



# DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DA  
Wednesday 20201209

## **Oxford/AstraZeneca vaccine safe and effective**

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the age group it will protect the most. Reuters (The Tribune: 20201209)**

<https://www.tribuneindia.com/news/health/oxford-astrazeneca-vaccine-safe-and-effective-latest-study-confirms-181594>

Researchers from the University of Oxford and pharmaceutical major AstraZeneca on Tuesday presented a pooled analysis of phase 3 trials of their vaccine against COVID-19 across two different dose regimens, which showed that the vaccine is safe and has an average efficacy of 70.4 per cent.

The university said the new study published in the 'Lancet' medical journal is the first peer-reviewed publication of phase 3 data from studies of a vaccine against the coronavirus.

The paper, assessed by independent scientists, sets out the full results from advanced trials of over 20,000 people. Regulators will be weighing up this same data and are considering the jab for emergency use.

“Today, we have published the interim analysis of the phase 3 trial and show that this new vaccine has a good safety record and efficacy against the coronavirus,” said Professor Andrew Pollard, Director of the Oxford Vaccine Group and Chief Investigator of the Oxford Vaccine Trial.

There are still important questions about what dose would be best, as well as the age group it will protect the most.

When the interim trial results were made public in a press release last month, the researchers reported three efficacy levels for the vaccine – an overall effectiveness of 70 per cent, a lower one of 62 per cent and a high of 90 per cent -- due to different doses of the vaccine being mistakenly used in one part of the trial.

Tuesday's 'Lancet' report reveals 1,367 people -- out of many thousands in the trial -- received the half dose followed by a full dose, which gave them 90 per cent protection against getting ill with COVID-19. The relatively small numbers means it is hard to draw firm conclusions.

"We have known for many years that adenoviral vectored vaccines fulfil the requirements for use against outbreak or pandemic diseases. They are safe, highly immunogenic, can be manufactured in large quantities at low cost and do not require frozen storage," said Sarah Gilbert, Professor of Vaccinology at the University of Oxford.

"Following the demonstration of vaccine efficacy in many preclinical studies, we now have clear evidence of efficacy in the trial results presented in a peer-reviewed publication today. Now under regulatory review, we hope that this vaccine will shortly be in use to start saving lives," she said.

The researchers also investigated the potential for the vaccine to prevent asymptomatic disease, through the use of weekly swabbing by UK trial volunteers.

This data indicates that the low dose/standard dose vaccine may provide a protection against asymptomatic infection, but stress that the data is at an early phase, with too high a level of uncertainty to be certain that this vaccine will protect against asymptomatic infection.

Pascal Soriot, Chief Executive Officer of AstraZeneca, said: 'Today's peer-reviewed publication enables a full disclosure of the Oxford programme interim analysis. The results show that the vaccine is effective against COVID-19, with in particular no severe infections and no hospitalisations in the vaccine group, as well as safe and well tolerated.

"We have begun submitting data to regulatory authorities around the world for early approval and our global supply chains are up and running, ready to quickly begin delivering hundreds of millions of doses on a global scale at no profit." In terms of safety, there was one severe adverse event potentially related to the vaccine and another one -- a high temperature -- that is still being investigated. Both these participants are recovering and are still in the trial.

The UK's independent regulator, the Medicines and Healthcare products Regulatory Agency (MHRA), has been tasked by the government to assess all this data to decide if the jab can be cleared for rollout as protection against COVID-19.

The latest results come on so-called V-Day, or Vaccine Day, in the UK when the first set of people in the high-risk groups received the first of two doses of the Pfizer/BioNTech vaccine against the deadly virus. PTI

## **COVID-19: Antibody**

### **COVID-19: Antibody levels in patients may fade quickly post recovery, says study**

**Based on the findings, the researchers said the levels of different types of antibodies which neutralise the coronavirus 'all begin to decrease in patients**

## **after approximately the first month post-onset of symptoms’(The Tribune: 20201209)**

<https://www.tribuneindia.com/news/health/covid-19-antibody-levels-in-patients-may-fade-quickly-post-recovery-says-study-181551>

COVID-19: Antibody levels in patients may fade quickly post recovery, says study

Antibodies against the novel coronavirus may “disappear quickly” following recovery, says a new study which assessed more than 250 COVID-19 patients up to five months post-infection.

