



# DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY  
Wednesday 20201028

## Transmission risks

### **Airplane COVID-19 risk 'very low' with masks, other actions: Report (The Tribune: 20201028)**

<https://www.tribuneindia.com/news/health/airplane-covid-19-risk-very-low-with-masks-other-actions-report-161915>

Researchers at Harvard School of Public Health say transmission risks can be 'reduced to very low levels through the combination of layered infection control measures'

Airplane COVID-19 risk 'very low' with masks, other actions: Report

Airplanes of German carrier Lufthansa are parked at the Berlin Schoenefeld airport, amid the spread of the coronavirus disease outbreak in Schoenefeld, Germany. Reuters File

Transmission risks of COVID-19 during airline flights are very low and below other routine activities during the pandemic such as grocery shopping or going out to dinner, when using face coverings and taking other steps, researchers at the Harvard School of Public Health said on Tuesday.

The report found transmission risks can be "reduced to very low levels through the combination of layered infection control measures."

The report, funded by Airlines for America - a trade group representing American Airlines, United Airlines, Delta Air Lines and others - and a consortium of aircraft and equipment manufacturers and airport operators, comes as US airlines lose billions of dollars a month as passenger demand remains down 65 per cent year on year because of the coronavirus.

US carriers are operating just 50 per cent the flights they did in 2019. Some carriers have recently announced new plans to end blocking of middle seats during the pandemic.

The Aviation Public Health Initiative team at Harvard recommended strategies to mitigate transmission risk on aircraft, during boarding and exiting.

The report found after airlines mandated masks, boosted cleaning procedures and revised boarding procedures, "and with millions of passenger hours flown, there has been little evidence to date of onboard disease transmission".

The report noted commercial passenger aircraft are equipped with ventilation systems that refresh cabin air on average every 2-3 minutes and removing more than 99 per cent of particles of the size that cause SARS-CoV-2.

Researchers also found face masks significantly reduce risks of disease transmission during the COVID-19 crisis. Airlines have mandated masks, added new cleaning and implemented protocols to manage boarding and deplaning.

The US Centers for Disease Control and Prevention this month issued a "strong recommendation" that all passengers and employees on airplanes and in airports should wear masks to prevent the spread of COVID-19.

The Harvard report said risks remain that contagious pre- or asymptomatic people could be unaware and opt to fly.

The study echoes a US Defense Department study released earlier this month that found the risk of exposure to the coronavirus on flights is very low.

When a seated passenger is wearing a mask, an average 0.003% of air particles within the breathing zone around a person's head are infectious, even when every seat is occupied, it found. Reuters

## **COVID's cognitive costs**

### **COVID's cognitive costs? Some patients' brains may age 10 years (The Tribune: 20201028)**

<https://www.tribuneindia.com/news/health/covids-cognitive-costs-some-patients-brains-may-age-10-years-161876>

Research points to chronic cognitive consequences of novel coronavirus; 84,000 people did mental tests, findings not-peer reviewed

COVID's cognitive costs? Some patients' brains may age 10 years

Dr Vahram Haroutunian holds a human brain in a brain bank in the Bronx borough of New York City, New York. Reuters File

People recovering from COVID-19 may suffer significant brain function impacts, with the worst cases of the infection linked to mental decline equivalent to the brain ageing by 10 years, researchers warned on Tuesday.

A non-peer-reviewed study of more than 84,000 people, led by Adam Hampshire, a doctor at Imperial College London, found that in some severe cases, coronavirus infection is linked to substantial cognitive deficits for months.

"Our analyses ... align with the view that there are chronic cognitive consequences of having COVID-19," the researchers wrote in a report of their findings. "People who had recovered, including those no longer reporting symptoms, exhibited significant cognitive deficits."

Cognitive tests measure how well the brain performs tasks – such as remembering words or joining dots on a puzzle. Such tests are widely used to assess brain performance in diseases like Alzheimer's, and can also help doctors assess temporary brain impairments.

Hampshire's team analysed results from 84,285 people who completed a study called the Great British Intelligence Test.

The findings, which have yet to be reviewed by other experts, were published online on the MedRxiv website.

The cognitive deficits were "of substantial effect size", particularly among people who had been hospitalised with COVID-19, the researchers said, with the worst cases showing impacts "equivalent to the average 10-year decline in global performance between the ages of 20 to 70".

Scientists not directly involved with the study, however, said its results should be viewed with some caution.

"The cognitive function of the participants was not known pre-COVID, and the results also do not reflect long-term recovery – so any effects on cognition may be short term," said Joanna Wardlaw, a professor of applied neuroimaging at Edinburgh University.

