



# DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY  
Thursday 20201105

## **Oxford COVID-19 vaccine**

### **Oxford COVID-19 vaccine results due next month, raising hopes of 2021 rollout**

**Unclear if vaccine will be rolled out before Christmas (The Tribune: 20201105)**

<https://www.tribuneindia.com/news/health/oxford-covid-19-vaccine-results-due-next-month-raising-hopes-of-2021-rollout-165957>

Oxford COVID-19 vaccine results due next month, raising hopes of 2021 rollout  
Photo for representation. Reuters

UK expects Oxford, Pfizer data in early December

London, November 4

The University of Oxford hopes to present late-stage trial results on its COVID-19 vaccine candidate this year, raising hopes that Britain could start to roll out a successful vaccine in late December or early 2021.

A vaccine that works is seen as a game-changer in the battle against the coronavirus, which has killed more than 1.2 million people worldwide, shuttered swathes of the global economy and turned normal life upside down for billions of people.

"I'm optimistic that we could reach that point before the end of this year," Oxford Vaccine Trial Chief Investigator Andrew Pollard told British lawmakers of presenting trial results this year.

Pollard said working out whether or not the vaccine worked would likely come this year, after which the data would have to be carefully reviewed by regulators and then a political decision made on who should get the vaccine.

"Our bit - we are getting closer to but we are not there yet," Pollard, director of the Oxford Vaccine Group, said.

Asked if he expected the vaccine would start to be deployed before Christmas, he said: "There is a small chance of that being possible but I just don't know."

The Oxford/AstraZeneca vaccine is expected to be one of the first from big pharma to be submitted for regulatory approval, along with Pfizer and BioNTech's candidate.

"If I put on my rose-tinted specs, I would hope that we will see positive interim data from both Oxford and from Pfizer/BioNTech in early December and if we get that then I think we have got the possibility of deploying by the year end," Kate Bingham, the chair of the UK Vaccine Taskforce, told lawmakers.

Prime Minister Boris Johnson said there was the prospect of a vaccine in the first quarter of 2021.

‘Game changer’

Work began on the Oxford vaccine in January. Called AZD1222, or ChAdOx1 nCoV-19, the viral vector vaccine is made from a weakened version of a common cold virus that causes infections in chimpanzees.

The chimpanzee cold virus has been genetically changed to include the genetic sequence of the so-called spike protein which the coronavirus uses to gain entry to human cells. The hope is that the human body will then attack the novel coronavirus if it sees it again.

If Oxford's vaccine works, it would eventually allow the world to return to some measure of normality after the tumult of the pandemic.

Asked what success looked like, he said: "I think good is having vaccines that have significant efficacy - so whether, I mean, that is 50, 60, 70, 80 per cent, whatever the figure is - is an enormous achievement.

"It means from a health system point of view, there are fewer people with COVID going into hospital, that people who develop cancer can have their operations of chemotherapy – it's a complete game changer and a success if we meet those efficacy end points."

But Pollard, one of the world's top experts on immunology, said the world might not return to normal immediately.

"...It takes time to roll out vaccines. Not everyone will take them," he said. "We will still have people getting this virus because it is just too good at transmitting." Reuters

## **Mortality rate, high recovery keep national active Covid cases**

### **Fall in mortality rate, high recovery keep national active Covid cases below 6 lakh**

**There are 5,33,787 active cases of coronavirus infection in the country as on date which comprise only 6.42 per cent of the total caseload(The Tribune: 20201105)**

Fall in mortality rate, high recovery keep national active Covid cases below 6 lakh

It stated that 25 states and Union Territories have better tests per million than the national average. Tribune photo.

Active COVID-19 cases in India have been witnessing a steady decline and remained below six lakh for the sixth consecutive day on Wednesday due to a sustained fall in the mortality rate and a large number of patients recuperating from the disease daily, the Union health ministry said.

There are 5,33,787 active cases of coronavirus infection in the country as on date which comprise only 6.42 per cent of the total caseload, while the total number of recoveries has surged to 76,56,478 pushing the national recovery rate to over 92 per cent.

Sixteen states and Union Territories, including Assam, Punjab, West Bengal, Gujarat, Jharkhand, Rajasthan, Uttar Pradesh, Madhya Pradesh and Bihar, have cases per million lower than the national average, the ministry said.

"The active caseload remained below the six-lakh mark for the sixth successive day as on date," it said, adding 17 states and Union Territories have their recovery rates more than the national average.

As many as 53,357 patients have recovered and discharged in a span of 24 hours till 8 am on Wednesday, whereas 46,253 new infections were reported during the same period, according to the health ministry data.

The ministry said that 80 per cent of the new recovered cases were observed to be concentrated in 10 states and UTs, with Kerala leading the table with more than 8,000 single-day recoveries followed by Karnataka where over 7,000 people were cured of the disease in a day.

The country's COVID-19 testing capacity has augmented rapidly. Total tests conducted so far for detection of COVID-19 was nearly 11.3 crore (11,29,98,959) with 12,09,609 of them being conducted in a day, the ministry said.

It stated that 25 states and Union Territories have better tests per million than the national average, the ministry highlighted.

