



# DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY  
Monday 20210113

## COVID-19 severity

### Make-up of gut microbiome may influence COVID-19 severity, immune response (The Tribune: 20210113)

<https://www.tribuneindia.com/news/health/make-up-of-gut-microbiome-may-influence-covid-19-severity-immune-response-197484>

Make-up of gut microbiome may influence COVID-19 severity, immune response

The variety and volume of bacteria in the gut, known as the microbiome, may influence the severity of COVID-19 as well as the magnitude of the immune system response to the infection, suggests the findings of new research.

The research was published online in the journal Gut. Imbalances in the make-up of the microbiome may also be implicated in persisting inflammatory symptoms, dubbed 'long COVID', the findings suggest.

COVID-19 is primarily a respiratory illness, but the evidence suggests that the gut may also have a role.

As the gut is the largest immunological organ in the body and its resident microbes are known to influence immune responses, the researchers wanted to find out if the gut microbiome might also affect the immune system response to COVID-19 infection.

They, therefore, obtained blood and stool samples and medical records from 100 hospital inpatients with laboratory-confirmed COVID-19 infection between February and May 2020 and from 78 people without COVID-19 who were taking part in a microbiome study before the pandemic.

The severity of COVID-19 was classified as mild in the absence of x-ray evidence of pneumonia; moderate if pneumonia with fever and respiratory tract symptoms were detected;

severe if patients found it very difficult to breathe normally; and critical if they needed mechanical ventilation or experienced organ failure requiring intensive care.

To characterise the gut microbiome, 41 of the COVID patients provided multiple stool samples while in hospital, 27 of whom provided serial stool samples up to 30 days after clearance of SARS-CoV-2, the virus responsible for COVID-19

Analysis of all 274 stool samples showed that the make-up of the gut microbiome differed significantly between patients with and without COVID-19, irrespective of whether they had been treated with drugs, including antibiotics.

COVID patients had higher numbers of *Ruminococcus gnavus*, *Ruminococcus torques* and *Bacteroides dorei* species than people without the infection.

And they had far fewer of the species that can influence immune system response, such as *Bifidobacterium adolescentis*, *Faecalibacterium prausnitzii* and *Eubacterium rectale*.

Lower numbers of *F. prausnitzii* and *Bifidobacterium bifidum* were particularly associated with infection severity after taking account of antibiotic use and patient age.

And the numbers of these bacteria remained low in the samples collected up to 30 days after infected patients had cleared the virus from their bodies.

COVID-19 infection prompts the immune system to produce inflammatory cytokines in response. In some cases, this response can be excessive ('cytokine storm'), causing widespread tissue damage, septic shock, and multiorgan failure.

Analysis of the blood samples showed that the microbial imbalance found in the COVID patients was also associated with raised levels of inflammatory cytokines and blood markers of tissue damage, such as C-reactive protein and certain enzymes.

This suggests that the gut microbiome might influence the immune system response to COVID-19 infection and potentially affect disease severity and outcome, say the researchers.

"In light of reports that a subset of recovered patients with COVID-19 experience persistent symptoms, such as fatigue, dyspnoea [breathlessness] and joint pains, some over 80 days after initial onset of symptoms, we posit that the dysbiotic gut microbiome could contribute to immune-related health problems post-COVID-19," they write.

This is an observational study, and as such, can't establish cause, added to which the gut microbiome varies widely among different populations, so the changes observed in this study may not be applicable to other COVID patients elsewhere, caution the researchers.

But they point to mounting evidence showing that gut microbes are linked to inflammatory diseases within and beyond the gut.

And they conclude: "Bolstering of beneficial gut species depleted in COVID-19 could serve as a novel avenue to mitigate severe disease, underscoring the importance of managing patients' gut microbiota during and after COVID-19." (ANI)

## **Food and Nutrition**

### **Food insufficiency linked to depression, anxiety during COVID-19 pandemic: Study (The Tribune: 20210113)**

<https://www.tribuneindia.com/news/health/food-insufficiency-linked-to-depression-anxiety-during-covid-19-pandemic-study-197483>

Food insufficiency linked to depression, anxiety during COVID-19 pandemic: Study

New research shows a 25 per cent rise in food insufficiency during the pandemic is linked to worsened mental health.

The new study was published in the American Journal of Preventive Medicine. Food insufficiency, the most extreme form of food insecurity, occurs when families do not have enough food to eat. Among the nationally representative sample of 63,674 adults in the US, Black and Latino Americans had over twice the risk of food insufficiency compared to White Americans.

"People of color are disproportionately affected by both food insufficiency and COVID-19," said Jason Nagata, MD, MSc, assistant professor of pediatrics at the University of California, San Francisco and lead author on the study. "Many of these individuals have experienced job loss and higher rates of poverty during the pandemic."

Overall, 65% of Americans reported anxiety symptoms and 52% reported depressive symptoms in the week prior to completing the survey. Those who did not have enough to eat during that week reported worse mental health, with 89% of food-insufficient Americans reporting anxiety symptoms compared to 63% of food-sufficient Americans. Similarly, 83% of food-insufficient Americans, compared to 49% of food-sufficient, Americans reported depressive symptoms.

"Hunger, exhaustion, and worrying about not getting enough food to eat may worsen depression and anxiety symptoms," said Nagata.

Researchers found that receipt of free groceries or meals alleviated some of the mental health burdens of food insufficiency.