Derek Hill, a professor of medical imaging science at University College London, also noted that the study's findings could not be entirely reliable, since they did not compare before and after scores, and involved a large number of people who self-reported having had COVID-19, who had no positive test.

"Overall (this is) an intriguing but inconclusive piece of research into the effect of COVID on the brain," said Hill.

"As researchers seek to better understand the long term impact of COVID, it will be important to further investigate the extent to which cognition is impacted in the weeks and months after the infection, and whether permanent damage to brain function results in some people." Reuters

## High-fat keto diets

### High-fat keto diets can prevent, reverse heart failure: Study (The Tribune: 20201028)

<https://www.tribuneindia.com/news/health/high-fat-keto-diets-can-prevent-reverse-heart-failure-study-161837>

High-fat keto diets can prevent, reverse heart failure: Study

Heart problems? A special diet might help as researchers have found that the popular and controversial ketogenic diet could completely prevent, or even reverse heart failure caused by a metabolic process.

For the findings, published in the journal Nature Metabolism, the research team looked at a metabolic process that seems to be turned down in failing human hearts.

"In an animal model, drastic heart failure in mice was bypassed by switching to high fat or "ketogenic" diets, which could completely prevent, or even reverse the heart failure," said study author Kyle S McCommis from the Saint Louis University in the US.

"Thus, these studies suggest that consumption of higher fat and lower carbohydrate diets may be a nutritional therapeutic intervention to treat heart failure," McCommis added.

According to the researchers, the heart's myocardium requires vast amounts of chemical energy stored in nutrients to fuel cardiac contraction.

To maintain this high metabolic capacity, the heart is flexible and can adapt to altered metabolic fuel supplies during diverse developmental, nutritional, or physiologic conditions.

Impaired flexibility, however, is associated with cardiac dysfunction in conditions including diabetes and heart failure.

The mitochondrial pyruvate carrier (MPC) complex, composed of MPC1 and MPC2, is required for pyruvate import into the mitochondria.

This study demonstrated that MPC expression is decreased in failing human and mouse hearts, and that genetic deletion of the MPC in mice leads to cardiac remodelling and dysfunction.

"Interestingly, this heart failure can be prevented or even reversed by providing a high-fat, low carbohydrate ketogenic diet," McCommis said.

"A 24-hour fast in mice, which is also ketogenic also provided significant improvement in heart remodelling," McCommis added.

The findings showed that diets with higher fat content, but enough carbohydrates to limit ketosis also significantly improved heart failure in mice lacking cardiac MPC expression.

"Our study highlights the potential of dietary interventions to enhance cardiac fat metabolism to prevent or reverse cardiac dysfunction and remodelling in the setting of MPC-deficiency," the authors wrote.



## **Oral cancer**

**Startup develops hand-held oral cancer screening tool (The Tribune: 20201028)**

<https://www.tribuneindia.com/news/health/startup-develops-hand-held-oral-cancer-screening-tool-161831>

Device to used for screening, detection and biopsy guidance of oral cancer

Startup develops hand-held oral cancer screening tool

OralScan, an indigenously developed hand-held imaging device for screening, detection and biopsy guidance of oral cancer, has been developed by a startup here.

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The startup, M/s Sascan Meditech Pvt Ltd, which was incubated at TiMED, the Technology Business Incubator of the city-based Sree Chitra Tirunal Institute for Medical Sciences & Technology, is launching the device, a press release said.

Oral Scan, a Make-in-India initiative with seed funding from the National Initiative for Developing and Harnessing Innovations (NIDHI) scheme of the Department of Science & Technology (DST), Government of India, was designed and developed entirely in India and supported by Biotechnology ignition grant of Biotechnology Industry Research Assistance Council (BIRAC), INVENT (DST) and Kerala Startup Mission.

The company recently received investment from Unicorn India Ventures.

State Health Minister K K Shailaja, will launch OralScan at a function here on Wednesday.

An online event kickstarting the product sales and distribution network will also be held in the presence of dignitaries, oncologists and channel partners identified across the country.

Dr Asha Kishore, Director, SCTIMST will perform the first sale to Ketan Parmar, Innovative India, Surat.

According to Dr Subhash Narayanan, CEO of Sascan, oral cancer is a growing concern in India with more than 80,000 fresh cases reported each year.

The disease has a high mortality rate due to the delay in detection.

Current practice relies on oral examinations using torchlight to detect early-stage cancers of the oral cavity.

