Fresh Covid cases

For 9th consecutive day, below-50,000 fresh Covid cases reported
435 more fatalities push the death toll to 1, 30,070 (The Tribune: 20201116)


India’s COVID-19 caseload mounted to 88,45,127 with 30,548 infections being reported in a day while the number of people who have recuperated from the disease surged to 82,49,579, according to data updated by the Union health ministry on Monday.

The coronavirus death toll climbed to 1,30,070 with 435 new fatalities, the data updated at 8 am showed.

The number of active cases remained below five lakh for the sixth consecutive day.

There are 4,65,478 active cases of coronavirus infection in the country as on date which comprise 5.26 per cent of the total caseload, the data stated.

The total number of recoveries has surged to 82,49,579, pushing the national recovery rate to 93.27 per cent. The COVID-19 case fatality rate stands at 1.47 per cent.

India’s COVID-19 tally had crossed the 20-lakh mark on August 7, 30 lakh on August 23 and 40 lakh on September 5. It went past 50 lakh on September 16, 60 lakh on September 28, 70 lakh on October 11 and crossed 80 lakh on October 29.

According to the Indian Council of Medical Research (ICMR), a total of 12,56,98,525 samples have been tested up to November 15 with 8,61,706 being tested on Sunday.

The 435 new fatalities include 95 from Delhi, 60 from Maharashtra, 51 from West Bengal, 30 from Punjab, and 21 each from Karnataka and Kerala.
The total 1,30,070 deaths reported so far in the country include 45,974 from Maharashtra, followed by 11,529 from Karnataka, 11,478 from Tamil Nadu, 7,661 from West Bengal, 7,614 from Delhi, 7,372 from Uttar Pradesh, 6,868 from Andhra Pradesh, 4,458 from Punjab and 3,803 from Gujarat.

The Health Ministry stressed that more than 70 per cent of the deaths occurred due to comorbidities.

“Our figures are being reconciled with the Indian Council of Medical Research,” the Ministry said on its website, adding that state-wise distribution of figures was subject to further verification and reconciliation. PTI

COVID-19 vaccine
J&J starts two-dose trial of its COVID-19 vaccine candidate
Rival drugmakers Pfizer and BioNtech said last week that their potential COVID-19 shot showed more than 90% efficacy (The Tribune: 20201116)


J&J starts two-dose trial of its COVID-19 vaccine candidate
The U.S. drugmaker plans to enrol up to 30,000 participants for the study. Reuters photo.

Johnson & Johnson launched a new large-scale late-stage trial on Monday to test a two-dose regimen of its experimental COVID-19 vaccine and evaluate potential incremental benefits for the duration of protection with a second dose.

The U.S. drugmaker plans to enrol up to 30,000 participants for the study and run it in parallel with a one-dose trial with as many as 60,000 volunteers that began in September.

The UK arm of the study is aiming to recruit 6,000 participants and the rest will join from other countries with a high incidence of COVID-19 cases such as the United States, Belgium, Colombia, France, Germany, the Philippines, South Africa and Spain, it said.

They will be given the first dose of either a placebo or the experimental shot, currently called Ad26COV2, followed by a second dose or placebo 57 days later, said Saul Faust, a professor of paediatric immunology and infectious diseases who is co-leading the trial at University Hospital Southampton.

The trial follows positive interim results from the company’s ongoing early to mid-stage clinical study that showed a single dose of its vaccine candidate induced a robust immune response and was generally well-tolerated.
"The study will assess efficacy of the investigational vaccine after both the first and second dose to evaluate protection against the virus and potential incremental benefits for duration of protection with a second dose," J&J said in a statement.

Rival drugmakers Pfizer and BioNTech said last week that their potential COVID-19 shot showed more than 90% efficacy in interim data from a late-stage trial, boosting hopes that vaccines against the pandemic disease may be ready for use soon.

While the Pfizer-BioNTech vaccine uses a new technology known as messenger RNA, J&J’s uses a cold virus to deliver genetic material from the coronavirus into the body to prompt an immune response.

The platform, called AdVac, is also used in an Ebola vaccine that was approved earlier this year.

"It’s really important that we pursue trials of many different vaccines from many different manufacturers and be able to ensure the supply both to the UK and global population," Faust told reporters at a briefing.

Recruitment into the study will complete in March 2021 and the trial will last for 12 months.— Reuters

Sputnik V vaccine

First batch of Sputnik V vaccine to arrive in Kanpur medical college

Human clinical trials of the vaccine to start from next week (The Tribune: 20201116)


First batch of Sputnik V vaccine to arrive in Kanpur medical college

Photo for representation only. — Reuters

The first batch of Russia’s Sputnik V vaccine for COVID-19 is likely to reach Kanpur's Ganesh Shankar Vidyarthi Medical College by next week wherein the vaccine's Phase 2 and Phase 3 human clinical trials will be conducted.

The decision to conduct the human clinical trials of the vaccine was taken after Dr Reddy's Laboratories got approval from the Drugs Controller General of India (DCGI) in this regard, an official said.

Speaking to PTI, college principal R B Kamal said the human clinical trials of the vaccine will start from next week.
"As many as 180 volunteers have registered for the trials. Head of the research Saurabh Agarwal will determine the dosage of the vaccine to be administered. One dose will be administered and the condition of volunteers will be monitored to determine whether they need further doses or not," he said.

Kamal said the volunteers' vitals and condition will be checked periodically and the data will be analysed to determine whether the vaccine is a success or not.

He said the effect of the vaccine on the volunteers will be studied for seven months after the same is administered once, twice or thrice within an interval of 21 days.

After observing the effects of the vaccine for a month, authorities will be apprised of the results of the trial, and they will then make a decision accordingly.

The Ethics Committee of the college has also given permission for the trails, he said.