"Policymakers should expand benefits and eligibility for the Supplemental Nutrition Assistance Program (SNAP) and other programs to address both food insecurity and mental

health," said Kyle Ganson, PhD, MSW, assistant professor at the University of Toronto, a co-author of the study. (ANI)

## **Gestational diabetes**

### **Research finds increased first-trimester exercise may reduce gestational diabetes risk (The Tribune: 20210113)**

<https://www.tribuneindia.com/news/health/research-finds-increased-first-trimester-exercise-may-reduce-gestational-diabetes-risk-197482>

Research finds increased first-trimester exercise may reduce gestational diabetes risk

Pregnant women who exercise more during the first trimester of pregnancy may have a lower risk of developing gestational diabetes, according to a new study.

The study has been led by Samantha Ehrlich, an assistant professor in the Department of Public Health at the University of Tennessee, Knoxville, and adjunct investigator with the Kaiser Permanente Division of Research. The analysis found that lower risk was associated with at least 38 minutes of moderate intensity exercise each day--a bit more than current recommendations of at least 30 minutes a day five days a week.

Gestational diabetes refers to diabetes diagnosed for the first time during pregnancy. It can pose serious health problems including pregnancy and delivery complications as well as increased future risk for diabetes in both mother and child.

"We know that exercise is safe and beneficial for healthy pregnant women. These results show that exercise is helpful in avoiding gestational diabetes, though you might need to do a little bit more than currently recommended to enjoy that benefit," Ehrlich said.

The observational study was based on women's self-reported levels of exercise during their first trimester of pregnancy. It found that exercising at least 38 minutes per day lowered the risk of gestational diabetes by 2.1 cases per 100 women and the risk of abnormal blood sugar by 4.8 cases per 100 women.

"We know that six to 10 women per 100 get gestational diabetes. If being more active could reduce that by two women per 100, that's a clear benefit," Ehrlich said.

The study, published December 21 in the journal *Diabetes Care*, analyzes data collected for the Pregnancy Environment and Lifestyle Study (PETALS), a longitudinal study that included a physical activity questionnaire from 2,246 pregnant members of Kaiser Permanente Northern

California. The women in the study were racially and ethnically diverse and of a wide range of pre-pregnancy weight classifications.

The authors suggest that the current recommendations may need to be rethought to improve women's chances of preventing gestational diabetes with exercise. The most recent guidelines from the American College of Obstetricians and Gynecologists were updated in 2020, and those from the US Department of Health and Human Services were updated in 2018. - ANI

## **Chronic stress**

### **Study finds fragmented sleep patterns can predict vulnerability to chronic stress (The Tribune: 20210113)**

<https://www.tribuneindia.com/news/health/study-finds-fragmented-sleep-patterns-can-predict-vulnerability-to-chronic-stress-197481>

Study finds fragmented sleep patterns can predict vulnerability to chronic stress

New research from NYU Abu Dhabi's Laboratory of Neural Systems and Behavior for the first time used an animal model to demonstrate how abnormal sleep architecture can be a predictor of stress vulnerability.

These important findings have the potential to inform the development of sleep tests that can help identify who may be susceptible -- or resilient -- to future stress. In the study, Abnormal Sleep Signals Vulnerability to Chronic Social Defeat Stress, which appears in the journal *Frontiers in Neuroscience*, NYUAD Assistant Professor of Biology Dipesh Chaudhury and Research Associate Basma Radwan describe their development of a mouse model to detect how disruptions in Non-rapid Eye Movement (NREM) sleep result in increased vulnerability to future stress.

The researchers assessed the sleep characteristics of both stress-susceptible and stress-resilient mice before and after experiencing chronic social defeat (CSD) stress. The social behaviour of the mice post-stress was classified into two main phenotypes: those susceptible to stress that displayed social avoidance and those that were resilient to stress. Pre-CSD, mice susceptible to stress displayed increased fragmentation of Non-Rapid Eye Movement (NREM) sleep due to increased switching between NREM and wake and shorter average duration of NREM bouts, relative to mice resilient to stress.

Their analysis showed that the pre-CSD sleep features from both phenotypes of mice allowed prediction of susceptibility to stress with more than 80 per cent accuracy. Post-CSD, susceptible mice maintained high NREM fragmentation during the light and dark phase while resilient mice exhibited high NREM fragmentation only in the dark.

The findings demonstrate that mice that become susceptible to CSD stress exhibit pre-existing abnormal sleep/wake characteristics prior to stress exposure. In addition, subsequent exposure to stress further impairs sleep and the homeostatic response.

"Our study is the first to provide an animal model to investigate the relationship between poor sleep continuity and vulnerability to chronic stress and depressive disorders," said Chaudhury and Radwan. "This marker of vulnerability to stress opens up avenues for many possible future studies that could further explain the underlying molecular processes and neural circuitry that lead to mood disorders." - ANI

## **Vaccine vials**

### **Vaccine vials land in city, Serum moves 6.4m doses (Hindustan Times: 20210113)**

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

The first consignment of Covid-19 vaccine doses arrives at the Indira Gandhi International Airport in Delhi on a special SpiceJet flight from Pune on Tuesday morning. PTI

Pune/New Delhi : Marking a milestone about 10 months after the coronavirus disease (Covid-19) gripped the country, India on Tuesday dispatched about 6.44 million doses of the Covishield vaccine to 14 cities from its manufacturer's Pune headquarters, setting in motion a massive inoculation drive that will begin this weekend.

At 4:53am, three temperature-controlled trucks escorted by police vehicles left the Serum Institute of India (SII)'s building on the outskirts of Pune for the airport, carrying vials of the vaccine that, along with Bharat Biotech's Covaxin, has been okayed by the drug controller for restricted emergency use.

Pune deputy commissioner of police Namrata Patil, accompanied by SII staff, cracked open a coconut — believed to be auspicious — to flag off the vehicles that left the premises.