The Health Ministry further said 76 per cent of the new cases of COVID-19 were from 10 states and UTs, with Kerala and Delhi having contributed the maximum of more than 6,000 cases each. Maharashtra had over 4,000 new cases in a day.

As many as 514 fatalities have been reported in a day. Of these, nearly 80 per cent were concentrated in 10 states and UTs with Maharashtra reporting the maximum 120 deaths.

India's COVID-19 fatality rate stands at 1.49 per cent, with 21 states and UTs have deaths per million lower than the national average, the ministry said. PTI

## **'Abnormal cells',**

### **COVID-19 lung damage caused by persistence of 'abnormal cells', say scientists**

**The research also showed the long-term persistence of the viral genome in respiratory cells and in cells lining the blood vessels, along with the infected cell syncytia(The Tribune: 20201105)**

<https://www.tribuneindia.com/news/health/covid-19-lung-damage-caused-by-persistence-of-abnormal-cells-say-scientists-165949>

COVID-19 lung damage caused by persistence of 'abnormal cells', say scientists  
Photo for representation only. Source: iStock.

Scientists have analysed organ samples from deceased COVID-19 patients and found extensive lung damage in most cases caused by the persistence of abnormal "fused cells," an advance which sheds more light on the progression of the disease.

The researchers, including those from King's College London in the UK, examined lung, heart, liver, and kidney samples of 41 patients who died of COVID-19 to examine the behaviour of the novel coronavirus SARS-CoV-2.

In the study, published in the journal eBioMedicine, they revealed the unique characteristics of the virus that may explain why some patients experience disease symptoms for months -- known as 'long COVID'—with a feeling of fatigue and lack of breath.

The findings show extensive lung damage in most cases, with patients experiencing profound disruption of the normal lung structure and the transformation of respiratory tissue into fibrotic material.

According to the scientists, nearly 90 per cent of the patients showed additional characteristics that were quite unique to COVID-19 compared to other forms of pneumonia.

They said there was extensive blood clotting of the lung arteries and veins, and several lung cells were abnormally large with many nuclei, resulting from the fusion of different cells into single large cells.

The researchers noted that this formation of fused cells—syncytia—is due to the viral spike protein, which the virus uses to enter the cell.

When the protein is present on the surface of cells infected by the COVID-19 virus, the study noted that it stimulates their fusion with other normal lung cells, which can be a cause for inflammation and thrombosis.

The research also showed the long-term persistence of the viral genome in respiratory cells and in cells lining the blood vessels, along with the infected cell syncytia.

According to the researchers, the presence of these infected cells can cause the major structural changes observed in lungs, which can persist for several weeks or months, and could eventually explain 'long COVID'.

"The findings indicate that COVID-19 is not simply a disease caused by the death of virus-infected cells but is likely the consequence of these abnormal cells persisting for long periods inside the lungs," said Mauro Giacca, a co-author of the study from King's College London. PTI

## **Sustain antibodies**

### **Scientists identify COVID-19 patients who recover quickly, sustain antibodies**

**Five of the individuals were hospitalised but all others recovered at home, the study noted (The Tribune: 20201105)**

<https://www.tribuneindia.com/news/health/scientists-identify-covid-19-patients-who-recover-quickly-sustain-antibodies-165913>

Scientists identify COVID-19 patients who recover quickly, sustain antibodies  
Photo for representation only. Source: iStock.

Researchers have found that a subset of COVID-19 patients who recover faster have a persistent antibody response against the novel coronavirus, an advance which sheds more light on the functioning of the immune system and may aid in the development of vaccines against the disease.

The scientists, including those from Brigham and Women's Hospital in the US, examined patients who had recovered from mild to moderate COVID-19 and found that while antibodies against the virus declined in most people over time, some individuals sustained their production several months following infection.

According to the researchers, previous studies had provided conflicting accounts about whether people recovering quickly from the viral infection can sustain potentially-protective antibodies or not.

The results of the current study, published in the journal Cell, noted that these antibody "sustainers" had a shorter course of symptoms, suggesting that some individuals who recover

from COVID-19 faster may be mounting a more effective and durable immune response to the virus.

"We've found a subset of individuals that heal quickly while sustaining virus-specific antibody levels after COVID-19," said Duane Wesemann, a co-author of the study from Brigham and Women's Hospital.

In the research, the scientists recruited and enrolled 92 people in the Boston area in the US who had recovered from COVID-19 between March and June of 2020.

Five of the individuals were hospitalised but all others recovered at home, the study noted.

The researchers collected and analysed blood samples monthly, measuring a range of antibodies, including immunoglobulin-G (IgG), against the novel coronavirus.

They split the cohort into two groups -- those that sustain virus-specific IgG levels over several weeks, and those that lose them -- and analysed these groups and potential connections they had to the clinical data.

The study found that IgG levels against the virus tended to decline substantially in most individuals over the course of three to four months.

However, the antibody production remained stable or enhanced in about 20 per cent of individuals over the same time period.

According to the scientists, these "sustainers" had symptoms for a significantly shorter period of time compared to "decayers"—average of 10 days versus 16 days.