The study, published in the journal Science Immunology, analysed 983 blood plasma samples collected from 79 hospitalised COVID-19 patients and 175 outpatients and asymptomatic people infected with the SARS-CoV-2 virus.

According to the scientists, including Katharina Roltgen from Stanford University in the US, the IgG antibodies likely persist for longer, but also showed a slow decline even in severely ill patients who mounted very strong initial immune responses.

Based on the findings, the researchers said the levels of different types of antibodies which neutralise the coronavirus “all begin to decrease in patients after approximately the first month post-onset of symptoms”.

They found a higher ratio of antibodies that react to the viral spike protein complex in patients with mild illness compared with severely ill patients.

“The decline in antibody titers is most evident in individuals who had asymptomatic infection or mild illness, who produce lower levels of antibodies at the peak of their responses,” the scientists wrote in the study.

They believe the findings may raise important questions about the reliability of seroprevalence studies, since the rapid waning of antibody levels in people may lead to an underestimation of how many people may have been previously infected in a given population.

“The decrease in antibodies after infection also raises the question of how long antibodies elicited by vaccination will last, and whether frequent boosting will be needed to maintain protection,” the scientists noted. PTI

## **Plastic**

### **How much plastic are you eating? (The Tribune: 20201209)**

<https://www.tribuneindia.com/news/health/how-much-plastic-are-you-eating-181546>

What's for dinner? Lego sushi, credit card burgers, or a well-done piece of PVC pipe?

These examples may sound extreme, but can easily represent over time the cumulative amount of microscopic pieces of plastic we consume every day.

People could be ingesting the equivalent of a credit card of plastic a week, a 2019 study by WWF International concluded, mainly in plastic-infused drinking water but also via food like shellfish, which tends to be eaten whole so the plastic in their digestive systems is also consumed.

Reuters used the findings of the study to illustrate what this amount of plastic actually looks like over various periods of time.

In a month, we ingest the weight of a 4x2 Lego brick in plastic, and in a year, the amount of plastic in a fireman's helmet.

This may not sound like much, but it can add up. At this rate of consumption, in a decade, we could be eating 2.5 kg (5.5 lb) in plastic, the equivalent of over two sizable pieces of plastic pipe.

And over a lifetime, we consume about 20 kg (44 lb) of microplastic.

Plastic production has surged in the last 50 years with the widespread use of inexpensive disposable products. As plastic is not biodegradable, but only breaks down into smaller pieces, it ultimately ends up everywhere, cluttering beaches and choking marine wildlife, as well as in the food chain.

Standing on the shoreline of a wildlife-protected saltmarsh in southern England, Malcolm Hudson, a professor of environmental science at the University of Southampton, shows Reuters small, bead-like plastic pellets that permeate the marsh.

Hudson says that most research has been done on these microplastics, but there are increasing amounts of even smaller particles called nanoplastics in the environment that are far more difficult to detect, which we are likely ingesting as well.

"It could pass into our blood or lymphatic system and end up in our organs," said Hudson.

"Those plastic particles are little time bombs waiting to break down small enough to be absorbed by wildlife or by people and then potentially have harmful consequences." Reuters

## **Covid vaccine**

**Know what happens when you get Covid vaccine**

**Know what happens when you get Covid vaccine**

**I just got a COVID-19 vaccine, now what. Photo tweeted by @ians\_india  
(The Tribune: 20201209)**

<https://www.tribuneindia.com/news/health/know-what-happens-when-you-get-covid-vaccine-181515>

Britain will become the first country in the world on Tuesday to roll out the COVID-19 vaccine developed by Pfizer and BioNtech, initially making the shot available at 50 hospitals.

The country's National Health Service will give priority to vaccinating people over the age of 80, frontline healthcare workers and nursing home staff and residents.