"Our trucks left the SII facility early morning and now the vaccine is being distributed in the entire country. This is a proud and historic moment as scientists, experts and all other stakeholders took great efforts while making this vaccine in less than a year," said SII chief executive Adar Poonawalla, whose organisation is conducting clinical trials and manufacturing the Oxford University-AstraZeneca vaccine.

The first consignment of 264,000 doses of Covishield reached Delhi's central storage facility at the Rajiv Gandhi Super Specialty Hospital (RGSSH) in the afternoon around high security, according to officials aware of the developments.

Twenty-two boxes containing 1,200 vials each of the vaccine was brought to the hospital's utility block that has been retrofitted with 90 deep freezers, which can store 4.1 million doses of the vaccine.

“Each of the vials (5 millilitres) contains 10 doses (0.5ml each) of the vaccine. So far, Delhi has received 264,000 vaccine doses that will be almost enough for the health care workers in the city,” said a senior government official who asked not to be named.

At the start of the vaccination drive beginning this Saturday, the central government plans to vaccinate 30 million health care and frontline workers (employees across government departments, the police and civic bodies). Next on the priority list are an estimated 270 million people (those above 50 years of age, and people with serious comorbidities such as diabetes and hypertension). This exercise, according to some estimates, could take at least seven months.

A SpiceJet flight carrying the vials landed at the Delhi airport around 10am. The Delhi Police formed a “green corridor” to safely transport the vaccines to the hospital, which received the consignment around 3pm.

“There are three levels of security that will be in place (in the hospital). There are CCTV cameras installed within and outside the building. There are hospital guards stationed at the vaccine store round the clock, and police personnel deployed outside the store,” said Dr Chhavi Gupta, a spokesperson for RGSSH.

In the national capital, the vaccination drive will be launched at 89 centres (49 private and 40 public health care facilities) that are part of the 5,000 sites approved by the Centre across the country. Delhi has pegged the number of health care workers at 300,000, of which around 225,000 have already been registered with the government.

“Delhi is fully prepared and all preparations are in place,” health minister Satyendar Jain said.

Apart from Delhi, vials of the vaccine were flown to Chennai, Kolkata, Guwahati, Shillong, Ahmedabad, Hyderabad, Vijayawada, Bhubaneswar, Patna, Bengaluru, Lucknow and Chandigarh. On Tuesday, four airlines (Air India, IndiGo, SpiceJet and GoAir) operated nine flights to transport 5.47 million doses of the vaccine to these cities across the country.

Separately, Maharashtra minister Rajesh Tope said his state, too, received the first consignment of 963,000 doses by road and that the vaccine will be distributed among 511 camps covering all districts. “We have also developed 3,135 cold chains to be used for storing the vaccines,” he said in Mumbai.

The Indian government has procured 11 million doses of Covishield from SII — the world's largest vaccine manufacturer by volume — at a cost of ₹200 per dose, exclusive of taxes.

For Bharat Biotech's Covaxin (it is still in Phase 3 trials), the number is 5.5 million doses, of which 1.65 million doses are being procured free of cost, and the remaining 3.85 million doses

are being purchased at a cost of ₹295 per dose, exclusive of taxes, making the net cost of a Covaxin dose ₹206.

In case of both vaccines, recipients will get two doses four weeks apart and the effects will start showing 14 days after the second dose.

“The Centre is very closely collaborating with the states and Union Territories for rolling out the vaccination on January 16, 2021. Since different individuals will be discharging different duties they need to be trained as per the best of their ability,” Union health secretary Rajesh Bhushan said at a briefing.

The government has trained 2,360 master trainers, who in turn have trained 61,000 programme managers, 200,000 vaccinators and 370,000 other vaccination team members so far.

Health authorities in states have said they would make use of experience gained from running regular child immunisation programmes for polio to ensure full coverage in what they called the world’s biggest vaccination drive. “The vaccine is here even then that doesn’t take away the fact that people will still have to observe Covid-19 appropriate behaviour such wearing a mask, maintaining hand hygiene and ensuring physical distancing,” said Dr Balram Bhargava, director general of premier scientific body Indian Council of Medical Research.

As of Tuesday, India has reported 10,495,813 cases of the viral infection while 1,51,581 people have died in the country.

## **Vaccine roll-out**

### **Shots in store, Delhi set for vaccine roll-out (Hindustan Times: 20210113)**

Capital receives 264,000 doses of Covishield; CM Kejriwal to launch the vaccination drive at Lok Nayak hospital

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

Delhi’s Rajiv Gandhi Superspeciality hospital in east Delhi’s Tahirpur received 264,000 doses of Covishield -- the Indian variation of the Oxford/AstraZeneca vaccine manufactured by the Pune-based Serum Institute of India (SII) – as India on Tuesday began the massive task of transporting the Covid-19 vaccine to all parts of the country ahead of the January 16 start of the immunisation drive against the coronavirus disease.

In Delhi, the vaccination drive will be launched at 89 centres – which are part of the 5,000 sites approved by the Centre across the country – with healthcare workers being the first ones to get

the job. In Delhi, the drive is scheduled to be formally launched by chief minister Arvind Kejriwal at Lok Nayak hospital, a senior government official said.

“Delhi is fully prepared and all preparations are in place,” said Delhi’s health minister Satyendar Jain.

The 89 locations approved so far include – 49 private hospitals and 40 public healthcare facilities. They include hospitals such as Lok Nayak, AIIMS, BLK Super Speciality Hospital, Sir Gangaram Hospital, Baba Saheb Ambedkar Hospital, Fortis, Indraprastha Apollo, Rajiv Gandhi Superspeciality (Cancer), Rajiv Gandhi Superspeciality (Tahirpur), ILBS, Venkateshwar Hospital (Dwarka), Madan Mohan Malviya (Malviya Nagar), Moolchand Hospital and St Stephen’s Hospital.