They said the sustainers also had differences in memory T cell populations and B cells—two types of immune cells that can play a key role in immune memory and protection.

"The data point to a type of immune response that's not only adept at handling viral disease by leading to a swift resolution of symptoms, but also better at producing cells that can commit to longer term production of anti-virus IgG antibodies," Wesemann said.

"Figuring out how these individuals are able to support longer-term antibody production is relevant to COVID-19, and will also have important implications for our understanding of the immune system in general," he added. PTI

## **Covid-19: What you need to know today (The Tribune: 20201105)**

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

Photographs of crowded election rallies in Bihar (the last stage of polling is on Saturday) have caused concern in some quarters about a spike in coronavirus disease cases in the state.

Such concern is misplaced.

According to the HT dashboard, Bihar had a mere 7,001 active cases of Covid-19 on Tuesday night. On Tuesday, the state registered just 846 cases from the 143,642 tests it carried out. That translates to a positivity rate of 0.6%. The cumulative positivity rate of the state is 1.9% (it carried out 11.33 million tests till Tuesday evening and registered 218,964 cases). And it has a case fatality rate of 0.5%.

These are numbers of which Germany, a country widely acknowledged with managing the pandemic well — largely on the strength of aggressive testing and its legacy investments in hospital infrastructure — would be proud (Bihar's numbers are a lot better than Germany's, you see).

Bihar's population, at 125 million, is around 50% higher than Germany's 83 million. It is also 25 times New Zealand's population. That island country's cumulative positivity rate is 0.17%.

I've written previously about the mystery of Uttar Pradesh's numbers, and how this is similar to the mystery of Africa's (which has also seen disproportionately few cases and fewer deaths than most parts of the world).

It's a mystery that's led to some interesting hypotheses, such as this: "The mortality due to Covid-19 in different nations is associated with the demographic character of nations and the prevalence of autoimmunity." That's a paper by Bithika Chatterjee, Rajeeva Laxman Karandikar and Shekhar C Mande, published on the pre-print server medRxiv. The authors are from CSIR, National Centre for Cell Sciences, and Chennai Mathematical Institute. The paper, published in mid-October and not peer reviewed yet, suggests that the reason for this mystery could be the so-called "hygiene hypothesis".

"The hypothesis postulates that exposure to pathogens early in life protects people from allergic diseases later in their lives. Moreover, improvement in hygiene practices such as better sanitation, availability of safe drinking water, hand washing facilities etc. reduces the impact of communicable diseases. On the contrary, such a reduction to the exposure to infectious agents might be related to higher prevalence of autoimmune disorders," the authors write. They picked "GDP, HDI, prevalence of various diseases, demographic parameters, various sanitation parameters", demographic data, the administration of the BCG vaccine, and measured the correlation between these and the case fatality rate to prove their hypothesis. With the old caveat that correlation doesn't mean causation, I believe this is an interesting study that merits further exploration, including field studies (the authors based their paper on secondary research using published data).

It is surprising that India's federal health ministry or the Indian Council of Medical Research have not thought the achievements of Bihar and UP in managing the pandemic worthy of closer study. After all, why look to Germany or New Zealand as benchmarks when you have local ones (that you can be vocal about).

Both Bihar and Uttar Pradesh predominantly use rapid antigen tests, which are unreliable. A New York Times report said on November 2 that one popular rapid antigen test (Sofia, made by Quidel) identified only "32% of positive cases identified by the" more accurate reverse transcription polymerase chain reaction (RT-PCR test). Other studies have shown that rapid antigen tests miss around half the positive cases (although some companies, including Abbott Laboratories, have launched what they claim are accurate rapid antigen tests). But the numbers in these states are far too low, even if one were to account for the use of such tests

**Delhi reporting 3rd wave of Covid-19, says Kejriwal  
Delhi govt will move SC against the stay imposed by HC on the state order  
reserving 80% ICU beds for Covid-19 patients in 33 private hospitals(The  
Tribune: 20201105)**

Passengers in queue for a Covid-19 test at Anand Vihar ISBT a day after inter-state terminals in Delhi were reopened. Vipin Kumar/HT PHOTO

New Delhi : Delhi chief minister Arvind Kejriwal on Wednesday said that the national capital is reporting a “third wave” of Covid-19 outbreak.

The CM also said the Delhi government would move the Supreme Court to vacate the stay imposed by the Delhi high court on the city administration’s order of reserving 80% of the intensive care unit (ICU) beds for Covid-19 patients in 33 private hospitals.

The declaration is significant, as the Delhi government had earlier maintained that it would wait for a week to decide whether a third wave has hit the national capital.

The CM’s statement came after Delhi reported 6,725 new Covid-19 cases on Tuesday and the overall tally went past 400,000.

The Capital added 6,842 new cases on Wednesday, a new single-day spike in Covid-19 cases.

Kejriwal said he would hold a meeting to review Covid-19 management on Thursday.

“I want to inform the public that Delhi is reporting a surge in Covid-19 cases over the past few days. I would call this a third wave of the pandemic in the city because in the end of September and the beginning of October, daily Covid-19 cases had started to drop below 3,000,” Kejriwal told media persons at Hiranki village, where he visited to check the effectiveness of the bio-decomposing process of converting stubble into manure.