Various studies have demonstrated that this screening technique is not very reliable and often oral potentially malignant lesions (OPMLs) go undetected in the early stages, the release said. Even experienced clinicians find it difficult to locate the optimal site for a biopsy based on conventional oral examination.

This leads to multiple biopsies, increased expenditure and false-negative reports which can delay diagnosis and outcome.

Proprietary software in the device assists the surgeon in taking a biopsy from the most appropriate site which is likely to confirm the diagnosis of malignancy.

This will avoid multiple biopsies and false-negative reports.

The device will be marketed for Rs 5.9 lakh.

This will be a one-time investment for hospitals and laboratories without any additional costs of consumables.

## **Covid-19: What you need to know today (Hindustan Times: 20201028)**

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

On June 21 (Dispatch 87), I wrote: “So, bored, tired, lonely perhaps, and physically, mentally, and emotionally weary, we let things slip. And the virus wins.”

There’s a term for this, pandemic fatigue, and as the second wave roils Europe, and the third the US, everyone is talking about it.

“Pandemic fatigue is real — and it’s spreading.” That’s in Tuesday’s Wall Street Journal. “Sick of Covid-19? Here’s why you might have pandemic fatigue.” That’s in the conversation.com from October 23. “As the Coronavirus surges, a new culprit emerges: Pandemic fatigue.” That’s from October 17’s New York Times.

And on Monday, World Health Organization (WHO) director general Tedros Adhanom Ghebreyesus spoke of pandemic fatigue. “Working from home, children being schooled remotely, not being able to celebrate milestones with friends and family or not being there to mourn loved ones — it’s tough and the fatigue is real,” he said.

The problem has become serious enough for WHO to, earlier in October, release a document titled “Pandemic fatigue: Reinvigorating the public to prevent Covid-19”. In the document, WHO actually defined pandemic fatigue.

“Pandemic fatigue is... demotivation to follow recommended protective behaviours, emerging gradually over time and affected by a number of emotions, experiences and perceptions,” the document said.

It “is expressed through an increasing number of people not sufficiently following recommendations and restrictions, decreasing their effort to keep themselves informed about the pandemic, and having lower risk perceptions related to Covid-19,” the document added.

It would be alright if Covid fatigue involved merely how people feel; unfortunately, this also extends to how people behave, and it is behaviour that puts them and others at risk. Still worse, because their behaviour is directly correlated with a rise in infections, governments may be forced to react by imposing restrictions on movement and activities, even a partial lockdown (most countries are very averse to going down the total or hard lockdown path again). And when this happens, a population that is already in the grip of pandemic fatigue is unlikely to listen. That’s happening in Europe and the US, and it is happening in India too.

So, what should governments and administrators do? As WHO’s DG put it on Monday: “We cannot give up... Leaders must balance the disruption to lives and livelihoods with the need to protect health workers and health systems as intensive care fills up.”

Enforcement may not work in all cases and may end up being counterproductive.

The problem will be familiar to behavioral economists, though. In 2012, Niranjan Rajadhyaksha, then Mint's executive editor, wrote an article titled "How behavioural science can reduce deaths on railway tracks".

In the article, Rajadhyaksha detailed how Final Mile Consulting, a firm headed by Biju Dominic that used behavioural economics, cognitive neurology and anthropology to shape people's behaviour, did this in one part of Mumbai – "The Final Mile team hung around the most lethal crossings for several weeks, melting into the crowd," says Dominic, "like method actors living the character."

"They quickly noticed that the people crossing the tracks were overconfident, one of the biases that behavioural scientists say are hard-wired into our brains, the same bias that ensures that equity analysts overestimate corporate earnings or cigarette smokers refuse to believe they can be struck down by cancer" Rajadhyaksha wrote.

It's the same overconfidence that makes people believe that they are unlikely to contract Covid-19, or assume that they are safe because most people who do get infected are either asymptomatic or experience only mild symptoms.

I won't tell you how Final Mile solved the rail crossing problem. You can read about it yourself by scanning the QR code with this column.

The WHO document actually has some interesting pointers for administrators on how to "allow people to live their lives, but reduce the risk" — for it is the disruption to their lives that is perhaps the biggest contributor to pandemic fatigue. This involves: differentiating "between lower-risk and higher-risk activities"; guidelines on carrying "on with life while reducing the risk of transmission"; proactively planning for "end-of-the-year celebrations"; avoid cancelling all cultural events and find "creative solutions" to host them; and "avoid judgment and blame." It's always toughest to protect people from themselves.