The vaccine has to be kept at a temperature of -20 to -70 degrees Celsius.

In September, Dr Reddy's and the Russian Direct Investment Fund (RDIF), Russia's sovereign wealth fund, entered into a partnership to conduct clinical trials of Sputnik V vaccine and its distribution in India.

As part of the partnership, RDIF shall supply 100 million doses of the vaccine to Dr Reddy's upon regulatory approval in India.

On August 11, the Sputnik V vaccine was registered by the Ministry of Health of Russia and became the world's first registered vaccine against COVID-19 based on the human adenoviral vector platform.

**Steroid treatment**

**Steroid treatment should be reserved for sickest COVID-19 patients, say scientists**

While dexamethasone and other steroids are prescribed to treat cytokine storms, scientists say these drugs can backfire in patients whose immune response is already suppressed(The Tribune: 20201116)


Steroid treatment should be reserved for sickest COVID-19 patients, say scientists

Photo for representation. iStock
Most adults with moderate-to-severe COVID-19 have a suppressed immune response against the novel coronavirus rather than life-threatening hyper-inflammation, according to a study which suggests steroids such as dexamethasone should be reserved for the sickest patients.

Scientists, including those from St Jude Children’s Research Hospital in the US, assessed the levels of the immune system protein cytokines and other health markers in 168 adults with COVID-19, 26 adults with flu and 16 healthy volunteers.

They said more than 90 per cent of the COVID-19 patients were hospitalised and about half in the intensive care unit (ICU) while more than half of flu patients were admitted for treatment and 35 per cent were in the ICU.

According to the research, published in the journal Science Advances, fewer than 5 per cent of the COVID-19 patients, including some of the sickest individuals, had the life-threatening, hyperinflammatory immune response known as the cytokine storm syndrome.

The researchers explained that cytokine storms develop when excess or abnormally regulated levels of cytokine proteins in the body lead to hyperinflammation and tissue damage.

While dexamethasone and other steroids are prescribed to treat cytokine storms, they said these drugs could backfire in patients whose immune response was already suppressed.

“We did identify a subset of COVID-19 patients with the broadly upregulated array of cytokines. But, overall, the average person with COVID-19 had less inflammation than the average person with flu,” said study co-author Paul Thomas from St. Jude Children’s Research Hospital.

Based on the findings, the scientists said treatment suppressing inflammation might only be effective in a minority of patients with the hyperinflammatory profile.

They believe the need of the hour is a fast, reliable, and inexpensive test to measure cytokines and identify patients who are most likely to benefit from dexamethasone treatment.

“Directing immunosuppressive therapies to the small subset of COVID-19 patients who have an overactive immune response is the only way to know if these approaches are ultimately helpful,” said Philip Mudd, another co-author of the study from the Washington University School of Medicine in the US. PTI

**Coronavirus identified'**

**New compounds to potentially treat novel coronavirus identified'**

*They said the compounds can disrupt the SKI protein complex in the human body (The Tribune: 20201116)*


'New compounds to potentially treat novel coronavirus identified'
Researchers have discovered new drug compounds that target a protein which enables the novel coronavirus and other viruses with the pandemic potential to replicate in human cells.

Researchers have discovered new drug compounds that target a protein which enables the novel coronavirus and other viruses with the pandemic potential to replicate in human cells, an advance that may lead to new therapeutics for COVID-19.

According to the researchers, including those from the University of Maryland in the US, these compounds disrupt the functioning of a protein complex inside human cells that are critical for the replication and survival of coronaviruses, including the one that causes COVID-19.

The scientists believe the findings, published in the journal PNAS, could lead to the development of new broad-spectrum antiviral drugs that target viruses such as influenza, Ebola and coronaviruses like SARS-CoV-2.

They said the compounds can disrupt the SKI protein complex in the human body which regulates various aspects of the functioning of a cell.

In the current study, the researchers discovered that this complex also plays a crucial role in helping a virus replicate its genetic material, RNA, within the cells it infects.

"We determined that disrupting the SKI complex keeps the virus from copying itself, which essentially destroys it," said study co-author Matthew Frieman from the University of Maryland.

"We also identified compounds that targeted the SKI complex, not only inhibiting coronaviruses but also influenza viruses and filoviruses, such as the one that causes Ebola," Frieman said.

Using computer modelling, the researchers identified a binding site on the SKI complex and identified chemical compounds that could attach to this site.

From further experimental analysis, they showed that these compounds have antiviral activity against coronaviruses, influenza viruses, and filoviruses such as Ebola.

"These findings present an important first step in identifying potential new antivirals that could be used to treat a broad number of deadly infectious diseases," said study lead author Stuart Weston, also from the University of Maryland.

Such drugs have the potential to treat infectious disease associated with future pandemics, the scientists added. PTI

**Food and Nutrition**

An egg a day can trigger diabetes too, warn researchers

Diet is a known and modifiable factor that contributes to the onset of Type 2 diabetes (The Tribune: 20201116)
An egg a day can trigger diabetes too, warn researchers
Photo for representation only.

Scrambled, poached or boiled, eggs are a popular breakfast food the world over but new research warns that excess egg consumption can increase your risk of diabetes.

The study found that people who regularly consumed one or more eggs per day (equivalent to 50 grams) increased their risk of diabetes by 60 per cent and the effect was more pronounced in women than in men.

Conducted in partnership with the China Medical University, and Qatar University, the longitudinal study (1991 to 2009) led by University of South Australia is the first to assess egg consumption in a large sample of Chinese adults.

Epidemiologist and public health expert Ming Li said the rise of diabetes is a growing concern.

"Diet is a known and modifiable factor that contributes to the onset of Type 2 diabetes, so understanding the range of dietary factors that might impact the growing prevalence of the disease is important," Ming said.