He also urged the public not to panic and assured he is monitoring the situation closely.

“At present, there is no scarcity of Covid-19 beds in Delhi. There is no scarcity of any form of health infrastructure in the national capital. It has come to our notice that in big private hospitals, only a few ICU beds with ventilators are lying vacant. The issue will be resolved in a day or two once the SC vacates the stay by the HC,” Kejriwal said.

The Delhi government will take a call on Thursday whether firecrackers would be allowed this Diwali — to be celebrated on November 14 — he said.

“The meeting will discuss a gamut of issues such as allowing firecrackers to availability of Covid-19 beds, especially those in ICUs. The meeting is to be held at 4pm,” Kejriwal said.

■ National capital, Kerala register highest number of cases daily

# 6,842 Covid-19 cases, 51 deaths in Delhi in 24 hrs

VINEETA PANDEY  
NEW DELHI, NOV. 4

Kerala and Delhi are registering highest number of daily fresh cases in the country at present even as active cases of novel coronavirus in India continue to be on a decline. While Kerala on Tuesday had 8,516 fresh cases and 28 deaths, Delhi recorded 6,842 new cases and 51 deaths on Wednesday.

The total numbers of Covid-19 cases in India have reached 83.14 lakh after 46,253 fresh cases were registered in the last 24 hours. So far 1,23,611 people have died due to the virus out of which 514 are fresh fatalities. India's Covid-19 fatality rate stands at 1.49 per cent.

According to Union health ministry, there are 5.34 active cases of Covid-19 infection in the country as on date which comprise only 6.42 per cent of the total caseload, while the total number of recoveries has surged to 76.56 lakh, taking the national recovery rate to over 92 per cent.

The ministry added that 17 states and Union Territories have recovery rates more than the national average while 16 states and Union Territories, including Assam, Punjab, West Bengal, Gujarat,



A health worker conducts Covid-19 RAT test at Anand Vihar bus terminal in New Delhi on Wednesday. — PTI



Jharkhand, Rajasthan, Uttar Pradesh, Madhya Pradesh and Bihar, have cases per million lower than the national average. The officials said that 80 per cent of the new recovered cases are from 10 states and UTs, with Kerala recording the highest — more than 8,000 single-day recoveries — fol-

lowed by Karnataka (7,000).

Meanwhile, the Union civil aviation ministry has allowed the domestic passenger airlines to operate up to 60 per cent of their pre-Covid flights till February 24 next year. Domestic aviation sector is hopeful to operate 100 per cent of their pre-Covid domestic passenger flights by April next year.

The Delhi government has started conducting targeted Covid-19 tests in markets and other crowded areas to strengthen its surveillance mechanism, the city's health minister Satyendar Jain said on Wednesday.

According to a source in Delhi government's health department, in tar-

## Biggest spike in Noida with 331 corona cases

**Noida, Nov. 4:** Uttar Pradesh's Gautam Buddha Nagar district recorded its biggest single-day spike of 331 Covid-19 cases on Wednesday pushing the district's infection tally to 18,679, official data showed. The number of recoveries also reached 17,168 as 177 more patients recuperated since Tuesday, according to the data released by the Uttar Pradesh health department for a 24-hour period.

The district's previous biggest single-day surge was recorded on September 10 when 251 coronavirus cases were detected. Meanwhile, the number of active cases also rose to 1,443 from 1,280 on Tuesday, the third highest in the state, the data showed. — PTI

geted testing, samples are collected at regular intervals from a restaurant or a market place in an area from where high number of cases are getting recorded or where safety protocols may not have been adhered to diligently.

## **Stress**

### **Earwax can reveal how stressed you are (New kerala: 20201105)**

<https://www.newkerala.com/news/2020/193314.htm>

A team of researchers has developed a novel device to sample earwax that can also measure levels of stress in your life, paving the way to monitor depression and stress-linked conditions.

According to researchers from University College London and King's College London, the new device can be used at home without clinical supervision, facilitating medical check-ups while maintaining social distancing due to Covid-19.

It may also have the potential to measure glucose or Covid-19 antibodies that accumulate in earwax, the team said in a paper published in the academic journal Heliyon.

"Cortisol sampling is notoriously difficult, as levels of the hormone can fluctuate, so a sample might not be an accurate reflection of a person's chronic cortisol levels. Moreover, sampling methods themselves can induce stress and influence the results," said lead researcher Dr Andres Herane-Vives from King's College London.

"But cortisol levels in earwax appear to be more stable, and with our new device, it's easy to take a sample and get it tested quickly, cheaply and effectively".

Cortisol has been considered as a possible biomarker, or objective biological measure, for depression, but researchers have been stymied by challenges in accurately measuring cortisol levels.

The most common technique is with hair samples, but they are more subject to short-term fluctuations in cortisol, and not everyone has enough hair for a reliable sample.

It is also more time-consuming and expensive to analyse hair samples, compared to earwax, but until now there has not been a reliable and non-stressful method to sample earwax.

Earwax is well suited for home sampling, as samples can be sent to a lab by post without much risk of contamination.