## **Postpartum depression**

### **Postpartum depression may persist 3 years after giving birth (Hindustan Times: 20201028)**

<https://www.newkerala.com/news/2020/188865.htm>

New York, Oct 27 : Researchers have found that approximately one in four women experienced high levels of depressive symptoms at some point in the three years after giving birth.

The rest of the women experienced low levels of depression throughout the three-year span, the study, published in the journal Pediatrics, reported.

"The American Academy of Pediatrics recommends that pediatricians screen mothers for postpartum depression at well-child visits at one, two, four and six months after childbirth," said the study authors from the National Institute of Child Health and Human Development (NICHD) in the US.

For the study, the researchers analysed data from the Upstate KIDS study, which included babies born between 2008 and 2010 from 57 counties in New York state.

The study followed 5,000 women for three years after their children were born.

Researchers assessed women's symptoms through a brief, five-item depression screening questionnaire, but the study did not clinically diagnose depression in the women.

Women with underlying conditions, such as mood disorders and/or gestational diabetes, were more likely to have higher levels of depressive symptoms that persisted throughout the study period.

Researchers identified four trajectories of postpartum depressive symptoms and the factors that may increase a woman's risk for elevated symptoms.

The findings suggest that extending screening for postpartum depressive symptoms for at least two years after childbirth may be beneficial, the authors write.

"Our study indicates that six months may not be long enough to gauge depressive symptoms," said study author Diane Putnick from NICHD.

"These long-term data are key to improving our understanding of mom's mental health, which we know is critical to her child's well-being and development," Putnick added.

Future studies should include a more diverse, broad population to provide more inclusive data on postpartum depression, the study noted.

## **COVID-19 cases:**

### **Increasing pollution levels may lead to increased COVID-19 cases: Expertsb (New Kerala: 20201028)**

<https://www.newkerala.com/news/2020/188850.htm>

The increasing pollution levels in Delhi and adjoining areas may contribute to the increase in COVID-19 cases and deaths due to the virus, experts said on Tuesday.

Speaking at the Union Health Ministry's press conference, Dr. VK Paul, Member (Health), NITI Aayog, and Dr Balram Bhargava, Director General (DG ) of the Indian Council of

Medical Research (ICMR) agreed that increasing pollution around the national capital and adjoining areas may lead to increase in Coronavirus cases.

"We have heard that the effect of the disease may increase with the increased pollution, but we are yet to understand it fully," said Dr Paul.

Answering a question, Dr Bhargava also agreed with Dr Paul and said pollution might be a contributing factor to mortality in COVID-19 infection.

"There have been studies from Europe and the US, where they have looked at polluted areas and have compared mortality during lockdown and correlation with pollution, and found clearly that pollution is contributing to mortality in COVID, that's well established by studies," ICMR chief said.

Air quality deteriorates in the national capital with the rise of pollutants in the atmosphere and overall Delhi's Air Quality Index (AQI) is in the "very poor" category, said the Delhi Pollution Control Committee data on Tuesday.

Dr Arvind Kumar, Chairman of Centre for Chest Surgery Sir Ganga Ram Hospital, in an earlier interaction with ANI said that people having pre-existing lung ailments are more vulnerable to catch COVID-19 infection, and therefore, they should be extra careful.

Dr Vikash Maurya, Head of Respiratory medicine department at Fortis Hospital also said that with the COVID-19 crisis, pollution is going to be a big challenge this year.

"This is just the start of air pollution. Air quality has already become poor and will worsen in the coming days. Its side-effect would be seen after the Diwali celebration and extreme winters. The bottom line is- we have to be cautious now as this time we have covid19 crisis too and this is going to be a very big challenge for all of us," said Dr Maurya.

According to an ICMR study, about 4 lakh deaths in India in 2017 were due to air pollution, which included 6.7 lakh deaths due to outdoor particulate matter air pollution and 4.8 lakh deaths due to household air pollution. The highest PM2.5 exposure level was in Delhi, followed by the other north Indian states of Uttar Pradesh, Bihar, and Haryana.

## **Omega-3 rich foods**

### **Omega-3 rich foods improve post-heart attack prognosis: Study (New Kerala: 20201028)**

<https://www.newkerala.com/news/2020/188749.htm>

Regularly consuming foods rich in omega-3 fatty acids, from both animal and vegetable origins, strengthens the heart's membranes and helps improve the prognosis in the event of a myocardial infarction, say researchers.

For the study, published in the Journal of the American College of Cardiology, the research team at Hospital del Mar Medical Research Institute (IMIM) in Spain, used data from 950 patients.

"The article is important because it highlights the complementary (and non-competitive) effects of the two types of omega-3, said study author Aleix Sala from IMIM.

