectious Diseases in South Africa.

While the Delta variant has two mutations and the Beta variant has three - B.1.1.529 has at least 32 Spike protein mutations.

Christina Figel, director of the Clinical Operational Research Unit at the University of London (UCL) and a leading UK expert on COVID-19, called the new version “extremely worrying” [11,12].

Scientists monitoring new Covid delta variant with ‘horrific spike profile’

Experts show ‘concern’ over B.1.1.529 variant seen in Botswana, South Africa And Hong Kong [13].

The new variant of COVID-19 that was detected in South Africa is a “cause for concern”, a top virologist has warned.

The B.1.1.529 variant, which has been described as having an “awful spike mutation profile”, has been detected in several coronavirus cases in the country.

South African scientists, who had already detected the Beta variant, say the new variant has an “extremely high” number of mutations.

It is not currently clear how effective vaccines will be against it.

Here’s what we know so far [14].

The South African variant has been identified in Israel; Bennett: “Emergency at the door”.

The Ministry of Health has updated that the variant discovered in South African countries has been identified in the country. The Prime Minister convened a special discussion and said: “Our overriding principle at the moment is to act fast, strong and now”.

The Today (Friday), the Ministry of Health updated today (Friday) that the variant discovered in South African countries has been identified in Israel. This is currently a circular that returned from Malawi and in. In addition: there is a suspicion of two more cases of returnees from abroad, who are currently waiting for the results of their flooring and they have been, were sent for isolation.

Alongside this, the Prime Minister, Naftali Bennett, will hold another discussion this morning regarding the new corona strain (B.1.1529), together with the Minister of Health and the professionals at the various levels. This, after being updated during the night on locating, a verified patient who was found to be a carrier of the new strain variant.

Yesterday, Bennett consulted with the Minister of Health, the Director-General of the Ministry of Health, the Head of Public Health at the Ministry of Health and the Minister of Defense, regarding the new strain.

In addition, the Prime Minister instructed to examine the immediate halting of flights from these countries to Israel and from Israel to them, or. The use the application of another outline to prevent the spread of the strain in Israel.

In a follow-up discussion chaired by the Prime Minister and the Minister of Health, it was determined that the following countries were at this stage defined as red: South Africa, Lesotho, Botswana, Zimbabwe, Mozambique, Namibia and Aswatini. Foreigners from these countries will not be able to enter Israel.

Meanwhile, the variant currently known as version B.1.1.529 carries a high number of mutations and may lead to additional disease waves, which will be centered on vaccine-resistant viruses. Meanwhile, the variant currently known as version B.1.1.529, carries within it a high number of mutations and may lead to additional disease waves, which will be centered on vaccine-resistant viruses. So far it has been discovered that the version in question has 32 different mutations in the protein that the various vaccines fight.

According to scientists, the mutations can affect the ability of the virus to infect cells in the body, but can also affect the immune cells to attack the disease [15].

The new strain will be called "Omicron". Experts: "Be on the pulse, without panic [16].



Figure 3

The 50-mutant corona strain was named "OMICRON" after the Greek letter, defined by the World Health Organization as "cause for concern". Is it resistant to vaccines? In a conversation with Ynet, the experts explained: "It does not bode well, but it is too early to deter-

mine that this is the next disaster". Director of the Microbiology Laboratory: "There were also strains that dissolved, it is difficult to deduce from 100 cases".

Last night (Friday), the World Health Organization gave an official name to the new strain of the corona virus, which is causing concern worldwide due to the large number of mutations that appear in it: "Omicron", the 15th letter in the Greek alphabet. At the end of a special conference of the organization's experts, they decided to define it as a "cause for concern officially", and this is the fifth variant of the virus that has been described as such since the outbreak of the plague.

The health organization added that the evidence indicates an increased ability to breed the strain. It was discovered in South Africa. According to the organization, it is spreading there in all provinces of the country.

In Israel, a series of measures decided to prevent the spread of the strain. At least 50 different mutations, 32 in the spike protein associated with the virus' infectivity. The vaccines developed - but questions about that infectivity and possible resistance to vaccines are still open.