The novel earwax self-sampling device is similar to a cotton swab, but with a brake that stops the swab from going too far into the ear and causing damage.

The tip is covered with a sponge of organic material, with a solution that has been tested to be the most effective and reliable at taking samples.

In their pilot study, Dr Herane-Vives and a team brought in 37 study participants to test different cortisol sampling techniques.

The researchers found that earwax samples yielded more cortisol than hair samples, and the new technique was the fastest and potentially cheapest method.

Dr Herane-Vives said he is setting up a company, Trears, to bring his earwax sampling device to market, with support from the UCL Hatchery startup incubator.

## **'Birth-signalling hormones'**

### **Cesarean delivery's effects on birth hormones can impact newborn's neurological development: Study (New kerala: 20201105)**

<https://www.newkerala.com/news/2020/193235.htm>

Cesarean-section and vaginal delivery lead to different hormonal exposures that may affect a newborn's development, according to an article published in the .

The article notes that levels of each of the 'birth-signalling hormones' -- oxytocin, arginine vasopressin, epinephrine, norepinephrine, and the glucocorticoids -- are lower following cesarean delivery compared with vaginal delivery. These hormones may play various roles in helping an infant adapt the following birth, and alterations in their levels in early life can have long-term neurodevelopmental consequences.

"Given that nearly one-third of all births in the US currently occur via cesarean delivery, it's important that we try to understand whether the well-established epidemiological associations between cesarean delivery and various neurodevelopmental outcomes -- such as higher rates of autism and obesity -- are due to changes in these important hormones during the sensitive period that is birth," said author William Kenkel, an Assistant Professor in the Department of Psychological and Brain Sciences at the University of Delaware.

## **Toxic Air:**

### **Toxic Air: As air quality worsens, risk of asthma, cancer looms large (New Kerala: 20201105)**

<https://www.newkerala.com/news/2020/193206.htm>

With the constant dip in mercury and air quality aggravating from moderate to poor to very poor category in the national capital and its surrounding areas, the hospitals in Delhi are getting flocked by patients of asthma, chronic obstructive pulmonary disease (COPD) and other acute respiratory illnesses.

While the health experts have been witnessing an almost 20 per cent rise in the number of such patients for the last two weeks, the influx of patients with no prior respiratory illness are also increasing with symptoms of asthma.

Moreover, the experts have warned that long term exposure to severely polluted air could also result in the development of cancer.

Desh Deepak, a pulmonologist at the Centre-run Ram Manohar Lohia Hospital (RML), said that air pollution has been well-recognised as a cancer-causing agent.

"Air pollution is a Class 1 cancer-causing agent. It is a certified carcinogen recognised by the World Health Organization (WHO). Long-term exposure to it could turn it into a cancer," he explained.

A carcinogen is any substance, radionuclide, or radiation that promotes carcinogenesis, the formation of cancer. This may be due to the ability to damage the genome or because of the disruption of cellular metabolic processes.

Concurring with Deepak, Manish Sharma, medical oncologist at the Rajiv Gandhi Cancer Institute and Research Centre, said that air pollution is directly associated with development of lung cancer.

"In 2013, the International Agency for Research in Cancer (IARC) had categorised air pollution as Group 1 carcinogen for lung cancer and Group 2A for several other kinds of cancers. It means that air pollution is directly responsible for lung cancer. However, an association with other kinds such as bladder cancer, breast cancer and esophagus cancer is probable," he explained.

Sharma also stated that air pollution is exacerbating mortality among cancer patients by a whopping 22 per cent. He pointed out that every 10 micrograms per cubic metre increased exposure to PM 2.5 leads to risk of dying from cancer by 22 per cent.

"A recent study done in Hong Kong on over 66,000 patients revealed that the risk of death in cancer patients getting treatment in polluted areas increases by 22 per cent in comparison to patients who receive treatment in non-polluted regions," Sharma explained.

He added that the risk of cancer in new-borns also increases when their mothers get exposed to pollution while expecting.

Karan Madan, professor at the Department of Pulmonary Critical Care and Sleep Medicine, All India Institute of Medical Sciences (AIIMS), observed that high level of pollution is triggering asthma among people having no pulmonary disorders.

"The rise of PM 2.5 level is clearly linked to increased problems with lung health. We have been diagnosing patients with no pre-existing respiratory problems exhibiting symptoms of asthma and other pollution-related lung diseases. Besides, the pollution is also aggravating the severity of respiratory diseases in the patients with pre-existing pulmonary illnesses," he added.

Anil Chaudhry, a senior consultant at Rajan Babu Institute of Pulmonary Medicine and Tuberculosis (RBIPMT), said that extreme rise in pollution coinciding with winters observed these days have worsened 90 per cent of the cases with pre-existing respiratory illnesses.

"Patients with asthma and COPD do experience exacerbations in the winter. Changes in temperature and humidity contribute to seasonal infections. Further, air pollution is also a major threat. Patients already having respiratory illnesses are at the receiving end of this situation (air pollution). Their complications have aggravated," he added.

Meanwhile, Deepak informed that the hospitals are receiving up to 20 per cent rise in patients suffering from chronic respiratory illnesses.