Here is what people getting the vaccine should expect.

What happens when someone gets the vaccine?

The vaccine, developed with new messenger RNA technology using a manufactured fragment of the coronavirus' genetic code, is injected into the arm. The immunization is given in two doses, three weeks apart, and has been shown in trials to protect up to 95 per cent of recipients from contracting COVID-19.

Pfizer has said side effects in trial volunteers were mostly mild to moderate, and cleared up quickly. The most severe side effects occurred after the second dose: fatigue in 3.8 per cent of volunteers and headache in 2 per cent. Older adults tended to report fewer and milder adverse events.

What kind of protection does it give?

The vaccine prevented COVID-19 illness seven days after the second injection - which is about a month after the first shot.

Clinical trials so far have not been designed to determine if an immunized person can still spread the coronavirus to someone else. Some vaccines, such as hepatitis A, do provide such protection - known as sterilizing immunity - but others do not. COVID-19 vaccine makers focused trials on determining whether the drug stopped people from getting ill.

It will also be several more months before it becomes clear how long the vaccination will protect someone from coronavirus infection.

"Until then, it is better to avoid the pub, and other in-person gatherings with many people," said Dr. Anita Shet, infectious disease specialist at Johns Hopkins Bloomberg School of Public Health.

Does the vaccine mean back to normal life?

Since there is no evidence that the immunization prevents transmission of the virus - and no vaccine is 100 per cent effective - scientists call for continued vigilance, including mask-wearing, hand-washing and social distancing.

"As with all vaccines, it may work really great in certain patient subsets, but not as well in others ... Does that mean you are free to hop on a plane or have 30 people over at your house?"

Probably not," said Dr. Michelle Barron, senior medical director for infection prevention at Colorado's UHealth.

She said vaccination campaigns are unlikely to reach "a critical mass" until next spring or early summer. Reuters

## **Pfizer Covid-19 vaccine**

### **V-Day: 90-yr-old woman, Shakespeare first in line (Hindustan Times: 20201209)**

<https://epaper.hindustantimes.com/Home/ArticleView>

Margaret Keenan, 90, became the first person in the world to get the Pfizer Covid-19 vaccine shot outside of a clinical trial. She received the shot at a hospital in Coventry on Tuesday. AP Prasun Sonwalkar

London : Margaret Keenan, 90, became the first person in the UK to be vaccinated with the Pfizer-BioNTech vaccine against Covid-19 at 6.45am on Tuesday, followed by one William Shakespeare, British-Indian couple Hari and Ranjan Shukla, and thousands more, marking the start of the country's largest ever vaccination programme.

Tuesday has widely been dubbed "V Day," reflecting the hope of victory over the coronavirus disease that has killed at least 1.5 million people across the globe and upended the lives of millions more.

The day also marked the fastest development, delivery and administration of vaccines in history: from concept to design to clinical trials and regulatory approval, within 10 months.

Queen Elizabeth, 94, and Prince Philip, 99, are also expected to soon receive the two-dose vaccine, which is being delivered 21 days apart. The first priority group of over 80-year-olds and healthcare workers were given the vaccines in 50 hospitals across the UK.

Prime Minister Boris Johnson hailed the day as a "historic moment", but urged Britons to continue following social distancing, washing hands and wearing masks.

An upbeat health secretary Matt Hancock told the House of Commons: "This simple act of vaccination is a tribute to scientific endeavour, to human ingenuity, and to the hard work of so many people. Today marks the start of the fightback against our common enemy, coronavirus, and while today is a day to celebrate there is much work to be done."

The UK has ordered 40 million doses of the vaccine and is expected to receive 4 million more by the end of this month. The UK regulator is also evaluating the clinical data of the University of Oxford/AstraZeneca and Moderna vaccine candidates.

Keenan, who received the vaccine in Coventry, said she felt “so privileged” to be the first to receive it, while the Shukla couple received it in Newcastle. Hari Shukla, 87, a leading race relations campaigner, said it was his “duty” to have the vaccine.