Health experts support the government's new decisions - including the declaration of most of Africa as red and the reopening of corona hotels to returnees from the mainland (except Morocco and Egypt) - but call on the public to avoid unnecessary anxiety. Health Minister Nitzan Horowitz also posted a similar message, tweeting: "Thanks to the supervision and testing infrastructure we have deployed, we are quickly identifying each new variant. This is what allows us to act effectively now. The situation is under control and there is no reason for unnecessary anxiety. Balance and get vaccinated"!

Dr. Oren Koibler, a virologist from the Tel Aviv University School of Medicine and a member of the Madat Association, explained in a conversation with Ynet that this is a strain with many mutations relative to previous species have been discovered. Concentrate on the spike protein, which is the protein that is stored against it. Therefore, there is a fear that both the vaccinated and the recovering may be harmed more".

Koviler noted that the concern is as stated that the variant will impair the effectiveness of the vaccine. "We are at a stage where we are debating whether it will happen that there will be a decrease in immunity and are testing it in some labs in the world right now. There is a chance that this variant will be able to infect vaccines a little more effectively, "80% to about 60%, which is not good enough for us to prevent a wave of disease, especially when we have a lot of unvaccinated people in the population".

The second reason for concern, according to Dr. Keebler, is the rate of spread of the variant. The Delta variety has cleared all the other types, and this is the first time we see a variant that takes over an area fully. On the other hand, apparently, there were not many adhesions in this area before the variant came and there was a decline, and then this variant appeared. We do not really know if he is able to push the delta, but this is the first time we see such a thing".

According to him, there is reason for apprehension, but not for hysteria. "The Ministry of Health should prevent this strain from entering the country as much as possible, because the possibility that it is more contagious or more evasive of the vaccine is certainly disturbing and frightening, but is that really the case? We do not know, but prefer not to take the risk. "It can really be more problematic than others, but the public should not go into hysteria. The borders should be protected and the public should be vaccinated as soon as possible, because chances are that the vaccine will be a significant protection against this variant as well.

Professor Adi Stern, head of the Laboratory for the Study of Viral Evolution at Tel Aviv University, also emphasized that the new variant is very different from the Delta strain, due to the many mutations it contains: "The vaccine works against it. Some of the mutations are

known from the previous strains and some are new and unfamiliar mutations. It is indeed a variant that is looked at and it arouses interest. The concern arose because of the pattern that happened in South Africa.

“The concern needs to be moderated”, Professor Stern said. “Because from now on it’s not clear what that means. In South Africa, in the past, two species popped up and caused a big outbreak on the continent but did not cause epidemics in the world. Sometimes a new variant indeed bounces us, but we are far from knowing what it will do. These mutations, and whether it has significance for the vaccine, is unlikely that there will be a variant that will be able to overcome the vaccine, and we do not know if it is a strain that can spread faster than the delta strain.

“It’s true that when you look at the variety it does not look good”, she added. “But from here to the jump that it’s going to be the next disaster, the distance is huge. You have to have a hand on the pulse. As a country that has one entrance gate, the measures that are taken, which is to isolate returnees from South Africa, are not very high. “Be prepared and start thinking and preparing - but equally it can be anything”.

“When we say variant we mean a new strain that contains mutations compared to the original strain”, explained Dr. Nadav Sorek, director of the Laboratory of Microbiology and Outbreaks at Assuta Ashdod Public Hospital. “Mutations are different. We have a new strain that is different from the previous strain. We do not know how it is different. Why did this variant bounce the whole world? Because usually when we see variants, we see a small number of mutations within it, i.e. two, three mutations. The delta for example, contains a limited number of modifications, and a more contagious delta.

In Focus

GISAID Community rapidly shares genomes of new variant of concern Omicron of the pandemic coronavirus

The unique mix of spike amino acid changes in Omicron GR/484A (B.1.1.529) is of interest as it comprises several that were previously known to affect receptor binding and antibody escape. As with all low frequency variants with potentially relevant changes, these need to be monitored closely to study if they spread more widely as a consequence of immune escape, or altered receptor interactions.