Preparations at the 89 selected vaccination locations were on a full swing on Tuesday, with district officials taking note of any last-minute requirements. “We, the district officials, are just going to the sites and taking note of any last-minute additions or logistics that needs to be taken care of,” said a second government official.

On the first day, one booth or vaccination site each will be there at 89 centres. However, over the next week, the government has planned to increase the total number of booths to at least 225, by setting up multiple vaccination sites in some of the locations, said a senior government official.

The official added, “We have set up teams that have assessed the 89 vaccination locations. Several of them are capable of accommodating more than one vaccination site.”

The teams have so far identified several hospitals that include Lok Nayak and AIIMS as locations that can have three or more vaccination sites, said the official. “At each site, there has to be space not only for vaccination but also for verification of candidates, and rooms where they can rest while being monitored for at least 30 minutes after taking the shot,” he said.

Each booth will administer a maximum of 100 vaccine shots a day and run by six to eight staff.

A health department official said, “There are 621 functional cold chain points. Each cold chain point will be connected to four to five vaccination sites. This means, most of the big hospitals will have more than one vaccination sites as they would need to quickly vaccinate all their own staff, before moving on to others from smaller centres,” said a health department official.

With time, the government aims to increase both vaccination locations and vaccination sites. “We had sent a list of more than 600 locations, of which 89 have been approved by the central government so far. In the coming days, more locations are likely to get approved. Eventually, we have plans to increase vaccinations sites to 1,000 in several phases,” the official added.

On Tuesday morning, 22 boxes containing 1,200 vials each of the vaccine was brought to Rajiv Gandhi Superspeciality hospital’s utility block that has been retrofitted with 90 deep freezers which can store 4.1 million doses of the vaccine. “Each of the vials contains ten doses of the

vaccine. So far, Delhi has received 264,000 vaccine doses that will be almost enough for the healthcare workers in the city,” said another senior government official.

“There are three levels of security that will be in place – first there are CCTV cameras installed within and outside the building, second there are hospital guards stationed at the vaccine store round the clock, and police personnel deployed outside the store,” said Dr Chavvi Gupta, spokesperson for the hospital.

The Delhi has pegged the number of healthcare workers at 300,000, of which around 225,000 have already been registered. The government has planned to finish giving them the vaccine shots by the end of this month, said another official.

Next in line would be frontline workers – a wide range of people including police, teachers, sanitation, and civil defence volunteers. Their total number has been estimated at 600,000 and registration process for them is underway.

The third category that would include people aged over 50 years and those with serious comorbidities irrespective of age. The government has roughly pegged the number at 4.2 million for these categories taken together but, senior officials said, it is likely to witness increase. Registration for this category is yet to begin.

While the government has prepared a draft list of people over 50 years through electoral data, those with comorbidities are yet to be identified, the official said.

“We are committed to ensuring that the vaccination goes smoothly for people who are vaccinated as well as officials and workers involved in the process,” said Dr Suneela Garg, professor of community medicine at Maulana Azad Medical College and advisor to the Indian Council of Medical Research (ICMR).

## **Vaccines (The Asian Age: 20210113)**

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=15343697>

■ Govt ready for inoculations from Sat ■ Daily cases at 7-month low

## Vaccines' 1st batch sent to states, UTs

VINEETA PANDEY  
NEW DELHI, JAN. 12

The Centre has started the procurement and transportation of Covid-19 vaccines for the nationwide inoculation drive that begins from Saturday. Union health secretary Rajesh Bhushan said Tuesday the entire doses of 1.10 crore Oxford-AstraZeneca vaccine Covishield made by the Serum Institute of India and 55 lakh Covaxin doses from Bharat Biotech will reach all states and Union territories by Thursday.

Mr Bhushan said 54.72 lakh vaccine doses had reached the designated national and state-level stores till Tuesday afternoon. He clarified that apart from the ordered vaccines, Bharat Biotech is also giving 16.5 lakh



Workers sort Covishield vaccines at a storage facility after the first batch of vaccines from the Serum Institute of India arrived in Chennai on Tuesday. — PTI

Covaxin doses free to the government as a goodwill gesture.

"55 lakh doses of Covaxin are being procured from Bharat Biotech. For 38.5 lakh

doses, the price is ₹295 each, excluding taxes. Bharat Biotech is providing 16.5 lakh doses free, as a goodwill gesture, which ultimately brings the cost of Covaxin down to ₹206

per dose," Mr Bhushan said.

The 1.1 crore Covishield vaccine doses are being procured from SII at a cost of ₹200 per dose, excluding taxes. More vaccines will be ordered in the days ahead. Covaxin will also be supplied to Brazil and some other countries.

Niti Aayog member (health) V.K. Paul said both Covishield and Covaxin had been tested on a large number of people and "are safe, with no risk of any significant side effect".

The health secretary said four other vaccine candidates by Zydus Cadila, Russia's Sputnik V, Biological E and Gennova are also in advanced stages of clinical trials and once cleared by the Drugs Controller-General of

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## Stress

### Stress in expecting mothers impact children: Study (New Kerala: 20210113)

<https://www.newkerala.com/news/2021/7147.htm>

Expecting mothers, stop worrying or taking any kind of stress as it may affect your baby's chance of developing disease, a new study suggests.

According to a study, published in the journal scholarly journal Biological Psychiatry, stress on an expectant mother could affect her baby's chance of developing disease -- perhaps even over the course of the child's life.