The second person in UK to receive the vaccine – William Shakespeare, 81 – also hit the headlines. He and Keenan received it in the University Hospital in Coventry in the Midlands, not far from Stratford-upon-Avon, the birthplace of the better-known Bard of Avon.

The modern-day Shakespeare’s name sparked much ado and creativity on the social media, evidence that there is a lot in a name. The image of him receiving the vaccine was widely shared, with remarks such as: ‘The Taming of the Flu’ and ‘The Two Gentlemen of Corona’.

One commentator wondered if Keenan were to be called Patient 1A, would Shakespeare be “Patient 2B or not 2B?” Another said he was “glad he (Shakespeare) wasn’t Bard from having it”, and some hoped that “In a world when people hardly ever remember who came second, the second person to get the Covid jab might stick in the memory”.

Hancock also had a laugh on live television that the second person to receive the vaccine was named William Shakespeare, insisting the vaccine rollout “makes you so proud to be British”.

Simon Stevens, NHS England’s chief executive, said: “The deployment of this vaccine marks a decisive turning point in the battle with the pandemic. NHS vaccination programmes which have successfully helped overcome tuberculosis, polio and smallpox now turn their focus to coronavirus.”

As of Monday evening, 61,434 people, including 1,061 people of Indian origin, had died in UK hospitals and care-homes, making it the worst affected country in Europe. The number of cases has climbed to over 1.7 million.

## **Covid-19: What you need to know today (Hindustan Times: 20201209)**

<https://epaper.hindustantimes.com/Home/ArticleView>

Regular readers of this column are aware that my reading of scientific journals and papers increased significantly (actually went from 0 to 60 in under 10 seconds, to borrow a metaphor from the automobile business) during the coronavirus disease pandemic.

With a handful of vaccines for Covid-19 clearing Phase 3 trials; the vaccination of the general population in the UK beginning on Tuesday; and an indigenously developed vaccine applying for emergency use authorisation (on the basis of Phase 1/2 data, but more on this shortly), I was reminded of a May article in the British Journal of Pharmacology that claimed that identifying a drug or drugs to treat the coronavirus disease would take less time than the 12-18 months it would take to develop a vaccine. It has been a year and 10 days between the first published account of the strange illness in Wuhan, China, and the administration of a vaccine

that has cleared Phase 3 trials to a member of the general population, so the authors of that article got that right. But they got the drugs bit completely wrong.

A clutch of antiretrovirals that initially showed promise do not work. Nor does hydroxychloroquine (HCQ). Remdesivir mostly does not work. Ditto with most autoimmune therapies. And plasma therapy, too, does not seem effective in most cases. Monoclonal antibodies may work, but the treatment is expensive. Indeed, the only drugs that have been conclusively proven to work in the treatment of Covid-19 are steroids such as dexamethasone. That does beg the question as to why hospitals are continuing to treat people with some of these (expensive) drugs and therapies, but I shall move on in the spirit of caveat emptor and all that...

Still, it is surprising that we now have not one or two, but a bouquet of successful vaccines that can prevent Covid-19, but just one drug that can treat it.

Then there are the promising vaccine candidates, among them, Covaxin, Bharat Biotech's Made in India one that applied for emergency use approval on Monday. I'm a little surprised by the application for regulatory approval. The company started its Phase 3 trials on November 11. According to available information, the trial involves injecting people with two doses of the vaccine or a placebo at a 28-day interval and then waiting for 14 days to test for efficacy. That would mean that even interim data from the Phase 3 trials will become available only in late December. It also suggests that the regulatory approval is being asked for on the basis of the unpublished (so far) Phase 1/2 data. If the company wanted to apply for emergency use approval on the basis of this, it could have done so at any time and it is not clear why it has waited till now.

To be sure, the very fact that the company has moved from the combined Phase 1/2 to Phase 3 trials, and that these were approved by the drug regulator, suggests that the results of Phase 1/2 were successful, that the vaccine provoked an immune response in the small sample of people tested. But as much as I'd love to see a local vaccine become available soon — the benefits of this are huge — it is important that due process is followed. The developer, and its partner, the Indian Council of Medical Research, must release the Phase 1/2 data. And the drugs regulator may do well to wait for at least interim data from the Phase 3 trials before approving the vaccine.