Over the past few decades, China has undergone a substantial nutritional transition that's seen many people move away from a traditional diet comprising grains and vegetables, to a more processed diet that includes greater amounts of meat, snacks and energy-dense food.

"At the same time, egg consumption has also been steadily increasing; from 1991 to 2009, the number of people eating eggs in China nearly doubled," he said in a paper published in the British Journal of Nutrition.

While the association between eating eggs and diabetes is often debated, this study aims to assess people's long-term egg consumption of eggs and their risk of developing diabetes, as determined by fasting blood glucose.

"What we discovered was that higher long-term egg consumption (greater than 38 grams per day) increased the risk of diabetes among Chinese adults by approximately 25 per cent.

"Furthermore, adults who regularly ate a lot of eggs (over 50 grams, or equivalent to one egg, per day) had an increased risk of diabetes by 60 per cent," Ming claimed.

While these results suggest that higher egg consumption is positively associated with the risk of diabetes in Chinese adults, more research is needed to explore causal relationships.

"To beat diabetes, a multi-faceted approach is needed that not only encompasses research, but also a clear set of guidelines to help inform and guide the public. This study is one step towards that long-term goal," the authors wrote.
The study population comprised 8,545 adults (average age 50 years) participating in the China Health and Nutrition Survey.

- Covid wave

Delhi in battle mode to rein in Covid wave
Doubling the number of tests, more ICU beds among steps announced as home minister Shah meets CM Kejriwal, LG Baijal (Hindustan Times: 20201116)

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

Union home minister Amit Shah chairs a meeting on the Covid-19 situation in Delhi. CM Arvind Kejriwal and LG Anil Baijal were among those present at the meeting on Sunday evening. PTI

Neeraj Chauhan, Saubhadra Chatterji and Abhishek Dey

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New Delhi : Delhi will get hundreds of more intensive care unit (ICU) beds for Covid-19 patients, testing for the coronavirus will be doubled, and doctors from central paramilitary forces will be flown in, the government announced following a high-level meeting that on Sunday underscored what numbers have been indicating of late: the Capital is in the grip of an unprecedented wave of infections.

The meeting was chaired by Union home minister Amit Shah and attendees included chief minister Arvind Kejriwal, the health ministers of the Centre as well as the state, Delhi’s lieutenant governor and top officials from Niti Aayog, Indian Council of Medical Research and All India Institute of Medical Sciences (AIIMS).

The meeting began with a presentation from Niti Aayog’s VK Paul, who described Delhi’s situation as “unprecedented” and “likely to become worse”, according to an official familiar with the discussions, who spoke on condition of anonymity. Among the worrying details presented was this: on November 11, a day when it reported 48,355 new cases, Delhi recorded 361 cases per million of population, a level not seen before in India, not even in Maharashtra during its worst days.

“First, it was decided that the testing capacity for RT-PCR tests would be doubled in Delhi. Labs in Delhi will be utilised to their maximum capacity and wherever the risk of an outbreak is high, mobile testing vans from health ministry and ICMR will be deployed,” Shah said in a series of tweets. ICMR is expected to decide how this can be done by Monday afternoon.

Experts said that while the decision to increase testing was welcome, authorities will need to focus on speeding up results since people are likely to continue spreading the infection in the time it takes between when their samples are collected and the reporting of results.
The minister also said that a decision had been taken to strengthen hospital infrastructure. “It was decided that 250-300 additional beds with ICUs would be added to the existing medical facility of DRDO at Dhaula Kuan... The 10,000-bed Covid Care Centre established at Chhatafarpur would also be strengthened with enhanced availability of beds with oxygen capacity,” the home ministry said in a statement.

Officials also are believed to have briefly considered the idea of additional restrictions, although no decision on this was taken. “There was nothing discussed on more restrictions, although the home ministry may hold a meeting on the matter,” chief minister Arvind Kejriwal said following the meeting.

Kejriwal described the lack of ICU beds as the “biggest challenge”. “We have seen that after October 20, cases have really started rising. Hospital beds are in adequate number but ICU beds have been dwindling. The Centre has assured that 500 ICU beds will be added at the DRDO hospital followed by another 250,” he said, adding: “Second big decision was to increase daily tests to over 100,000. ICMR has assured us they will extend facilities. Delhi government’s facilities are at capacity”.

As on Sunday evening, of the total 3,524 ICU beds for Covid-19 patients across more than 100 hospitals in Delhi, 3,099 were occupied. Hospitals have particularly been swamped this month, with active cases having risen from a little over 22,000 in mid-October to close to 40,000 on Sunday. HT also learns that a team of senior government officials from the Centre and the state may visit private hospitals to ensure that every available bed is being utilised.

The spike has been particularly pronounced due to the festive season. In the week ending October 25, when the city held Dussehra celebrations, there was an average of 3,663 cases every day. As on the middle of last week, this number rose to 7,196. In comparison, the number was 2,627 in the first week of October.

“It was pointed out that the number of active cases per day has increased substantially. While the Case Fatality Rate (CFR) continues to remain in control, the health and medical infrastructure, such as dedicated Covid-19 beds, beds with ventilators, and ICUs, is already showing signs of strain,” the home ministry statement said.

The ministry added that house-to-house surveys will be carried out across Delhi by teams of AIIMS, Delhi government and municipal corporations after which all symptomatic persons people would be tested and provided necessary treatment. People familiar with the development said Union home secretary Ajay Kumar Bhalla, health secretary Rajesh Bhushan and Delhi chief secretary Vijay Kumar Dev will meet on Monday to discuss a strategy on containment zones.

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“With the positivity rate on the rise, there is no other option but to scale up testing to contain the spread of the infection. And, in an ideal world, all the tests would be conducted using RT PCR, which is more sensitive and can pick-up more cases,” said Dr Rajinder K Dhamija, professor of medicine and head of the department of neurology at Lady Hardinge Medical College.