"It is an annual feature where the footfall of patients with existing lung and respiratory disease increases in the hospitals. However, the general practitioners working at community levels could witness more number of patients," he added.

## **Heart disease**

### **Novel rubbery cardiac patch can monitor, treat heart disease (New kerala: 20201105)**

<https://www.newkerala.com/news/2020/193196.htm>

Move over smart watches as researchers led by a mechanical engineer from the University of Houston have developed a patch made from fully rubbery electronics that can be placed directly on the heart to collect electrophysiological activity, temperature, heartbeat and other indicators -- all at the same time.

Pacemakers and other implantable cardiac devices have had one of two drawbacks -- they are made with rigid materials that can't move to accommodate a beating heart or they are made from soft materials that can collect only a limited amount of information.

The novel device marks the first time bioelectronics have been developed based on fully rubbery electronic materials that are compatible with heart tissue, allowing the device to solve the limitations of previous cardiac implants, which are mainly made out of rigid electronic materials.

"For people who have heart arrhythmia or a heart attack, you need to quickly identify the problem. This device can do that," said Cunjiang Yu, associate professor of mechanical engineering at University of Houston.

In addition to the ability to simultaneously collect information from multiple locations on the heart, the device can harvest energy from the heart beating, allowing it to perform without an external power source.

That allows it to not just track data for diagnostics and monitoring but to also offer therapeutic benefits such as electrical pacing and thermal ablation, the researchers reported in a paper published in the journal Nature Electronics.

Yu is a leader in the development of fully rubbery electronics with sensing and other biological capabilities, including for use in robotic hands, skins and other devices.

The epicardial bioelectronics patch builds upon that with a material with mechanical properties that mimic cardiac tissue, allowing for a closer interface and reducing the risk that the implant could damage the heart muscle.

The device suggests a promising route towards next-generational bioelectronics and biosensors that do not have a hard-soft interface for the heart and other organs.

"Our rubbery epicardial patch is capable of multiplexed ECG mapping, strain and temperature sensing, electrical pacing, thermal ablation and energy harvesting functions," the team wrote.

## **Eczema**

### **Vitamin D lessens symptoms of severe eczema in children (New kerala: 20201105)**

<https://www.newkerala.com/news/2020/193033.htm>

Vitamin D supplementation eased the symptoms experienced by children with severe atopic dermatitis or eczema, in a recent randomised controlled trial published in Pharmacology Research and Perspectives.

Investigators reported on the results of 86 patients with the inflammatory skin condition who completed the trial and received either oral daily vitamin D or placebo, in addition to standard care, for 12 weeks.

"Vitamin D supplementation could be an effective adjuvant treatment that improves the clinical outcomes in severe atopic dermatitis," the authors said.

Vitamin D is a fat-soluble vitamin that is naturally present in a few foods and available as a dietary supplement. It is also produced endogenously when ultraviolet (UV) rays from sunlight strike the skin and trigger vitamin D synthesis.

## **Vitamin E**

### **Vitamin E from palm oil useful in boosting immune response based on studies on liver cells(New kerala: 20201105)**

<https://www.newkerala.com/news/2020/192918.htm>

A study conducted on mice liver cells revealed that Vitamin E extracted from palm oil helps in boosting the immune response of the body.

Palm oil contains abundant quantities of vitamin E compounds, which include tocopherols and tocotrienols. These compounds have anti-oxidant effects, which protect cells from damage from toxic chemicals produced by metabolic processes. While tocopherol is a widely known and researched compound, there remains much to learn about tocotrienols.

A team of researchers from Malaysia and Libya recently investigated the effect of tocotrienols extracted from palm oil on mice liver cells. The team investigated the expression levels of genes influenced by a transcription factor Nrf2, and the translocation of the same factor into the cellular nucleus. Nrf2 is known to upregulate phase II drug metabolism in reaction to metabolic processes. The genes activate cellular defense mechanisms.

"Our study is the first in vivo study on the effect of tocotrienols on Nrf2 on genetic material in the nucleus," said Azman Abdullah (Universiti Kebangsaan Malaysia), corresponding author of the study.

The team observed that the translocation of Nrf2 in mice liver cells is both dose dependent, and functionally relevant.

"We observed that the maximum effect of Nrf2 translocation into the liver cell nucleus after administration of the palm oil extract occurred in 60 minutes of administration," said Abdullah.

"The increased concentration of liver nuclear Nrf2 corresponded with increased transcript levels of several Nrf2 regulated genes," added Abdullah.

Palm oil is an economical source of vitamin E, and several studies have shown the beneficial effects on the immune system, which include anti-oxidant and anti-cancer activity as well as cytoprotective actions.

Researchers hope that these findings pave the way for easily available remedies for a variety of diseases. The current study is published in Current Pharmaceutical Biotechnology.

Vitamin E from palm oil useful in boosting immune response based on studies on liver cells  
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## **Antibodies**

### **Study uncovers subset of COVID-19 patients who recover quickly and sustain antibodies (New kerala: 20201105)**

<https://www.newkerala.com/news/2020/192885.htm>

A new study led by investigators from Brigham and Women's Hospital examined blood samples and cells from patients who had recovered from mild to moderate COVID-19 and found that while antibodies against the virus declined in most individuals after disease resolution, a subset of patients sustained anti-virus antibody production several months following infection.