Psychosocial factors creating stress -- such as lack of social support, loneliness, marriage status or bereavement -- may be mutating their child's mitochondrial DNA and could be a precursor to a host of diseases, the researchers at the University of Cincinnati in the US said.

"There are a lot of conditions that start in childhood that have ties to mitochondrial dysfunction including asthma, obesity, attention deficit hyperactivity disorder and autism," said the lead researcher, Kelly Brunst, Assistant professor at the varsity.

"The fetal and infant period is a vulnerable time for environmental exposure due to heightened development during these periods," Brunst added.

For the study, the researchers sequenced the mitochondrial genome and identified mutations in 365 placenta samples from birth mothers.

A multivariable regression model was used to look at maternal lifetime stress in relation to the number of gene mutations in the placenta mitochondrial genome.

Women experiencing increased psychosocial stress -- that can range from sexual assault, domestic violence or serious injury to incarceration, physical or mental illness and family hardship -- over their lifetime exhibited a higher number of placental mitochondrial mutations.

## **Prostate cancer**

### **Higher coffee intake may reduce prostate cancer risk (New Kerala: 20210113)**

Do you crave for coffee everyday? If so, then there's a good news for you. A new study suggests that drinking several cups of coffee every day may be linked to a lower risk of developing prostate cancer.

The study, published in the journal *BMJ Open*, showed that each additional daily cup of the brew was associated with a reduction in relative risk of nearly 1 per cent.

"This study suggests that increased coffee consumption may be associated with a reduced risk of prostate cancer," according to the researchers of the study, including Xiaonan Chen, Department of Urology, Shengjing Hospital of China Medical University.

Prostate cancer is the second most common cancer, and the sixth leading cause of cancer death in men.

Nearly three out of four cases occur in the developed world, and since the 1970s, new cases of the disease have risen sharply in Asian countries, including Japan, Singapore, and China.

In a bid to advance understanding of the issue, the researchers trawled research databases for relevant cohort studies published up to September 2020.

They pooled the data from 1615 reported on the risk of prostate cancer associated with the highest, compared with the lowest, coffee consumption; 13 reported on the risk associated with an additional daily cup.

The highest level of consumption ranged from 2 to 9 or more cups a day; the lowest level ranged from none to fewer than 2 cups a day.

The included studies were carried out in North America (7), Europe (7) and Japan (2). They included more than 1 million men (1,081,586) of whom 57,732 developed prostate cancer.

Compared with the lowest category of coffee consumption, the highest category was associated with a reduction in prostate cancer risk of 9 per cent.

And each additional daily cup was associated with a reduction in risk of 1 per cent.

Coffee consumption has been linked to a lower relative risk of liver, bowel, and breast cancers, but as yet, there is no conclusive evidence for its potential role in prostate cancer risk reduction, the researchers said.

## **Therapeutic strategies**

### **Link between driver of ovarian cancer, metabolism opens up new therapeutic strategies (New Kerala: 20210113)**

<https://www.newkerala.com/news/2021/6931.htm>

Mutations that inactivate the ARID1A gene in ovarian cancer increase utilisation of the glutamine amino acid making cancer cells dependent on glutamine metabolism, according to a study by The Wistar Institute published online in Nature Cancer.

Researchers also showed that pharmacologic inhibition of glutamine metabolism may represent an effective therapeutic strategy for ARID1A-mutant ovarian cancer.

Up to 60 per cent of ovarian clear cell carcinomas (OCCC) have been inactivating mutations in the ARID1A tumor suppressor gene. These mutations are known genetic drivers of this type of cancer, which typically does not respond to chemotherapy and carries the worst prognosis among all subtypes of ovarian cancer.

The laboratory of Rugang Zhang, Ph.D., deputy director of The Wistar Institute Cancer Center, professor and leader of the Immunology, Microenvironment and Metastasis Program, studies the effects of ARID1A inactivation to devise new mechanism-guided therapeutic strategies and combination approaches to enhance immunotherapy for ovarian cancer.

"Metabolic reprogramming is a hallmark of many cancers, including OCCC, so in this study we assessed whether ARID1A plays a role in regulation of metabolism," said Zhang, corresponding author on the paper.

"We found that its inactivation in cancer cells creates a specific metabolic requirement for glutamine and exposed this as a vulnerability that could be exploited for therapeutic purposes," added Zhang.

The authors inactivated ARID1A in wild type ovarian cancer cells and observed increased glutamine consumption. Glutamine is normally required for cancer cells to grow, but Zhang and colleagues unveiled a stronger dependence of ARID1A-mutant cells on this amino acid, which significantly enhanced the growth suppression induced by glutamine deprivation.

ARID1A is part of a protein complex called SWI/SNF that modulates gene expression. The authors investigated the transcriptional effect of ARID1A inactivation and found that GLS1, which encodes for the glutaminase enzyme, was the top upregulated gene among those controlling glutamine metabolism.

Accordingly, GLS1 was expressed at significantly higher levels in tumor samples from patients with other cancer types that also carry mutations in the SWI/SNF complex.

The team evaluated the therapeutic potential of inhibiting the glutamine metabolism by blocking the glutaminase enzyme with the CB-839 inhibitor. It has been reported that this molecule is under investigation in clinical trials and is well tolerated as a single agent and in combination with other anticancer therapies.

When tested in vivo on OCCC mouse models, CB-839 significantly reduced tumor burden and prolonged survival. These studies were expanded to mice carrying patient-derived tumor transplants, confirming that CB-839 impaired the growth of ARID1A-mutant but not ARID1A-wildtype tumors.

Researchers also combined CB-839 with anti-PDL1 treatment and revealed a synergy between glutaminase inhibitors and immune checkpoint blockade in suppressing the growth of ARID1A-mutant OCCC tumors.