According to the researchers, the omega-3 levels in the blood of these individuals were determined when they were admitted to hospital to be treated for the heart attack.

This measurement indicates, very accurately, how much of these fats the patients had eaten in the weeks prior to the sampling, in other words, before the heart attack.

The patients were monitored for three years after being discharged, and the researchers observed that having high levels of omega-3 in the blood at the time of the infarction, which had been consumed in the weeks leading up to the heart attack, was associated with a lower risk of complications.

"When we eat oily fish on a regular basis, EPA is incorporated into the phospholipids in the membranes of the cardiomyocytes, protecting them from a wide variety of heart stressors," the authors wrote.

Eicosapentaenoic acid (EPA) is a type of omega-3 fatty acid found in oily fish.

This enrichment of the myocardial membranes limits the damage caused in the event of a heart attack.

The major novelty of this study is that it also focused on another omega-3 fatty acid, of vegetable origin, known as alpha-linolenic acid (ALA).

This fat, which is found in walnuts as well as soybeans and their derivatives, is far less well studied than marine omega-3s.

The researchers observed that EPA and ALA do not compete, but are complementary to one another.

While high levels of EPA are associated with a lower risk of hospital readmission from cardiovascular causes, higher levels of ALA are associated with a reduced risk of death.

"Incorporating marine and vegetable omega-3s into the diet of patients at risk of cardiovascular disease is an integrative strategy for improving both their quality of life and prognosis if they suffer a heart attack," the authors wrote.

## **Vaccine-induced immunity**

**Vaccine-induced immunity key factors for Covid-19 containment'(New Kerala: 20201028)**

<https://www.newkerala.com/news/2020/188589.htm>

New research suggests that the impact of natural and vaccine-induced immunity will be key factors in shaping the future trajectory of the global coronavirus pandemic, known as Covid-19.

In particular, a vaccine capable of eliciting a strong immune response could substantially reduce the future burden of infection, according to a study recently published in the journal Science.

"The current study builds on previous research which reported that local variations in climate are not likely to dominate the first wave of the Covid-19 pandemic," said study authors from McGill University in Canada.

In the most recent paper, the researchers used a simple model to project the future incidence of Covid-19 cases -- and the degree of immunity in the human population -- under a range of assumptions related to how likely individuals are to transmit the virus in different contexts.

For example, the model allows for different durations of immunity after infection, as well as different extents of protection from reinfection.

The researchers posted online an interactive version of model's predictions under these different sets of assumptions.

As expected, the model found that the initial pandemic peak is largely independent of immunity because most people are susceptible.

However, a substantial range of epidemic patterns are possible as SARS-CoV-2 infection -- and thus immunity -- increases in the population.

"If immune responses are only weak, or transiently protective against reinfection, for example, then larger and more frequent outbreaks can be expected in the medium term," said co-author Andrea Graham from Princeton University.

The nature of the immune responses also can affect clinical outcomes and the burden of severe cases requiring hospitalization, the researchers found.

Importantly, the study found that in all scenarios a vaccine capable of eliciting a strong immune response could substantially reduce future caseloads.

Even a vaccine that only offers partial protection against secondary transmission could generate major benefits if widely deployed, the researchers reported.

The study authors also explored the effect of "vaccine hesitancy" on future infection dynamics.

Their model found that people who decline to partake in pharmaceutical and non-pharmaceutical measures to contain the coronavirus could nonetheless slow containment of the virus even if a vaccine is available.

"Our model indicates that if vaccine refusal is high and correlated with increased transmission and riskier behaviour such as refusing to wear a mask, then the necessary vaccination rate needed to reach herd immunity could be much higher," they wrote.

## **Air pollution**

### **Air pollution ups Covid-19 deaths by 15% worldwide: Study (New Kerala: 20201028)**

<https://www.newkerala.com/news/2020/188514.htm>

In a major global study, researchers have revealed that long-term exposure to air pollution may be linked to 15 per cent of Covid-19 deaths worldwide.

According to the study, published in the journal Cardiovascular Research, in Europe the proportion was about 19 per cent, in North America it was 17 per cent, and in East Asia about 27 per cent.

"Since the numbers of deaths from Covid-19 are increasing all the time, it's not possible to give exact or final numbers of Covid-19 deaths per country that can be attributed to air pollution," said study author Jos Lelieveld from Max Planck Institute in Germany.

"However, as an example, in the UK there have been over 44,000 coronavirus deaths and we estimate that the fraction attributable to air pollution is 14 per cent, meaning that more than 6,100 deaths could be attributed to air pollution," Lelieveld added.