These antibody "sustainers" had a shorter course of symptoms, suggesting that some individuals who recover from COVID-19 faster may be mounting a more effective and durable immune response to the virus. Results are published in Cell.

"We've found a subset of individuals that heal quickly while sustaining virus-specific antibody levels after COVID-19," said Duane Wesemann, MD, PhD, an immunologist and associate physician in the Brigham Division of Allergy and Clinical Immunology and an associate professor at Harvard Medical School.

"The kind of immune response we're seeing in these individuals is a bit like investing in an insurance policy -- it's the immune system's way of adding a potential layer of protection against future encounters with the virus," added Wesemann.

The Wesemann lab studies the entire set of antibodies a host's immune system produces and how they learn to recognise pathogens. In the spring of 2020, the team turned its attention to the COVID-19 pandemic and the immune response of people who become infected. They are eager to understand the nature of the antibody response to the virus.

To this end, the team recruited and enrolled 92 people in the Boston area who had recovered from COVID-19 between March and June of 2020. Five of the individuals were hospitalised but all others recovered at home. The team collected and analysed blood samples monthly,

measuring a range of antibodies, including immunoglobulin-G (IgG), against the virus that causes COVID-19.

They split the cohort into two groups -- those that sustain virus-specific IgG levels over several weeks, and those that lose them. The team analyzed these groups and potential connections they had to clinical and other immunological data.

The team found that IgG levels against the virus tended to decline substantially in most individuals over the course of three to four months. However, in about 20 per cent of individuals, antibody production remained stable or enhanced over the same time period.

The team found that these "sustainers" had symptoms for a significantly shorter period of time compared to "decayers" (average of 10 days versus 16 days). Sustainers also had differences in memory T cell populations and B cells, two types of immune cells that can play a key role in immune memory and protection.

An important limitation of the study, the team noted, was that most of the volunteers were adult white women. The researchers said that future research must aim to enroll a more diverse population to further elucidate whether variations in immune response exist across people of different ages and ethnic and racial backgrounds.

The researchers also point out that further research may help determine whether similar dynamics of the immune response are also seen in people with asymptomatic and severe disease.

"The data point to a type of immune response that's not only adept at handling viral disease by leading to a swift resolution of symptoms, but also better at producing cells that can commit to longer term production of anti-virus IgG antibodies," said Wesemann.

"Figuring out how these individuals are able to support longer-term antibody production is relevant to COVID-19, and will also have important implications for our understanding of the immune system in general," added Wesemann.

## **Depression, anxiety**

### **Depression, anxiety are more frequently diagnosed in women: Study (New kerala: 20201105)**

<https://www.newkerala.com/news/2020/192700.htm>

Women are more frequently diagnosed with depression and anxiety and the taking of prescribed psychotropic drugs is also significantly higher among them, suggests a new study.

Gender is a significant determining factor in mental health and in how it is managed by the healthcare services, according to recent studies conducted on the basis of health questionnaires completed in the Basque Autonomous Community (2018) and in Spain (2017), and on the Spanish sample corresponding to the European Health Survey (2014).

The UPV/EHU's research group OPIK, Social Determinants of Health and Demographic Change, is a multidisciplinary group comprising research personnel in the field of social and health sciences; it explores the social factors influencing health and disease in the population, social inequalities in health and the policies that have the potential to modify these social determinants in the interests of improving the health of the population.

What stands out in the analysis of these three databases is the higher prevalence of poor mental health among women of all ages and across all social groups; in addition, there is a multiplier effect due to the accumulation of experiences of inequality. This reality also appears to be unequal in terms of the age and socioeconomic level of the patients.

Amaia Bacigalupe, one of the authors of the study, asserts that "women are more frequently diagnosed with depression and anxiety and the taking of prescribed psychotropic drugs is also significantly higher, even if there is no difference with men with respect to mental health equality, diagnoses and frequency of visits to healthcare centres.

"All this could point to the existence of a medicalisation process of mental health in women, but interpreting its origin is complex since the processes involving the high prevalence of diagnosis and overprescription undoubtedly play a role, but maybe also due to infra-diagnosis and lower prescription rates in men".

Bacigalupe adds that these aspects should be tackled in greater depth in future studies.

### Reducing gender inequalities

The research group highlights the fact that reducing gender inequalities in mental health will need to be the result of policy intervention on various levels. "There is a clear relationship between the degree of gender inequality in society and gender inequalities in mental health," says Amaia Bacigalupe.

"So all those policies designed to combat the discrimination endured by women on the labour market, in the responsibility for domestic and care work, in the use of time and, generally, relating to those that empower women on the basis of their greater political representation and making them more socially visible, will exert a positive effect on the reduction in mental inequalities between men and women".

Another aspect highlighted in the study is the need to make commitments starting from an institutional level and geared towards curbing the medicalisation of everyday malaise from a clear gender perspective. "In the field of mental health in which the medicalisation of malaise is especially common, far from addressing the cause of the problem, some problems of a social origin end up receiving psychiatric or psychological treatment," said the researcher in the Department of Sociology 2 at the UPV/EHU.