"Our findings suggest that glutaminase inhibitors warrant further studies as a standalone or combinatorial therapeutic intervention for OCCC, for which effective options are very limited," said Shuai Wu, Ph.D., first author of the study and a staff scientist in the Zhang Lab.

Glutaminase inhibitors could become a new strategy to precisely target a specific vulnerability of OCCC cells associated with loss of ARID1A function.

## **COVID-19 severity, immune response**

### **Make-up of gut microbiome may influence COVID-19 severity, immune response (New Kerala: 20210113)**

<https://www.newkerala.com/health-news.php>

The variety and volume of bacteria in the gut, known as the microbiome, may influence the severity of COVID-19 as well as the magnitude of the immune system response to the infection, suggests the findings of new research.

The research was published online in the journal Gut.

Imbalances in the make-up of the microbiome may also be implicated in persisting inflammatory symptoms, dubbed 'long COVID', the findings suggest.

COVID-19 is primarily a respiratory illness, but the evidence suggests that the gut may also have a role.

As the gut is the largest immunological organ in the body and its resident microbes are known to influence immune responses, the researchers wanted to find out if the gut microbiome might also affect the immune system response to COVID-19 infection.

They, therefore, obtained blood and stool samples and medical records from 100 hospital inpatients with laboratory-confirmed COVID-19 infection between February and May 2020 and from 78 people without COVID-19 who were taking part in a microbiome study before the pandemic.

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COVID patients had higher numbers of *Ruminococcus gnavus*, *Ruminococcus torques* and *Bacteroides dorei* species than people without the infection.

And they had far fewer of the species that can influence immune system response, such as *Bifidobacterium adolescentis*, *Faecalibacterium prausnitzii* and *Eubacterium rectale*.

Lower numbers of *F. prausnitzii* and *Bifidobacterium bifidum* were particularly associated with infection severity after taking account of antibiotic use and patient age.

And the numbers of these bacteria remained low in the samples collected up to 30 days after infected patients had cleared the virus from their bodies.

COVID-19 infection prompts the immune system to produce inflammatory cytokines in response. In some cases, this response can be excessive ('cytokine storm'), causing widespread tissue damage, septic shock, and multiorgan failure.

Analysis of the blood samples showed that the microbial imbalance found in the COVID patients was also associated with raised levels of inflammatory cytokines and blood markers of tissue damage, such as C-reactive protein and certain enzymes.

This suggests that the gut microbiome might influence the immune system response to COVID-19 infection and potentially affect disease severity and outcome, say the researchers.

"In light of reports that a subset of recovered patients with COVID-19 experience persistent symptoms, such as fatigue, dyspnoea [breathlessness] and joint pains, some over 80 days after initial onset of symptoms, we posit that the dysbiotic gut microbiome could contribute to immune-related health problems post-COVID-19," they write.

This is an observational study, and as such, can't establish cause, added to which the gut microbiome varies widely among different populations, so the changes observed in this study may not be applicable to other COVID patients elsewhere, caution the researchers.

But they point to mounting evidence showing that gut microbes are linked to inflammatory diseases within and beyond the gut.

And they conclude "Bolstering of beneficial gut species depleted in COVID-19 could serve as a novel avenue to mitigate severe disease, underscoring the importance of managing patients' gut microbiota during and after COVID-19."

**Coronavaccine (Hindustan: 20210113)**

# सुखद: कोरोना टीके की खेप दिल्ली समेत 13 शहरों में पहुंची

टीकाकरण 3 दिन शेष

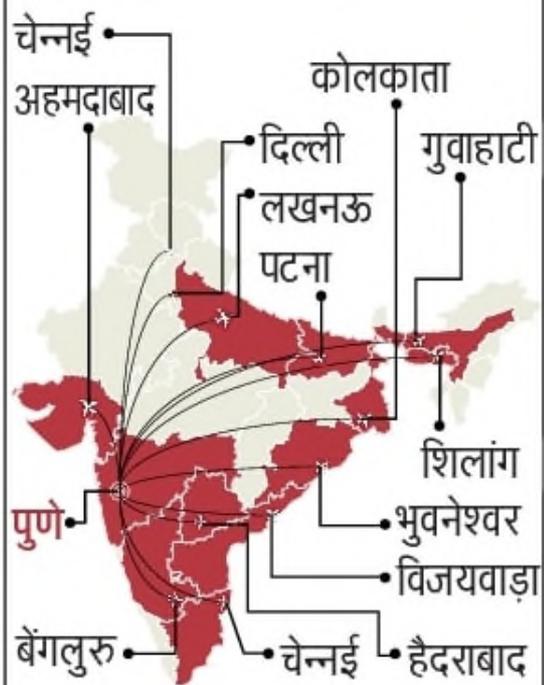
नई दिल्ली | हिन्दुस्तान टीम

कोरोना टीके की पहली खेप मंगलवार को पुणे स्थित सीरम इंस्टीट्यूट ऑफ इंडिया से दिल्ली समेत देश के 13 शहरों में पहुंच गई। कोविशील्ड टीके की यह खेप पुणे में भी कोल्ड चेन को भेजी गई है। देशभर में 16 जनवरी से टीकाकरण शुरू होना है।

केंद्रीय स्वास्थ्य सचिव राजेश भूषण ने मंगलवार को कहा कि 54.72 लाख खुराक विभिन्न डिपो पर पहुंच चुकी हैं। ऑर्डर की बाकी खुराक भी 14 जनवरी तक सभी राज्यों तक पहुंच जाएंगी।