The researchers used epidemiological data from the previous US and Chinese studies of air pollution and Covid-19 and the SARS outbreak in 2003, supported by additional data from Italy.

They combined this with satellite data showing global exposure to polluting fine particles known as 'particulate matter' that is less than or equal to 2.5 microns in diameter (known as PM2.5) to create a model to calculate the fraction of coronavirus deaths that could be attributable to long-term exposure to PM2.5.

The results are based on epidemiological data collected up the third week in June 2020 and the researchers said that a comprehensive evaluation will need to follow after the pandemic has subsided.

Estimates for individual countries show, for example, that air pollution contributed to 29 per cent of coronavirus deaths in the Czech Republic, 27 per cent in China, 26 per cent in Germany,

22 per cent in Switzerland, 21 per cent in Belgium, 19 per cent in The Netherlands, 15 per cent in Italy and 14 per cent in the UK.

Referring to previous work that suggests that the fine particulates in air pollution may prolong the atmospheric lifetime of infectious viruses and help them to infect more people. Lelieveld said "It's likely that particulate matter plays a role in 'super-spreading events' by favouring transmission."

According to the researchers, the particulate matter seems to increase the activity of a receptor on cell surfaces, called ACE-2, that is known to be involved in the way Covid-19 infects cells.

"So, we have a 'double hit' air pollution damages the lungs and increases the activity of ACE-2, which in turn leads to enhanced uptake of the virus by the lungs and probably by the blood vessels and the heart," the authors wrote.

## **Autoimmune disease**

### **Study focuses on new insights into a potential target for autoimmune disease New Kerala: 20201028)**

<https://www.newkerala.com/news/2020/188403.htm>

Immune response is a balancing act: Too much can lead to inflammatory or autoimmune disease; too little could lead to a serious infection. Regulatory T cells, or Tregs, are important players in striking this balance, acting as rakes on the immune response so it doesn't go overboard.

Consequently, controlling the numbers and activity of Tregs is crucial in maintaining health. New findings from a multi-institutional team, including the School of Dental Medicine's George Hajishengallis, suggest that targeting the molecule DEL-1, which promotes the generation and immunosuppressive activity of Tregs, could be an effective way to treat conditions where taming an inflammatory or autoimmune response is desired.

The team reported their findings in the Journal of Clinical Investigation.

"In earlier work, we saw a correlation During resolution of inflammation, Tregs numbers went up and DEL-1 levels went up," Hajishengallis says. "We wanted to understand how the two were connected."

Hajishengallis and colleagues, including Triantafyllos Chavakis of Technical University Dresden, had earlier used a mouse model of periodontitis, severe gum disease, to show that DEL-1 promotes the resolution of inflammation--in other words, helps the body return to a normal state. In the new study, they relied on this model again to probe the relationship between

DEL-1 and Tregs which, like DEL-1, also become abundant during the inflammation-resolution process.

Mice that were bred to lack DEL-1 had significantly lower levels of Tregs than mice with DEL-1. Meanwhile their levels of Th17 cells, a T cell type associated with inflammation, went up. An injection of DEL-1 could restore levels of Tregs in the mice otherwise deficient in the protein.

The correlation offered a clue but no evidence of a direct relationship between DEL-1 and Tregs. "There's a reciprocity between Tregs and Th17 cells," says Hajishengallis. "So with this result, we didn't know if DEL-1 is acting on Tregs or Th17 cells."

To firm up this connection, they performed experiments using mouse cells in culture to see whether DEL-1 could influence the development of T cells into either mature Th17 or Treg cells. While DEL-1 did not appear to directly influence the generation of Th17 cells, its effect on Tregs "was striking," Hajishengallis says. Their findings held when looking in human cells, with the generation of Tregs enhanced in the presence of DEL-1.

What's more, the researchers found that T cells' immunosuppressive function--a characteristic supported by Tregs--was strengthened when DEL-1 was present.

With more confidence that DEL-1 was supporting the activity of Tregs, the researchers pursued a series of additional experiments that unveiled more details about the signalling pathway in which DEL-1 was acting. They found that DEL-1 interacted with a molecule on the T cell surface which induced a transcription factor called RUNX1 that promotes the expression and stability of FOXP3, a "master regulator" of Tregs. "Without FOXP3 you cannot have Tregs," Hajishengallis says.

Their work showed that DEL-1 was also acting epigenetically to stabilize FOXP3 by removing small molecular "tags" known as methyl groups located in the region of this gene.