“If there is a delay, it has to be ensured that anyone who undergoes the test -- and you undergo the test only if there is some suspicion -- remains in quarantine till they get the results to limit
transmission of the infection. And, it is the responsibility of the government and the people,” Dr Dhamija added.

The Centre also decided to rush additional doctors and para-medical staff from central paramilitary forces, who will be airlifted to Delhi from other parts of the country. The Union government also directed some hospitals of the three municipal corporations of Delhi – which do not fall under the Delhi government -- will be turned into dedicated Covid-19 hospitals to treat patients with mild symptoms.

Subsequently, teams comprising officials from various departments will visit the private hospitals across Delhi to inspect the availability of medical infrastructure, beds, admission of patients and to assess if the decisions taken earlier are being implemented or not.

There will also be new protocols prepared for plasma donation and providing plasma to critical patients. A high level committee with Niti Aayog’s Paul, AIIMS director Randeep Guleria and ICMR’s head Balram Bhargava will soon submit a report in this regard. “The containment measures taken previously like establishment of containment zones, contract tracing and quarantine and screening will also be reassessed,” Shah said in his tweets, before adding: “Prevention is the only solution to coronavirus; hence Delhi needs to have a robust communication awareness program to inform people about Covid-19 behaviour and negative aspects of the pandemic,” Shah tweeted.

The home minister also suggested that the Delhi CM consult the three mayors in the city for better Covid management.

Later in the day, Kejriwal tweeted: “Delhi has shown before that we can overcome corona when we all work together. Centre, state government, DRDO, ICMR will double their efforts n work together but we need support from all delhites. We can’t afford to be careless. We need all citizens to help by taking all precautions.”

**Covid test positivity rate 15.3 %, highest in 140 days**

*Covid test positivity rate 15.3 %, highest in 140 days (Hindustan Times: 20201116)*
Capital reported 3,235 new cases of the coronavirus disease (Covid-19) on Diwali, as per Sunday’s health bulletin, a dip in infections that came on a day when testing fell to a 76-day low, even as the state battles a third wave of the pandemic that has seen deaths and hospital admissions rise sharply.

In a matter of continuing concern, the positivity rate on Saturday soared to a 140-day high.

While new infections dipped to their lowest since October 26, this only happened because daily tests saw a massive drop and fell to 21,098, the lowest since August 31. In contrast, Delhi had been conducting an average of around 54,000 tests a day in the week before Diwali.

The positivity rate, meanwhile, continued to rise as it touched 15.33% on Saturday — the highest since 15.37% on June 27, indicating that if the government had maintained a regular testing number, the cases would have been significantly higher.

Further, only around 9,000 of the tests on Diwali day were conducted using the more accurate RT-PCR (reverse transcription polymerase chain reaction) method.

The positivity rate — the number of positive cases among total tests — usually goes up with increase in the number of RT PCR as it is a more sensitive test that can pick more positive cases as compared to its alternative rapid antigen test.

Experts see positivity rate as a crucial metric to assess an outbreak in a community and, when this number is coupled with an increase in new cases, it can determine how fast a contagious disease is spreading.

According to recommendations by the World Health Organization (WHO), the positivity rate from a region that has a comprehensive testing programme should be at or below 5% for at least two weeks before an outbreak is considered under control.

Experts have attributed the current exponential rise in cases to the festive season, hazardous pollution levels, as well as the dip in temperatures.

“The number of cases is likely to remain high for at least two more weeks after Diwali, with people being out and about aiding the spread of the infection. It is also known that the low temperatures and high levels of pollution leads to increase in respiratory infections including Covid-19; this might lead to more infections in the coming time,” said Dr Jugal Kishore, head of the department of community medicine at Safdarjung hospital.
Concerns remain over the ability of the city’s health infrastructure to handle the severe Covid-19 caseload.

With over 8,700 people with the infection hospitalised across the city, facilities too are fast running out of intensive care unit (ICU) beds. Over 87% of the 3,542 ICU beds earmarked for the treatment of the Covid-19 patients across hospitals were occupied as on Sunday evening, as per data on the Delhi Corona app. Over 53% of all Covid-19 beds were occupied, as per the app.

The number of available ICU beds are likely to go up, however, with the Delhi high court allowing the government to reserve 80% of the total ICU capacity in 33 big private hospitals.

“Even as more are being opened up for Covid-19 patients, they are filling up fast. If the number of cases continues to go up further, there will be a problem,” said Dr Vikas Maurya, director, department of pulmonology and sleep disorders at Fortis Hospital, Shalimar Bagh.

On Sunday, the city also recorded 95 deaths due to the infection, taking the total toll to 7,614. Earlier this week, the city had seen the highest single day mortality of 104 deaths in a day, higher than the 101 recorded during the June-July surge, when protocols for treatment were still being developed.

“If the hospitals are overwhelmed and the beds get exhausted, naturally the mortality of the disease will go up. People who are in need of ICU care or oxygen support need it in a timely manner. Also, if we look at Covid-19 cases, most people are preferring to stay in home isolation. These days people also have the oxygen saturation monitors at home. So, chances are those who reach the hospitals are in need of immediate medical attention. If they do not get it, they are likely to die,” said Dr Shobha Broor, former head of the department of virology at the All India Institute of Medical Sciences (AIIMS).

Radiology

Radiology holds the key in detection of coronavirus (The Hindu: 20201116)


Contribution of radiologists has become more pronounced during pandemic

Radiology has assumed enormous significance in diagnosis and prognostication during the COVID-19 pandemic and lakhs of people are slowly but surely becoming aware of HRCT Scan, a diagnostic test conducted by the radiology department.

Although people seldom interact directly with the radiologists, the role that the latter plays before COVID-19 is confirmed as well as during treatment post recovery is undeniable. Their contribution has become more pronounced during the pandemic.