**सुबह 10.15 बजे पहुंची:** पुणे से स्पाइस जेट की उड़ान से मंगलवार सुबह 10.15 बजे टीके की खेप दिल्ली एयरपोर्ट पर उतरी। कार्गो टर्मिनल पर तापमान नियंत्रित इकाइयों में संग्रहीत करने के बाद उसे राजीव गांधी सपर

पुणे से भेजी कोविशील्ड



**बाजार में दाम हजार रुपये**

सीरम के सीईओ अदार पूनावाला ने कहा कि कोविशील्ड की बाजार में कीमत एक हजार रुपये होगी। इसे केमिस्ट की दुकानों पर बेचेंगे। सरकार को 10 करोड़ खुराक 200 रुपये के हिसाब से दी गई है।

# केंद्रों पर टीका पहुंचने का इंतजार



05 स्थान रिपोर्ट

दिल्ली में कोरोना वैक्सीन पहुंच गई है और 16 जनवरी से टीकाकरण शुरू हो जाएगा। सबसे पहले 89 अस्पतालों और स्वास्थ्य केंद्रों पर टीकाकरण होगा। केंद्रों को वैक्सीन पहुंचने का इंतजार है। हिन्दुस्तान संवाददाताओं ने कुछ केंद्रों पर जाकर तैयारियों का जायजा लिया।

## एंजुलेंस हमेशा तैनात रहेगी

पीएसआरआई

राजधानी दिल्ली का पीएसआरआई अस्पताल भी उन 89 केंद्रों में शामिल है, जहां 16 जनवरी को टीकाकरण होगा।

अस्पताल में तीन बड़े कमरों का एक टीकाकरण केंद्र तैयार किया गया है। यहां टीकाकरण का पूर्वाभ्यास भी किया गया था। अस्पताल के एक वरिष्ठ डॉक्टर ने मंगलवार को जानकारी देते हुए बताया कि 10 कर्मचारियों की टीम यहां टीकाकरण के लिए मौजूद रहेगी। किसी भी आपात से निपटने के लिए अस्पताल में एंजुलेंस की व्यवस्था भी है ताकि दुष्प्रभाव होने पर मरीज को उचित इलाज मिल सके।



राजीव गांधी अस्पताल के बाहर मंगलवार को तैनात पुलिसकर्मी। • एजेंसी

## कमी न रहे इसका रख रहे ध्यान

एलबीएस अस्पताल

लाल बहादुर शास्त्री अस्पताल को भी कोरोना टीकाकरण के लिए चिह्नित

किया गया है। मंगलवार दोपहर दो बजे यहां तैयारियां चल रही थीं। अस्पताल के वरिष्ठ अधिकारी किसी तरह की कमी न रहे इसका ध्यान रख रहे थे।

## स्थानांतरण की सुविधा मौजूद

स्वामी दयानंद अस्पताल

स्वामी दयानंद अस्पताल में वैक्सीन लगाने की तैयारियां पूरी हो चुकी हैं। सीएमओ डॉ. ग्लैडबिन त्यागी ने बताया कि केंद्र आपातकालीन विभाग के पास बनाया है, ताकि मरीज को परेशानी हो तो उसे तुरंत स्थानांतरित किया जा सके।

## डॉक्टर कमी का जायजा लेते दिखे

करोलबाग

टीकाकरण के लिए करोलबाग में स्थित जीवनमाला अस्पताल को चिह्नित किया गया है। डॉक्टर नरेश जायसवाल ने कहा कि सभी काम लगभग पूरा हो गया है। अब यह देखा जा रहा है कि कहीं कोई कमी तो नहीं रह गई है।

## स्वास्थ्यकर्मियों को पहले टीका

एम्स

कोरोना के टीकाकरण के पूर्वाभ्यास के बाद एम्स में टीका लगाने वाला केंद्र सामान्य दिनों की तरह बंद था। दो सुरक्षाकर्मी गेट के बाहर बैठे थे। एम्स पहले अपने स्वास्थ्यकर्मियों को पहले टीका देगा।

आदेश

## ‘इलाज से इनकार नहीं कर सकेंगे’

नई दिल्ली (का.सं)। कोरोना का टीका वैसे तो पूरी तरह सुरक्षित है, लेकिन अगर कोई दुष्प्रभाव होता है तो निजी अस्पताल उस शख्स का इलाज करने से इनकार नहीं कर सकेंगे। हल्का दुष्प्रभाव होने की स्थिति में भी इलाज के लिए टीकाकरण केंद्रों पर चिकित्सकीय व्यवस्था की गई है।

दिल्ली सरकार के स्वास्थ्य सेवा महानिदेशालय ने सभी निजी अस्पतालों और नर्सिंग होम को यह आदेश जारी किया है कि टीके के दुष्प्रभाव से पीड़ित कोई व्यक्ति अगर अस्पताल पहुंचता है तो इलाज से मना नहीं कर सकते।

सुविधा

## पूर्वी निगम के 32 केंद्रों पर व्यवस्था

नई दिल्ली, (का.सं)। पूर्वी निगम के सबसे बड़े अस्पताल स्वामी दयानंद सहित 32 केंद्रों पर निगम कोविड के लिए टीकाकरण की सुविधा मुहैया कराएगी। यह जानकारी पूर्वी निगम के महापौर निर्मल जैन ने दी। उन्होंने कहा कि सभी तैयारियां पूरी कर ली गई हैं।

## WHO

**डब्ल्यूएचओ के 'हजार पर एक डॉक्टर' के लक्ष्य को हासिल करने का प्रयास : हर्षवर्धन (Dainik Jagaran: 20210113)**

<https://www.jagran.com/news/national-india-to-achieve-who-target-of-1-doctor-for-1000-patient-by-this-year-21266882.html>