More a digression than a post script: My colleague and the person who has edited more of these columns than anyone else in the newsroom used to be one of the country's top sports journalists. His usual feedback on my column is along two dimensions. One, on the quality of the column itself, and whether, in his opinion, it has covered fresh ground (getting tougher as the number keeps increasing, I can tell you). And two, on the cricketing significance of the number — he started doing this after Dispatch crossed the 100 mark. But even I know the significance of 221 (today's number): it was Sunil Gavaskar's epic double century in an unsuccessful fourth innings chase of 438 (needed in 445 minutes and 20 mandatory overs) at The Oval. The match was eventually drawn, with India falling nine runs short, and with two wickets in hand. Many consider it Gavaskar's finest innings ever. Some believe the match saw India's best chase ever. It also challenged the limits of possibility. Just as vaccine development has.

## **Government's coronavirus vaccination priority**

### **Priority groups may get shots at same time if doses enough' (Hindustan Times: 20201209)**

<https://epaper.hindustantimes.com/Home/ArticleView>

The three groups in the government's coronavirus vaccination priority list may get inoculations simultaneously if there are enough supplies, the Union government said on Tuesday, raising hopes that members of the public above the age of 50 or with significant comorbidities could get access sooner than previously thought.

The priority list, which identifies people at most risk, has front line health workers, essential service workers like the police and army, and people above the age of 50 years and those who have significant comorbidities.

"The immunisation process across the groups will not be sequential; it can also happen simultaneously depending upon the availability of vaccine," said Union health secretary Rajesh Bhushan, while adding that these were the recommendations from NEGVAC, or the National Expert Group on Vaccine Administration for Covid-19.

The health ministry estimates there are around 10 million health care workers, 20 million frontline workers, and another 270 million people in the last group.

Officials at the routine health briefing held on Tuesday also said that India's apex drug regulator will likely consider the emergency use authorisation (EUA) applications of all three vaccines that have applied, despite the candidate of Bharat Biotech still undergoing large scale Phase 3 clinical trials and the data from the combined Phase 1/2 trials not being public.

The other vaccine candidates that have applied for EUA with the country's apex drug regulator Central Drugs Standard Control Organisation (CDSCO) include the Oxford-AstraZeneca vaccine by Serum Institute of India (SII) and the Pfizer-BioNTech vaccine. P7

### **Priority groups may get shots at same time if doses enough' Anonna Dutt**

letters@hindustantimes.com

New Delhi : The three groups in the government's coronavirus vaccination priority list may get inoculations simultaneously if there are enough supplies, the Union government said on Tuesday, raising hopes that members of the public above the age of 50 or with significant comorbidities could get access sooner than previously thought.

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## **Pollution**

**Fog, slow winds keep air in ‘very poor’ zone  
Delhi will witness moderate fog for the next 3-4 days; no major variation is expected in air quality over the week (Hindustan Times: 20201209)**

<https://epaper.hindustantimes.com/Home/ArticleView>

Delhi witnessed early morning fog for the second consecutive day on Tuesday even as pollution levels remained high due to favourable weather conditions, India Meteorological Department officials said.

According to IMD scientists, moderate fog was observed during the early morning hours at the Safdarjung Observatory (the official marker for the city’s weather) as well as at the Palam weather station, with the visibility being reduced to less than 300 metres. On Monday, the city saw the season’s first dense fog with the visibility dropping to zero at Palam.

Delhi recorded an overall air quality index (AQI) value of 383, in the very poor zone on Tuesday. However, air quality at several monitoring stations such as Vivek Vihar, Anand Vihar, Narela, Jahangirpuri, Nehru Nagar, Punjabi Bagh was in the severe range (an AQI value of 400 and more).