In case of emergency cases such as severe head injury in road accidents, surgeries are taken up after assessment by radiologists using CT Scan or any other radiological investigations. When a person enters a diagnosis room, they usually interact with radiographers or technologists, or
supporting staff. The radiographers conduct the process of making a patient or a person undergo the scanning procedure under guidance of the specialists.

“The radiographers or technologists send us images of CT Scan or MRI Scan and other radiological investigation reports. We read the images and note down the observations. In case of emergency cases, if a patient needs immediate surgery or other treatment, we immediately call the surgeon or physician after going through the scanning images,” said Ravuri Power, general secretary of Indian Radiological and Imaging Association-Telangana chapter. The World Radiology Day was observed on November 8.

Immediate assessment
Usually, for immediate assessment, the radiology department is placed next to the emergency or casualty ward of a hospital.

When COVID-19 cases started to increase in March and a few months thereafter, undergoing tests was a challenge in the State. Private labs were allowed to conduct tests to detect presence of the virus from mid-June. Until then, doctors in private hospitals heavily relied on High Resolution Computed Tomography (HRCT) Scan reports to assess if a suspected patient had the virus.

Apart from HRCT Scan, radiological investigations used for diagnosing COVID are chest radiograph (X-Ray) and ultra sonography.

Dr Ravuri said that COVID has a specific Computed Tomography (CT) imaging finding which helps them in accurate diagnosis of the infectious disease. “Hence, it is useful for excluding other infections based on specific chest imaging findings. Besides, physicians manage treatment protocols based on report from radiologists,” he said.

During the treatment too, CT scanning can detect Pulmonary Thrombo Embolism or Cerebral Venous Thrombosis which are blood clots in major blood vessels of the lungs and brain respectively. “These COVID-associated complications have high rate of morbidity and, at times, mortality,” Dr Ravuri said.

**Immunisation**

**India should build COVID-19 vaccine confidence, identify ‘hesitancy hotspots’: immunisation (The Hindu: 20201116)**


According to Prof. Larson, there is generalised vaccine hesitancy primarily because of the lack of proper information on the safety and efficacy of any of the possible COVID-19 vaccines. This is due to distrust of governments as well as motives of pharmaceutical companies India should identify COVID-19 vaccine hesitancy hotspots, pockets where people may be unwilling to receive immunisation for varied reasons, and then build vaccine confidence, says anthropologist and international immunisation expert Heidi J. Larson.
Several global surveys are being conducted about public willingness to take a vaccine, said the professor of Anthropology, Risk and Decision Science at the London School of Hygiene and Tropical Medicine.

“... India must identify hesitancy hotspots and then conduct a vaccine confidence survey,” Prof. Larson, who is also founder-director of the Vaccine Confidence Project research group in London, told PTI in an email interview.

With many vaccine candidates globally in the final phase of human trials, a safe and effective COVID-19 preventive is expected to be approved for production, distribution and acceptance sometime next year.

According to a recent global survey, people in 10 out of 15 countries showed growing reluctance about getting vaccinated. However, Indians are the keenest on getting vaccinated whenever a COVID-19 vaccine is available.

In the World Economic Forum/Ipsos survey of 18,526 adults from 15 countries, 73% said they would get a COVID-19 vaccine if available, down from 77% in August.

India survey
In India, the survey found that vaccination intent has remained unchanged at 87% since August, although 34% respondents were worried about side effects while 16% were concerned about fast-moving trials.

According to Prof. Larson, there is generalised vaccine hesitancy primarily because of the lack of proper information on the safety and efficacy of any of the possible COVID-19 vaccines. This is due to distrust of governments as well as motives of pharmaceutical companies as they are trying to come out with a vaccine faster than normally done so, she reasoned.

“Some of these concerns are understandable as we currently do not have any final information on the safety and efficacy profiles of whichever vaccine may be approved. Other fears are due to distrust of government more broadly or the motives of vaccine companies to produce vaccines more quickly than normal.

“But these vaccines have been able to be developed and tested more quickly because of new technologies. These are not old processes that have been short-cut, they are new processes,” she noted.

Religious issues
According to the anthropologist, certain communities such as the Muslims also have issues due to the presence of gelatine, which is derived from pork.

“There are religious issues. Such as some Muslims concerned that some vaccines are not halal because they have gelatine which is derived from pork. Although most Muslims agree that
Vaccines are important to save lives and if there is no alternative, they will accept the very small amount of gelatine in some vaccines,” she said.

On what could be the solution to clear such hesitation, she said, “The most important thing is to understand why people refuse vaccines, only then can you know what the issue is and how to address it.”

Prof. Larson, who earlier headed the Global Immunisation Communication at UNICEF, noted that political polarisation, religious extremism and misinformation on the internet and through other media such as radio, newspapers and person-to-person discussions are a problem for vaccine confidence.

“It is important to get accurate information out to the public, but some of these issues are not about information, they are about emotions and beliefs which are much more difficult to change,” she said.

Prof. Larson described the COVID-19 pandemic as a “global health crisis” which can “cause long term problems for individuals“.

Asked whether the invention of a COVID vaccine will be able to eradicate the disease, Prof. Larson said, “We are unlikely to eradicate COVID-19 for a very long time, if at all.”

Priority for healthcare professionals
However, she is hopeful that everyone will be vaccinated by the end of 2021 and suggests that healthcare professionals and frontline workers should be immunised first as they are most at risk. They are also at risk of spreading it to others, she added.

“As there are likely not to be enough vaccines for everyone in the world at the same time, there will need to be a decision on who gets the vaccines first,” Prof. Larson said. After healthcare workers, older people should be administered the new vaccine for COVID-19.