केंद्रीय स्वास्थ्य मंत्री ने कहा कि एम्स की स्थापना का दीर्घावधिक लक्ष्य लोगों के स्वास्थ्य में सुधार लाना है। उन्होंने कहा कि डब्ल्यूएचओ द्वारा निर्धारित प्रत्येक 1000 मरीज पर एक डॉक्टर के अनुपात के लक्ष्य को इसी साल प्राप्त करने का प्रयास रहेगा।

नई दिल्ली, एजेंसियां। केंद्रीय स्वास्थ्य मंत्री हर्षवर्धन ने मंगलवार को कहा कि एक हजार मरीज पर एक डॉक्टर के विश्व स्वास्थ्य संगठन (डब्ल्यूएचओ) के लक्ष्य को इस साल तक ही हासिल कर लेने प्रयास चल रहा है। हर्षवर्धन एम्स गुवाहाटी में एमबीबीएस छात्रों के पहले बैच की पढ़ाई शुरू होने के अवसर उन्हें वीडियो कांफ्रेंस के जरिए संबोधित कर रहे थे। इस अवसर पर स्वास्थ्य और परिवार कल्याण राज्य मंत्री अश्विनी कुमार चौबे भी उपस्थित थे।

डब्ल्यूएचओ द्वारा निर्धारित प्रत्येक 1,000 मरीज पर एक डॉक्टर के अनुपात को इसी साल प्राप्त करने के सरकार के लक्ष्य पर उन्होंने कहा कि 2013-14 के शिक्षण सत्र से छह नए एम्स में एमबीबीएस के छात्रों के लिए सीटों की संख्या बढ़कर 600 हो गई है जिससे 300 अतिरिक्त अभ्यर्थियों को लाभ हो रहा है। स्वास्थ्य मंत्री ने कहा कि एम्स गुवाहाटी सहित नए एम्स के शुरू होने के बाद देश में सरकारी संस्थानों में एमबीबीएस की सीटें बढ़कर 42,545 हो गई हैं और सरकार का लक्ष्य इन्हें बढ़ाकर 80,000 करने का है।

सुप्रीम कोर्ट ने 31 जनवरी तक देश भर में आंगनवाड़ी सेवाओं को खोलने को लेकर आदेश दिया है।

सुप्रीम कोर्ट का राज्यों को आदेश, 31 जनवरी तक लें आंगनवाड़ी सेवाओं को शुरू करने का निर्णय

यह भी पढ़ें

केंद्रीय स्वास्थ्य मंत्री ने कहा कि देश के विभिन्न भागों में नए एम्स की स्थापना का लक्ष्य सभी क्षेत्रों में किफायती स्वास्थ्य सेवा के अंतर को कम करना है और आम लोगों के स्वास्थ्य में सुधार लाना है। स्वास्थ्य मंत्रालय द्वारा जारी बयान के अनुसार, हर्षवर्धन ने इस अवसर पर प्रधानमंत्री नरेंद्र मोदी के 'सभी के लिए स्वास्थ्य' दृष्टिकोण की याद दिलाई। प्रधानमंत्री स्वास्थ्य सुरक्षा योजना के पांचवें चरण के तहत गुवाहाटी में एम्स की स्थापना की गई है।

राकेश शर्मा पहले भारतीय अंतरिक्ष यात्री हैं

जब विमान क्रैश बाल-बाल बचे थे अंतरिक्ष में जाने वाले पहले भारतीय राकेश शर्मा

यह भी पढ़ें

बयान के अनुसार हर्षवर्धन ने कहा, 'देश के विभिन्न हिस्सों में नए एम्स की स्थापना का अल्पकालिक लक्ष्य सभी क्षेत्रों में किफायती स्वास्थ्य सेवा के अंतर को कम करना है वहीं दीर्घावधिक लक्ष्य सामान्य लोगों के स्वास्थ्य में सुधार लाना है।' असम के लोगों को बेहतर स्वास्थ्य सुविधा मिलने की उम्मीद पर खुशी जाहिर करते हुए मंत्री ने कहा, 'यह 700 बिस्तरों वाला अस्पताल होगा जिसमें विभिन्न विभाग होंगे और सुपर स्पेशियलिटी विभाग भी होंगे। यह सबसे महत्वाकांक्षी योजनाओं में से एक है जिसपर 1,123 करोड़ रुपये की लागत आनी है, जिसमें से 185 करोड़ रुपये से अत्याधुनिक मेडिकल उपकरणों की खरीद की जाएगी।' उन्होंने परियोजना के जल्द पूरा होने की उम्मीद जताई। असम के मुख्यमंत्री सर्बानंद सोनोवाल ने असम में एम्स देने के लिए प्रधानमंत्री नरेंद्र मोदी का आभार जताया।

पीएमएलए के न्यायिक प्राधिकरण ने तब्लीगी जमात पर सुरक्षित रखा फैसला

पीएमएलए के न्यायिक प्राधिकरण ने तब्लीगी जमात पर सुरक्षित रखा फैसला

यह भी पढ़ें

हर युवा को काम देने का प्रयास

हर्षवर्धन ने राष्ट्रीय एड्स नियंत्रण संगठन द्वारा आयोजित एक क्विज प्रतियोगिता में कहा कि भारत हर युवा को रोजगार के अवसर मुहैया कराने के लक्ष्य की तरफ से तेजी से आगे बढ़ रहा है। उन्होंने कहा कि आज दुनिया में भारत की आबादी सबसे युवा है। आर्थिक और सामाजिक विकास के लिए इससे बेहतर समय कभी नहीं होगा।