“The high moisture content, which was a result of the easterly winds, started to reduce on Tuesday and hence the intensity of fog cover was less. We expect ‘moderate’ fog in Delhi over the next three to four days. Though moisture has reduced, the wind speed did not pick up much and therefore no significant improvement was seen in the air quality,” said Kuldeep Srivastava, head of IMD’s regional weather forecasting centre.

He added that no major variation is expected in the air quality over the coming week. The average wind speed on Tuesday was 5-6 kmph, not favourable for dispersion of pollutants. "The wind speed is likely to remain around 10 kmph over the next three days. Also, Delhi may see very light rain or drizzle on December 11, on account of a Western Disturbance that will affect the whole of northwest India. Till at least December 12, there will be no significant change in the morning and night temperatures," said Srivastava.

On Tuesday, the minimum temperature was 9.5 degrees Celsius, a notch above normal. The maximum settled at 28.3 degrees, four notches above normal.

As per System for Air Quality and Weather Forecasting and Research (Safar), the union ministry's air quality forecasting wing, the share of stubble burning in the city's PM 2.5 levels was negligible. "The major factors influencing Delhi's air quality at present include reduced ventilation index and fog formation. Air quality is likely to remain in very poor category over the next two days," the Safar bulletin stated.

## **New Cases (The Asian Age: 20201209)**

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=15271112>

# **Delhi records 3,188 cases, positivity rate at 4.23%**

**AGE CORRESPONDENT  
with agency inputs  
NEW DELHI, DEC. 8**

Delhi recorded 3,188 fresh Covid cases on Tuesday with a positivity rate of 4.23 per cent, authorities said.

The positivity rate on Thursday, Friday, Saturday, Sunday and Monday stood at 4.96 per cent, 4.78 per cent, 4.2 per cent, 3.68 per cent and 3.15 per cent respectively.

The fresh cases reported on Tuesday came out of 75,409 tests, including 31,098 RT-PCR tests, con-

ducted the previous day, according to the latest bulletin issued by the Delhi health department.

Fifty-seven fatalities were recorded, pushing the toll in the national capital to 9,763, the bulletin said. Active cases on Tuesday dropped to 22,310 from 22,486 the previous day. According to the bulletin, the total number of cases has climbed to 5,97,112.

Meanwhile, senior Congress leader Anand Sharma on Tuesday cautioned the government against any shortcuts

**THE POSITIVITY rate on Thursday, Friday, Saturday, Sunday and Monday stood at 4.96 per cent, 4.78 per cent, 4.2 per cent, 3.68 per cent and 3.15 per cent respectively**

while processing the Covid vaccine applications and said any compromise on safety standards and rules will not be accepted.

Pfizer, Bharat Biotech and the Serum Institute of India have applied to the Drug Controller General

of India (DCGI) for emergency use authorisation of their Covid vaccine candidates in India and the government will soon take a call on them.

Mr Sharma tweeted, "How can DCGI start processing vaccine applications in violation of rules and protocols? Cautioning the government that human lives and health is involved. No shortcuts and compromising safety standards and rules can be accepted."

Mr Sharma, the deputy leader of Congress in Rajya Sabha and a former

Union minister, said the news on early arrival of Covid vaccine in India raises hopes and will be uplifting for national confidence, but applications of US pharma giant Pfizer and Bharat Biotech for emergency use authorisation raise fundamental questions and concerns.

"Pfizer has not conducted any trials in India and the company has not got a licence from its country of origin. Bharat Biotech has not completed Phase 3 trials and even not released any interim data on efficacy of vaccine," he claimed.

## **Covid-19 complications: lung, kidney and cardiovascular issues**

## **Large US study confirms Covid-19 complications: lung, kidney and cardiovascular issues (New Kerala: 20201209)**

<https://www.newkerala.com/news/2020/212721.htm>

A large study of patients in the United States who contracted Covid-19 confirms many complications of the disease, according to new research.

The research was published in CMAJ (Canadian Medical Association Journal).