India’s Union Health Minister Dr Harsh Vardhan had in early October stated the Centre is planning to vaccinate about 25 crore people against novel coronavirus by July next year.

Dr Vardhan had also said priority would be given to health workers engaged in COVID-19 management in getting inoculated and asserted the Centre would ensure fair and equitable distribution of vaccines, once they are ready.

**Vitamin E extracted**

**Vitamin E extracted from palm oil useful in boosting immune response based on studies on liver cells (New Kerala: 20201116)**


The findings of a new study conducted on mice liver cells reveal 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 antioxidant 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 defence 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), the 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 extracted from palm oil useful in boosting immune response based on studies on liver cells

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**Smoking**

**Study reveals e-cigarettes can be 'gateway' to cigarettes for teens with no prior intention to smoke (New Kerala: 20201116)**


E-cigarette use is associated with a higher risk of cigarette smoking among adolescents who had no prior intention of taking up conventional smoking, suggest the findings of a new study. These findings have strong implications for practice and policy, researchers say.
Cigarette smoking remains a leading preventable cause of morbidity and mortality in the United States. And while adolescent cigarette smoking has declined over the past several decades, e-cigarette use presents a new risk for nicotine use disorder.

"Research is showing us that adolescent e-cigarette users who progress to cigarette smoking are not simply those who would have ended up smoking cigarette anyway," says Olusegun Owotomo, M.D., PhD, M.P.H., the study's lead author and a pediatric resident at Children's National Hospital. "Our study shows that e-cigarettes can predispose adolescents to cigarette smoking, even when they have no prior intentions to do so."

In one of the first theory-guided nationally representative studies to identify which adolescent e-cigarette users are at most risk of progressing to cigarette smoking, Researchers looked at data of more than 8,000 U.S. adolescents, ages 12-17, who had never smoked. The data was collected by the Population Assessment of Tobacco and Health (PATH) study, an NIH and FDA collaborative nationally representative prospective cohort study of tobacco use, from 2014-2016. Among adolescents who did not intend to smoke cigarettes in the future, those who used e-cigarettes were more than four times more likely to start smoking cigarettes one year later compared to those who did not use e-cigarettes.

E-cigarette use constitutes a relatively new risk factor for nicotine use disorder among U.S. adolescents. A 2019 study from the Centers for Diseases Control and Prevention found that 28% of high school students and 11% of middle school students were current e-cigarette users. With the recent emergence of newer and potentially highly addictive e-cigarette products, adolescents who use e-cigarettes are at increased risk of developing nicotine use disorder and progressing to smoke conventional cigarettes.

"Abstinence from e-cigarettes can protect teens from becoming future smokers and should be framed as a smoking prevention strategy by all concerned stakeholders," says Dr Owotomo. "Pediatricians are best positioned to educate patients and families on the clinical and psychosocial consequences of e-cigarette use and should support education campaigns and advocacy efforts geared to discourage adolescent e-cigarette use."

Type 2 Diabetes

Early menopause may be linked to Type 2 Diabetes (New Kerala: 20201116)


Often women express irritation in 'those five days in a month', but menstruation is very important for a woman. When a woman undergoes menopause, it also triggers several health issues. Dr Uma Vaidyanathan, Senior Consultant -- Obstetrics and Gynaecology, Fortis Hospital, Shalimar Bagh talks about the connection between menopause and Type 2 Diabetes. With advancing age, the female sex hormone estrogen levels decline in the body, ovaries stop producing eggs and periods stop; this phase is called 'menopause'. The average age of
menopause is 45. If periods stop before the age of 40, that can be considered as 'early menopause'. If the ovaries get removed for a medical necessity, menses may stop. But, without any medical reason if anyone experiences 'early' menopause, it becomes worrisome.

Many researchers claim that premature menopause and type 2 diabetes are interconnected. Though, medical science is still looking for evidence to establish a direct cause-effect relationship between early menopause and type 2 diabetes. A Dutch study has shown that when women experience menopause before the age of 40, the risk of type 2 diabetes is 4 times greater than those who experience late menopause. On the other hand, if a woman is diagnosed with type 2 diabetes beforehand, she can experience premature menopause. Family history, age and obesity are considered as three major risk factors in diabetes. When menopause sets in, it leads to some physical changes. The variation in the level of estrogen and progesterone leads to insulin resistance. In this situation, due to hormonal imbalance, the pancreas struggles to produce required amount of insulin in the body, it may remain less effective and fails to allow the cells to absorb glucose as per requirement. Therefore, the blood glucose levels surge. Insulin assists in burning down fat that helps to energise our body.

If insulin production gets disturbed, the risk of obesity increases. It is an established fact that weight gain enhances the risk of type 2 diabetes. The progesterone fluctuation accelerates our food cravings and then to satiate the craving, we chose eating snacks or sweets. This unrestrained food craving makes diabetes management even more complicated. When it was observed that post menopause, women become more vulnerable to type 2 diabetes, researchers tried another study on post-menopausal women to understand whether estrogen truly affects the glucose level in the body. In that study, it has been observed that estrogen specifically targets some cells in the pancreas and the gut and helps in increasing the glucose tolerance.

Women need to stay cautious and seek medical attention immediately if any symptoms appear such as irregular periods, decreased sexual desire, vaginal infection, sleep disturbances etc. Experts believe that estrogen therapy may be beneficial in post-menopausal women in lowering the risk of type 2 diabetes. If one can monitor the blood sugar levels frequently, follow a healthy diet, quit smoking and exercise regularly, diabetes can be managed well.

**Early menopause**

**Early menopause may be linked to Type 2 Diabetes (New Kerala: 20201116)**


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**Lung fibrosis**

**New therapies to reduce lung fibrosis developed (New Kerala: 20201116)**


To suppress the impact of lung fibrosis, concerning COVID patients, scientists have been developing new treatment therapies, targeting the complications developed by the mutual relationship between the two.