FOXP3 deficiencies are indeed linked to serious conditions in humans. IPEX syndrome, for example, an X-linked condition caused by a FOXP3 mutation, causes people to have very low numbers of Tregs and, frequently to develop multiple autoimmune diseases.

Though the researchers had begun with a gum disease model, they believed that the link between DEL-1 and Tregs was more universal and thus investigated the link in a mouse model of acute lung inflammation, finding the same pattern. A dearth of DEL-1 was associated with severely reduced numbers of Tregs and a poorer resolution of inflammation.

In future work, Hajishengallis and his collaborators hope to go deeper into the mechanism, testing whether the source of DEL-1 matters in terms of its regulation of Tregs. Other groups, they note, may want to begin to take the findings in a translational direction to apply them in models of autoimmune diseases, which could be tamed by a shift in the balance toward immunosuppression.

"I believe DEL-1 is not just for periodontitis and inflammation but is also a potential target in autoimmune diseases," Hajishengallis says.

## **Health Care Services (Hindustan: 20201028)**

[https://epaper.livehindustan.com/imageview\\_410565\\_52200832\\_4\\_1\\_28-10-2020\\_2\\_i\\_1\\_sf.html](https://epaper.livehindustan.com/imageview_410565_52200832_4_1_28-10-2020_2_i_1_sf.html)

# ओपीडी बंद होने से मरीज रहे परेशान

हिन्दुस्तान

पड़ताल

मरीजों की दिक्कत मंगलवार को बढ़ गई, जब उन्हें ओपीडी परामर्श के लिए भटकना पड़ा। दिल्ली के 10 नॉन कोविड अस्पताल के डॉक्टरों के सांकेतिक विरोध की वजह से दो घंटे तक ओपीडी सेवा बंद रही। नॉन कोविड मरीजों की दिक्कतें बढ़ गईं। निगम के पांच अस्पतालों में स्वास्थ्य कर्मियों की हड़ताल की वजह से पहले से ही चिकित्सीय सेवाएं बंद थीं।



कस्तूरबा गांधी अस्पताल में मंगलवार को मरीजों को अस्पताल परिसर में प्रवेश नहीं दिया जा रहा था। अस्पताल के गेट पर इंतजार करते मरीज। • मोहम्मद जाकिर

## सुरक्षा गार्ड गेट से ही लौटा रहे थे

10:00 बजे सुबह  
कस्तूरबा गांधी अस्पताल

कस्तूरबा गांधी अस्पताल में हड़ताल के कारण सन्नाटा पसरा था। किसी भी नए मरीज को इलाज के लिए एंट्री नहीं दी गई, उन्हें वापस भेज दिया गया। यह कहा गया कि डॉक्टर हड़ताल पर हैं। इलाज के लिए पहुंची मीना श्रीवास्तव ने कहा

कि उन्हें यह मालूम नहीं था कि आज डॉक्टर हड़ताल पर रहेगे। वह तीन महीने की गर्भवती हैं और चेकअप के लिए आई थीं।

हालांकि मीना ने पूछा कि जो मरीज यहां पहले से भर्ती हैं, उन्हें तो देखा जा रहा है। उन्हें अस्पताल की तरफ से जवाब दिया गया कि पहले से भर्ती मरीज को ही देखा जाएगा, नए मरीजों के लिए हड़ताल है।

## न इलाज मिला न कोई जानकारी

11:00 बजे सुबह  
लेडी हॉर्डिंग अस्पताल

लेडी हॉर्डिंग अस्पताल से जुड़े दोनों अस्पतालों कलावती सरन और सुचेता कृपलानी अस्पताल में रेजिडेंट डॉक्टरों ने सुबह 10 से 12 बजे तक काम का बहिष्कार किया। मेडिसिन विभाग की ओपीडी में पहले से ही लंबी लाइन लगी

हुई थी, लेकिन 10 बजे डॉक्टरों ने काम बंद कर दिया तो मरीज परेशान हो गए। रोहित को तेज बुखार था लेकिन ओपीडी में उनका नंबर नहीं आ पाया तो उन्हें फ्लू क्लीनिक भेज दिया गया। 31 वर्षीय सविता देवी वे गर्भवती हैं और फॉलोअप के लिए आती हैं, लेकिन दो घंटे तक ओपीडी बंद होने की वजह से वे इंतजार करके वापस लौट गईं।

“

यहां चेकअप कराने आई थी, लेकिन हड़ताल होने की बात कहकर वापस कर दिया गया। मैंने काफी गुजारिश की लेकिन उन्होंने मेरी एक नहीं सुनी।