"Understanding the full range of associated conditions can aid in prognosis, guide treatment decisions and better inform patients as to their actual risks for the variety of Covid-19 complications reported in the literature and media," writes Dr William Murk, Jacobs School of Medicine and Biological Sciences, University at Buffalo, Buffalo, New York, with coauthors from Aetion, Inc., HealthVerity, Inc. and the University of Toronto.

Using de-identified outpatient and inpatient medical claims from a United States health database, researchers identified 70 288 patients who had a Covid-19-related health visit between March 1 and April 30, 2020. More than half of all patients were admitted to hospital, and approximately 5% were admitted to the intensive care unit. The median age was 65 years, and 55.8 per cent were female. The authors looked at all possible diagnostic codes and identified those that increased in frequency after the onset of Covid-19.

The most common complications associated with Covid-19 were pneumonia, respiratory failure, kidney failure, and sepsis or systemic inflammation, consistent with other studies. The absolute risk of someone with Covid-19 having these serious conditions was 27.6 per cent for pneumonia, 22.6 per cent for respiratory failure, 11.8 per cent for kidney failure and 10.4% for sepsis or systemic inflammation.

The researchers also found associations with a range of other lung and cardiovascular conditions, such as collapsed lung, blood clotting disorders and heart inflammation, although the risk of these was relatively low. Contrary to the results of other studies, Covid-19 did not appear to be associated with a higher risk of stroke.

"This study provides estimates of absolute risk and relative odds for all identified diagnoses related to Covid-19, which are needed to help providers, patients and policy-makers understand the likelihood of complications," write the authors.

## **Meningococcal bacteria**

### **Study sheds light on why some people may become seriously ill from meningococcal bacteria New Kerala: 20201209)**

<https://www.newkerala.com/news/2020/212485.htm>

December 8: Researchers at Karolinska Institutet in Sweden have come one step closer toward understanding why some people become seriously ill or die from a common bacterium that leaves most people unharmed.

In a study published in *The Lancet Microbe*, the researchers linked RNA mutations within the bacterium *Neisseria meningitidis* to invasive meningococcal disease, marking the first time a non-coding RNA in a bacterium has been linked to disease progression.

The researchers have also designed and validated a PCR test that can detect these mutations.

"We found that non-coding RNA mutations within the bacterium *N. meningitidis* are almost twice as likely to be associated with serious meningococcal disease, an uncommon but serious infection that can lead to death," says Edmund Loh, corresponding author and assistant professor at the Department of Microbiology, Tumor and Cell Biology at Karolinska Institutet. "This is also the first time a non-coding RNA in a bacterium has been associated with the development of a disease in humans."

*N. meningitidis* is a bacterium that is often found in the nose of 10 to 15 per cent of the human population. In general, bacteria do not cause any disease. However, when it does, people can become very ill rapidly and die within a few hours if left untreated.

The research work began in 2017 after a strain of the *N. meningitidis* bacterium was isolated from a Swedish teenager who succumbed to meningococcal meningitis. When compared with another strain of the same bacterium isolated from an asymptomatic individual, the researchers discovered a mutation in a regulatory non-coding RNA molecule, known as RNA thermosensor, or RNAT, within the strain from the deceased teenager.

This finding prompted the researchers to embark on a quest to collect and investigate more than 7,000 RNAT configurations of *N. meningitidis* from around Europe. In total, the researchers discovered five new variants of RNATs that could be linked to illness, that is they were more likely to appear in individuals who had become ill from the bacterium.

These variants shared a common trait in that they produced more and bigger capsules that insulated the bacterium and thus helped it evade the body's immune system.

"This is the first time we have been able to associate an RNAT's effect on meningitis disease progression," says the paper's first author Jens Karlsson, PhD student at the same department. "This supports further research into this and other non-coding RNAs' potential involvement in the development of bacterial diseases."

As part of the study, the researchers also developed a quick PCR test that is capable of distinguishing these RNAT mutations.

"In the future, this PCR test may be coupled with a simple nose swab at a clinic, and in doing so, facilitate a speedy identification of these mutations, and subsequent treatment," Edmund Loh concludes.