Philip S. Low, the Purdue Ralph C. Corley Distinguished Professor of Chemistry and Presidential Scholar for Drug Discovery, has led a team to develop two targeted therapies for people with Idiopathic Pulmonary Fibrosis (IPF). The two different therapeutic approaches are published in Science Translational Medicine and EMBO Molecular Medicine.
According to the study, people with IPF have a life expectancy of fewer than five years. Fibrotic diseases cause organ failure that leads to about 45% of all deaths in the United States. Existing therapies do little to slow progression. The results of the research were published in the journal Science Translational Medicine.

"This is a horrible disease that claimed the lives of my next-door neighbour and a good friend's wife," Low said. "We developed two targeted therapies that allow us to use powerful drugs with high toxicities because we specifically deliver them to diseased cells without harming healthy ones," he added.

The first of the Purdue team's novel targeted molecules are designed to slow fibrosis and extend life. The second IPF therapy suppresses fibrosis-inducing cytokine production. The two therapies will be moving into human clinical trials within the next several months. The developments come as a number of people with COVID-19 or who have recovered from COVID-19 experience, lung fibrosis, or other related conditions.

SARS-CoV-2 virus

Study focuses on identification of SARS-CoV-2 virus features causing COVID-19 using primate model (New Kerala: 20201116)


Features of the SARS-CoV-2 virus causing COVID-19, which could be useful for developing vaccines and treatment strategies, were identified using a nonhuman primate model developed at the Korea Research Institute of Bioscience and Biotechnology (KIRBB). The work was initiated in February this year by the research team led by Dr Jung Joo Hong at the KIRBB National Primate Research Center and resulted in the successful development of a nonhuman primate model of COVID-19 infection, the fourth model reported worldwide, following China, the Netherlands, and the US. The results of the study were part of a larger research project aiming to identify key features of severe acute respiratory syndrome coronavirus-2(SARS-CoV-2), the virus causing COVID-19, and to test for the efficacies of COVID-19 vaccines and treatments using the primate model.

In the primate study, vascular abnormalities due to the infection, reasons underlying fatality of COVID-19 infection, particularly in immunocompromised patients, sites of SARS-CoV-2 multiplication inside the human body, and the time-course and were investigated.

The research team showed, for the first time, that SARS-CoV-2 caused vascular inflammation and that the endothelins persisted even 3 days after the infection. Further, they confirmed immunosuppression, which is typically observed in patients with immunodeficiency, when the viral load increased precipitously during COVID-19 infection(first 2 days after getting infected).
This study was featured on the cover of the Journal of Infectious Diseases, a world-class academic journal in the field of infectious diseases. The issue's online edition became available on August 3, 2020, and the article will be printed the November 15 issue.

The research team observed that the virus multiplied rapidly in the upper and lower respiratory tracts of the experimental primates in the first 2 days after the viral infection. Subsequently, the viral load decreased quickly, and the viral activity was not detected 7 days after the infection.

These findings are expected to provide novel insights regarding the diagnostic challenges associated with a false-positive test, i.e., a positive result of the reverse transcriptase-polymerase chain reaction (RT-PCR) test for an asymptomatic.

**Cardiovascular disease**

**Study reveals walnuts helpful in cardiovascular disease (New Kerala: 20201116)**


Studies from a randomised controlled trial reveals the capability of walnuts from preventing major risk factors for heart disease, claims, 'people who regularly consume walnuts may have a lower risk of heart disease, compared to those who do not eat'.

In the study, conducted by Dr Emilio Ros from the Hospital Clinic of Barcelona, in partnership with Loma Linda University, more than 600 healthy older adults consumed 30 to 60 grams of walnuts per day as part of their typical diet or followed their standard diet (without walnuts) for two years.

Those who consumed walnuts had a significant reduction in inflammation, measured by the concentration of known inflammatory markers in the blood, which were reduced by up to 11.5 per cent.

Of the 10 well-known inflammatory markers that were measured in the study, six were significantly reduced on the walnut diet, including interleukin-1b, a potent pro-inflammatory cytokine which pharmacologic inactivation has been strongly associated with reduced rates of coronary heart disease.

The research was part of the Walnuts and Healthy Aging (WAHA) study - the largest and longest trial to date exploring the benefits of daily walnut consumption. The study has been published in the Journal of the American College of Cardiology.

The study's conclusion is that the anti-inflammatory effects of walnuts provide a mechanistic explanation for cardiovascular disease reduction beyond cholesterol lowering.
"Acute inflammation is a physiological process due to activation of the immune system by injuries such as trauma or infection, and is an important defence of the body", said Dr Emilio Ros, a lead researcher in the study.

"Short-term inflammation helps us heal wounds and fight infections, but inflammation that persists over time (chronic), caused by factors such as poor diet, obesity, stress, and high blood pressure, is damaging instead of healing, particularly when it comes to cardiovascular health. The findings of this study suggest walnuts are one food that may lessen chronic inflammation, which could help to reduce the risk for heart disease" - a condition we become more susceptible to as we age," added Ros.

Chronic inflammation is a critical factor in the development and progression of atherosclerosis, which is the buildup of plaque or "hardening" of the arteries, the principal cause of heart attacks and stroke. Therefore, the severity of atherosclerosis depends greatly on chronic inflammation, and dietary and lifestyle changes are key to mitigating this process.

While existing scientific evidence establishes walnuts as a heart-healthy food, researchers continue to investigate the "how" and "why" behind walnuts' cardiovascular benefits. According to Dr. Ros, "Walnuts have an optimal mix of essential nutrients like the omega-3 alpha-linolenic acid, or ALA (2.5g/oz), and other highly bioactive components like polyphenols, that likely play a role in their anti-inflammatory effect and other health benefits."