Real-time sharing of these strains by GISAID contributors in Botswana, South Africa and Hong Kong allowed timely detection of this new variant, critical for tracking of variants.

[Track the variant >>](#)



3D structure of spike with amino acid changes in Omicron

Figure 4: The spike protein 3D structure of Omicron (credit ref. [17]).

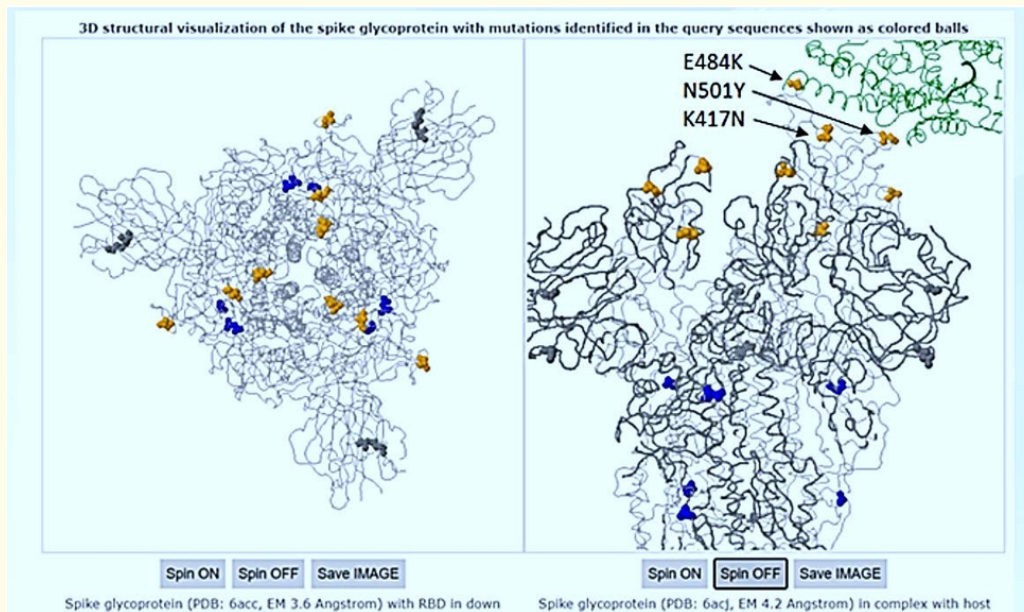


Figure 5: Detailed structure of Omicron spike envelope protein (credit ref. [18]).

Testing vaccines against omicron

Pharma groups conduct laboratory tests. The World Health Organization warns against stress with an alarming range of mutations. Vaccine manufacturers have prepared for new strains, but this is the first time a version introduces so many mutations in the spike protein 'it uses to infect human cells Save Hannah Kuchler in London Yesterday. Delivered 3 times a week. While countries are closing borders to travelers from South Africa for fear of spreading a new strain of the virus causing Covid-19, vaccine manufacturers have been quick to get their hands on it to see if their products will still work. The World Health Organization officially raised the alarm on Thursday regarding version B.1.1.529 - now known as "Omicron" - which has a disturbing range of mutations. But Moderna said her team has been working "non-stop" on it for the past few days, while researchers at BioNTech use a pseudo-virus - engineered to look like the new strain - to find out if their vaccines will be less effective against the strain over the next two weeks. Johnson & Johnson said they are already testing its vaccine against the strain, while scientists at Oxford University expect the virus to be delivered soon, according to a person familiar with the subject. AstraZeneca said it is already conducting research in Botswana and Aswatini, where the version exists, to assess how its vaccine stands in the new version. Vaccine manufacturers are reviving a familiar rodeo. They ran the same lab tests that showed alpha, beta, and delta strains. They expected new versions and prepared by running clinical trials to test new versions. AstraZeneca is set to deliver results on its first customized vaccine, for beta, soon, and Pfizer and BioNTech are conducting trials of vaccines adapted for alpha and delta versions. But this is the first time a version introduces so many mutations in a central place: the "spike" protein it uses to infect human cells. François Blox, a professor at the UCL Institute of Genetics, said these changes meant that the neutralizing antibodies that protected people who had been vaccinated or infected in the past were less likely to detect this version. Joe Walton, an analyst at Credit Suisse, said all of the currently approved vaccines have focused on the spike protein, so everyone can prove a little less protective. But mRNA vaccines need to be easier to adapt because they simply provide genetic codes in tiny bubbles of fat, and then use the body as a plant to produce the