-मीना श्रीवास्तव, कस्तूरबा अस्पताल

मैं अपने बच्चे का इलाज कराने आई थी, अब निजी डॉक्टर के पास जा रही हूँ। डॉक्टर को फीस देने के लिए किसी जानकार से उधार लेना होगा।

-मीनाक्षी यादव, वाल्मीकि अस्पताल

15 दिन दवा के बाद दोबारा जांच के लिए बुलाया गया था। फैंक्टरी से छुट्टी लेकर आई थी, लेकिन यहां पता चला कि डॉक्टर आज नहीं देखेंगे।

-तारामती, संजय गांधी अस्पताल

मुझे पिछले कुछ दिनों से लगातार खांसी आ रही है। मेरे एक जानकार ने यहां आकर जांच कराने की सलाह दी। लेकिन यहां आने पर यह पता चला कि डॉक्टरों की हड़ताल है।

-आकाश, राजन बाबू टीबी अस्पताल

## Coronavirus ((Hindustan: 20201028))

[https://epaper.livehindustan.com/imageview\\_410565\\_52200522\\_4\\_1\\_28-10-2020\\_2\\_i\\_1\\_sf.html](https://epaper.livehindustan.com/imageview_410565_52200522_4_1_28-10-2020_2_i_1_sf.html)

# कोरोना के एक दिन में रिकॉर्ड 4853 मामले

नई दिल्ली | वरिष्ठ संवाददाता

राजधानी दिल्ली में मंगलवार को कोरोना के एक दिन रिकॉर्ड 4853 मरीजों की पुष्टि हुई है। यह अभी तक एक दिन में सर्वाधिक मामले मिलने का रिकॉर्ड है।

स्वास्थ्य विभाग की ओर से जारी हेल्थ बुलेटिन के मुताबिक दिल्ली में कोरोना संक्रमण के कुल 3,64,341 मामले हो गए हैं। इनमें से 3,30,112 मरीज ठीक हो गए हैं। 24 घंटे में 2722 मरीजों को छुट्टी दी गई। वहीं, 44 की मौत हो गई। कोरोना से अब तक 6356 लोग की मौत हो चुकी है।

दिल्ली में मंगलवार को संक्रमण दर 8.18 % रही है। दिल्ली में कोरोना के सक्रिय मामले बढ़कर 27873 हो गए हैं। कोविड अस्पतालों में 5453 मरीज भर्ती हैं। 16415 मरीज होम आइसोलेशन में हैं। दिल्ली में एक दिन में 57210 जांच की गईं। इनमें से 8.48 फीसदी सैम्पल पॉजिटिव मिले। दिल्ली

## संक्रमण से बचने के लिए सावधानी जरूरी : डॉ. हर्षवर्धन

नई दिल्ली | वरिष्ठ संवाददाता

केंद्रीय स्वास्थ्य मंत्री डॉ. हर्षवर्धन ने कहा है कि कोरोना अभी गया नहीं है। संक्रमण से बचने के लिए सावधानी बरतना बेहद जरूरी है। वह मंगलवार को मॉडल टाउन विधानसभा भाजपा समिति अध्यक्षों संग बैठक में कर रहे थे।

डॉ. हर्षवर्धन ने कहा कि कुछ लोग कोरोना को समाप्त के करीब मानते हुए एहतियात बरतने में लापरवाही कर रहे हैं। उन्हें यह नहीं मालूम कि ये लापरवाहियां उन पर भारी पड़ सकती हैं। डॉ. हर्षवर्धन ने कहा कि विकसित देशों के मुकाबले भारत बेहतर स्थिति में है। हमारी रिकवरी दर 90 से 91 प्रतिशत

में प्रति दस लाख की आबादी पर 234527 जांच की जा चुकी है।

### कोरोना के मामलों में तीसरी बार उछाल



के बीच है, जो कि विश्व में अधिकतम है। मृत्यु दर 1.50 प्रतिशत है, जो न्यूनतम है। उन्होंने कहा कि कोरोना को शीघ्र समाप्त करने के लिए यह जरूरी है कि सभी लोग तरीके से मास्क पहनें,

बात करते समय भी मास्क नहीं उतारें, बार-बार हाथ धोएं, आपस में दो गज की दूरी रखें और खांसते तथा छींकते हुए बाजू से बचाव करें। इन सावधानी को अपनाकर हम संक्रमण रोक सकते हैं।

राजधानी में अब तक कुल 44,560,29 टेस्ट किए जा चुके हैं।

बढ़ते मामलों के बीच हॉटस्पॉट की संख्या भी बढ़कर 3032 हो गई है।