The study was funded by the Swedish Foundation for Strategic Research, the Knut and Alice Wallenberg Foundation and the Swedish Research Council.

Facts about RNAs

-RNAs (ribonucleic acids) are molecules that perform a range of functions within the cells. There are many kinds of RNAs, for example, RNAs that carry protein-coding messages from DNA and RNAs that regulate the expression of different genes.

-Non-coding RNAs are molecules that are not translated into proteins. There are believed to be thousands of them in the human genome, many whose functions are not yet understood. Some have been linked to the development of diseases such as cancer and Alzheimer's.

-Non-coding RNAs in bacteria help regulate several physiological processes. For example, the Nobel prize-winning CRISPR/Cas9 gene-editing tool partly originated from the discovery of the non-coding RNA molecule, tracrRNA, which helps disarm viruses by cleaving their DNA.

In this study, the researchers link the non-coding RNA molecule, RNA thermosensor, or RNAT, in the bacterium *Neisseria meningitidis* to the progression of invasive meningococcal disease. It is the first time a non-coding RNA molecule in a bacterium has been linked to the progression of disease in humans.

## **Autoimmune diseases**

### **Study identifies links between atopic dermatitis and autoimmune diseases New Kerala: 20201209)**

<https://www.newkerala.com/news/2020/212475.htm>

A recent study revealed that individuals with atopic dermatitis or eczema, were more likely to also have various autoimmune diseases, especially those involving the skin, the gastrointestinal tract or the connective tissue.

The study was published in the British Journal of Dermatology.

For the study, researchers analysed Swedish national health care registers and compared 104,832 cases of atopic dermatitis with 1,022,435 controls.

Additional studies were needed to identify subsets of patients with atopic dermatitis at higher risk for autoimmune diseases, and to explore whether the severity and treatment of atopic dermatitis may affect its association with these conditions.

"Greater awareness, screening and monitoring of autoimmune comorbidities may relieve the disease burden in patients with atopic dermatitis and may give deeper insight into its pathogenesis," said lead author Lina U. Ivert, of the Karolinska Institutet, in Sweden.

# आगाज : ब्रिटेन में 90 साल की महिला को पहला फाइजर टीका

लंदन | एजेंसियां

उत्तरी आयरलैंड की 90 साल की मागरिट कीनान मैगी कोविड-19 से बचाव के लिए फाइजर/बायोएनटेक द्वारा निर्मित टीका लगवाने वाली दुनिया की पहली व्यक्ति बन गई हैं। मैगी को टीका लगाए जाने के साथ ही ब्रिटेन के इतिहास के सबसे बड़े टीकाकरण कार्यक्रम की शुरुआत भी मंगलवार से हो गई। उनको कोवेंट्री के स्थानीय अस्पताल में सुबह छह बजकर 31 मिनट पर टीका लगाया गया।

नेशनल हेल्थ सर्विस (एनएचएस) ने इसे ऐतिहासिक पल बताया। वहीं मैगी ने कहा, मुझे बहुत खास महसूस हो



रहा है। समय से पहले मिला यह मेरे लिए जन्मदिन का सबसे अच्छा उपहार है। वहीं उत्तर-पूर्वी इंग्लैंड के भारतीय मूल के 87 वर्षीय डॉक्टर हरि शुक्ला और उनकी 83 वर्षीय पत्नी रंजन दुनिया के

देश में भी तैयारियां पूरी केंद्रीय स्वास्थ्य मंत्रालय ने दावा किया कि देश में कोरोना से बचाव के लिए टीकाकरण की तैयारियां करीब-करीब पूरी कर ली गई हैं। बस, टीके को नियामक की मंजूरी मिलने का इंतजार है।

लंदन में कीनान को टीका लगाती स्वास्थ्यकर्मी। • रायटर्स

भारतीय मूल के पहले दंपति बन गए हैं जिन्हें कोरोना का टीका लगाया गया। शुक्ला ने कहा कि मैं खुश हूँ कि हम महामारी के अंत की ओर बढ़ रहे हैं।

➤ चार लाख को टीका पेज 17