protein that the immune system needs to detect. These codes can be replaced quickly and there is no need for a time-consuming process of growing cells in containers required for other types of vaccines. “mRNA should be the easiest: you can get a new tape and insert it, so if you need it, you should be able to produce a new vaccine”, Walton said. Shares of mRNA vaccine makers soared Friday: Moderna up 21%, BioNTech up 17% and Pfizer up 7%. CureVac was up 12.5 percent even though he had not yet been vaccinated. The German company said it would be able to test its vaccine candidate with partner GSK within two weeks. BioNTech said it and Pfizer took action “months ago” to match the mRNA vaccine they developed together within six weeks and send initial batches within 100 days, in case there was an “escape variant”. Pfizer recently said it has cut time from the start of the process to the introduction of vaccines into vials from 110 days to 31 days. While adenovirus vector vaccines like Oxford/ Astra-Zenka and Johnson & Johnson are also fairly easy to adapt, they are far-fetched. Harder to increase. UBS analyst Michael Levichten said this was reflected in the struggles that AstraZeneca had with production earlier this year. “Adenovirus vectors do not like scale. They harm it personally”, he said. One vaccine that can be beneficial is currently being tested by regulators. Valneva’s entire killed vaccine teaches the immune system how to recognize other key proteins as well as the spike. Shares of French vaccine maker rose 8.5% on Friday on hopes it could better deal with the problem [19].

Bibliography

1. <https://www.scielo.br/j/bjid/A/dYxfThwdjJcqkbySTcx6xsq/?formAt=html&lAng=en>
2. <https://ActASCientific.com/ASNE/pdf/ASNE-03-0178.pdf>
3. <https://www.technologynetworks.com/biopharma/Articles/the-Alpha-AND-omeGA-of-covid-19-yes-the-PAndemic-will-end-but-not-soon-353073>
4. <https://bAdgerherAld.com/bAnter/2021/10/06/covid-19-vARiANts-spikes-so-BAd-theyre-now-being-nAmed-After-greek-houses/>
5. <https://www.vsl.co.At/en/TimpAni/History>
6. <https://middleeAst.in-24.com/News/428232.html>
7. <https://wsvn.com/news/us-world/injuries-reported-After-dutch-police-fire-WARning-shots-At-Anti-lockdown-protest/>
8. <https://www.nytimes.com/2021/11/18/world/europe/germAny-PAndemic-rules.html>
9. <https://www.nytimes.com/2021/11/17/world/europe/covid-vACCIne-gerMAny-europe.html>
10. <https://www.ynet.co.il/news/Article/rkj6s9dof>
11. <https://www.dw.com/en/south-AFRica-scientists-detect-new-covid-19-vARiANt/A-59934908>
12. <https://www.theguArDIAn.com/world/2021/nov/24/scientists-WARn-of-new-covid-vARiANt-with-high-number-of-mutAtions>
13. <https://www.theweek.co.uk/news/world-news/954920/new-covid-delta-vARiANt-spike-profile>
14. <https://www.euronews.com/next/2021/11/25/whAt-we-know-so-fAR-About-the-b-1-1-529-covid-vARiANt-cAUsing-concern-in-south-AFRiCA>
15. <https://www.mAAriv.co.il/corona/corona-isRAel/Article-880180>
16. <https://www.ynet.co.il/news/Article/sk1yr1r00t>

17. <https://www.gisAid.org/>
18. <https://www.gisAid.org/references/gisAid-in-the-news/novel-vAriANt-combinAtion-in-spike-receptor-binding-site/>
19. <https://www.ft.com/content/A7AA4bd3-4405-41f9-bACC-51fb40181156>

Volume 10 Issue 6 June 2022

© All rights reserved by Shimon Shatzmiller., et al.