The study findings were also reinforced by an editorial in the same publication entitled "Ideal Dietary Patterns and Foods to Prevent Cardiovascular Disease Beware of Their Anti-Inflammatory Potential", which concludes that a better knowledge of the mechanisms of health protection by the different foods and diets, mainly their anti-inflammatory properties, should inform healthier food choices.

While these results are promising, the research does have limitations. Study participants were older adults who were healthy and free living with the option to eat a variety of other foods in addition to walnuts. Additionally, further investigation is needed in more diverse and disadvantaged populations.

**Immune molecules**

**Blocking two immune molecules can prevent asthma attacks: Study (New Kerala: 20201116)**


La Jolla Institute for Immunology (LJI), has come up with a new breakthrough study, revealing the key to preventing asthma attacks by blocking two immune molecules at the same time is key to preventing asthma attacks in a mouse model.
Asthma has become a matter of concern for Americans as every day, ten Americans die from the attack. The researchers have discovered a new method that can provide relief to all asthma patients.

"We have found a way to block the acute asthmatic inflammatory response--and we saw a strong, long-lasting reduction in asthma exacerbations," says Michael Croft, PhD, professor at LJI and senior author of the new study, published November 5, 2020, in The Journal of Allergy and Clinical Immunology.

When a person with allergies encounters an asthma trigger, harmful T cells boost their numbers in the lungs and release molecules that cause inflammation. The new study shows how to throw a wrench in this process.

For the study, the Croft Lab focused on blocking OX40L and CD30L, which are signalling proteins similar to tumour necrosis factor (TNF), a protein that is the target of several FDA approved drugs. These molecules are upregulated by allergens and can activate the harmful T cells that drive inflammation in asthma.

In the new study, Croft and his colleagues worked with a mouse model sensitive to house dust mites--a very common allergy and asthma trigger. The scientists showed that blocking OX40L and CD30L at the same time could stop the expansion and accumulation of harmful T cells in the lungs during an allergen attack, and this then led to reduced inflammation.

"The combination of taking out the two sets of signals allowed for a strong reduction in the number of those pathogenic T cells, whereas only neutralising either one had a relatively mild effect," says Croft. "That was quite a significant finding."

Importantly, blocking both OX40L and CD30L also reduced the number of pathogenic T cells that lingered in the lungs following the asthma attack. These "memory" T cells would normally drive inflammation when a person encounters an allergen again. Without OX40L and CD30L on the job, very few of these harmful T cells stuck around in the lungs, and mice had a weaker response to house dust mites for weeks after the initial treatment. "This suggests we were diminishing the immune memory of the allergen," Croft says.

This study comes several years after an ineffective clinical trial targeting OX40L. Previous research by the Croft lab and other researchers had suggested that blocking signalling from OX40L could reduce airway inflammation, yet a neutralizing antibody against OX40L did not have a beneficial effect in asthmatic patients with house dust mite or cat allergies. "Why did it fail?" asks Croft. "The new study supports the idea that simply blocking OX40L was not enough."

The research sheds light on the complexity of the immune system and suggests that long-lasting therapy of inflammatory and autoimmune diseases may require a multi-pronged targeting approach, especially when trying to limit the number of pathogenic T cells that are the central drivers of these diseases.

A combination therapeutic to block both molecules would be complicated to test (researchers would need to prove the safety of blocking each separately) but Croft thinks either dual antibodies or a "bi-specific" reagent could work to block OX40L and CD30L signalling together in a single treatment.
Croft is now thinking of the next steps for his lab. Blocking OX40L and CD30L reduced memory T cells but didn't eliminate all of them. Croft thinks additional target molecules could be out there. "We're trying to understand what those molecules might be," says Croft.

Health Care Services (Hindustan: 20201116)

https://epaper.livehindustan.com/imageview_456553_55227824_4_1_16-11-2020_3_i_1_sf.html
लंचरी में कोरोना संक्रमण धमने के लिए केंद्र सरकार ने कमर कस ली है। गृहमंत्री अमित शाह ने संचार को इस मुद्दे पर उच्चतम स्तर की तलाश की। इसमें आर्थिक सत्रों में जाँच दोगुनी करने और स्वास्थ्यकर्मियों की कमी को देखते हुए अवधारणामंडल बनाने की हेतु आदेश दिया। गृहमंत्री अर्जित केसरीवाला ने कहा कि अब रोज एक से सवा लाख कोरोना जांच होगी।

300 और आईसीएस सेकेंड: गृह मंत्री ने धीमता अंशित होकर इसीसे की गई आर्थिकों के अस्पताल में 250-300 आईसीएस सेकेंड बढ़ाने का मिशाल दिया। ऑसियाजन बढ़ाने के लिए छाया में बने 10000 बेड बनाने के लिए गोधावल ने इसको संपादित किया। प्रबियोक्सियों को जांच करने वाला ज्यादा से ज्यादा उपयोग होगा। कोरोना संभावित क्षेत्रों में आईसीएस की मोबाइल जांच लेब तैनात नहीं होंगे। दूसरी राशि में लेब दिल्ली स्थानित करने की चाहिए ताकि ज्यादा से ज्यादा लोगों को जांच हो सके।

अर्जित केसरीवाला के दावे पर के 50 हजार कोरोना जांच हो सकते हैं जो उल्लम्बित अधिकारियों की उपमुख्यायों, अनिल केसलू और गृहमंत्री अर्जित केसरीवाला के जैसे।

दिल्ली में रविवार को कोरोना संकट की समीक्षा करते गृहमंत्री अमित शाह, साथ में उपराज्यपाल अनिल केसलू और मुख्यमंत्री अर्जित केसरीवाला।

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<td>प्लाज्मा बेरोजगरी से मरीजों का इलाज के लिए नया प्रोटोकॉल बनाना।</td>
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