According to the study, it would also be necessary to encourage spaces for reflection in the clinical setting designed to help to collectively deconstruct certain aspects that have become natural in gender binarism and which have underpinned the definitions of psychopathology and its current treatment. Bacigalupe also says that "the actual incorporation into clinical practice of the biopsychosocial model, as well as the implementing of strategies to promote health and emotional well-being from a community health approach based on assets, could prevent the over-pathologization and over-medicalization of everyday malaise once a global view of how the social context influences health is acquired".

## Coronavirus (Hindustan: 20201105)

[https://epaper.livehindustan.com/imageview\\_429794\\_87613168\\_4\\_1\\_05-11-2020\\_4\\_i\\_1\\_sf.html](https://epaper.livehindustan.com/imageview_429794_87613168_4_1_05-11-2020_4_i_1_sf.html)

**चिंताजनक:** दिल्ली में बुधवार को संक्रमण के रिकॉर्ड 6842 नए केस सामने आए

# राजधानी में कोरोना की तीसरी लहर: केजरीवाल

नई दिल्ली/गुरुग्राम/नोएडा | हिब्यू

दिल्ली में संक्रमण के मिल रहे रिकॉर्ड केस को मुख्यमंत्री अरविंद केजरीवाल ने कोरोना की तीसरी लहर बताया है। उन्होंने बुधवार को कहा कि बीते कुछ दिनों में मामले तेजी से बढ़े हैं। इससे निपटने के लिए सरकार हरसंभव कदम उठा रही है। इस बीच, बुधवार को रिकॉर्ड 6800 से अधिक मरीज मिले।

**सुप्रीम कोर्ट जा रहे:** एक कार्यक्रम के दौरान मुख्यमंत्री ने माना कि दिल्ली में आईसीयू बेड में कमी आई है। कुछ निजी अस्पतालों में यह समस्या ज्यादा है। बाकी जगह बेड उपलब्ध है। हमने आईसीयू बेड बढ़ाने को लेकर आदेश दिया था, मगर हाईकोर्ट ने स्टे लगा दिया है। हम इसके खिलाफ सुप्रीम कोर्ट जा रहे हैं। जल्द ही आईसीयू बेड भी बढ़ा दिए जाएंगे।

**दृढ़ रिकॉर्ड:** दिल्ली में बुधवार को कोरोना के रिकॉर्ड तोड़ 6842 मरीज सामने आए। दिल्ली में लगातार दूसरे दिन



**वजह**

- दिल्ली में बीते 15 दिनों में तेजी से जांच हुई है
- मरीजों के संपर्क वालों की कांटेक्ट ट्रेसिंग बढ़ी
- बाजार बड़ी संख्या में लोग लापरवाही बरत रहे

एक दिन में साढ़े छह हजार से ज्यादा लोग संक्रमित मिले हैं। मंगलवार को 6725 मरीज मिले थे। दिल्ली में बुधवार को 51 मरीजों की मौत भी हुई है।

**एनसीआर में सर्वाधिक केस:**

एनसीआर में कोरोना के रिकॉर्ड मामले मिलने लगे हैं। पिछले 24 घंटे के दौरान फरीदाबाद में 359, गुरुग्राम में 611

“हमारा मकसद सिर्फ इतना है कि लोग संक्रमित हों तो उन्हें ठीक से इलाज मिले। हम स्थित पर नजर रख रहे हैं। जो भी कदम उठाना होगा, उठाएंगे। चिंता की जरूरत नहीं है। - अरविंद केजरीवाल, मुख्यमंत्री

**09**

हजार के करीब बेड खाली हैं दिल्ली में

**800**

हजार के करीब बेड खाली हैं दिल्ली में

**58 हजार की जांच**

दिल्ली में एक दिन में 58,910 सैपल की जांच की गई। 5797 मरीजों की छुट्टी भी हुई।

और नोएडा में 339 मरीज मिले हैं। इन शहरों का यह एक दिन का सर्वाधिक आंकड़ा है। गुरुग्राम में तीन मरीजों की मौत भी हुई है। बुधवार को 342 मरीज संक्रमण को मात देकर ठीक भी हुए। वहीं, गौतमबुद्धनगर में सबसे अधिक 339 कोरोना मरीज मिले। पूर्यूपी में यह सबसे अधिक है।

**आफत:** लगातार बढ़ रहे केस से मुसीबत बढ़ी

- 6842 नए मामले मिले कोरोना संक्रमण के दिल्ली में
- 04 लाख से अधिक केस मिल चुके हैं अब तक
- 08 हजार अधिक केस मिले देश में पिछले दिन के मुकाबले
- 83 लाख के पार हो गया संक्रमितों का कुल आंकड़ा

**राहत:** देश में स्वस्थ होने की दर बढ़ी

- 92 फीसदी के पार देश में ठीक होने की दर
- 76.56 लाख लोग संक्रमण से उबर चुके हैं
- 1.49 प्रतिशत रह गई है वायरस से मृत्यु दर
- 5.5 लाख से कम सक्रिय मरीजों की संख्या

