



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
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COVID-19

Hospitalised COVID-19 patients can have ongoing symptoms for months: Study (The Tribune: 20201020)

<https://www.tribuneindia.com/news/health/hospitalised-covid-19-patients-can-have-ongoing-symptoms-for-months-study-158056>

It found some patients have abnormalities in multiple organs after being infected with the novel coronavirus and that persistent inflammation caused problems for some for months

Hospitalised COVID-19 patients can have ongoing symptoms for months: Study
Photo for representation only.

More than half of COVID-19 patients discharged from hospital still experienced symptoms of breathlessness, fatigue, anxiety and depression for two to three months after their initial infection, according to the findings of a small UK study.

The research, led by scientists at Britain's Oxford University, looked at the long-term impact of COVID-19 in 58 patients hospitalised with the pandemic disease.

It found that some patients have abnormalities in multiple organs after being infected with the novel coronavirus and that persistent inflammation caused problems for some for months.

The study has not been peer-reviewed by other scientists but was published before review on the MedRxiv website.

"These findings underscore the need to further explore the physiological processes associated with COVID-19 and to develop a holistic, integrated model of clinical care for our patients after they have been discharged from hospital," said Betty Raman, a doctor at Oxford's Radcliffe Department of Medicine who co-led the research.

An initial report by Britain's National Institute for Health Research (NIHR) published last week showed that ongoing illness after infection with COVID-19, sometimes called "long COVID", can involve a wide range of symptoms affecting all parts of the body and mind.

The Oxford study's results showed that two to three months after the onset of the COVID-19, 64 per cent of patients suffered persistent breathlessness and 55 per cent reported significant fatigue.

MRI scans showed abnormalities in the lungs of 60 per cent of the COVID-19 patients, in the kidneys of 29 per cent, in the hearts of 26 per cent and the livers of 10 per cent.

"The abnormalities detected ... strongly correlated with serum markers of inflammation," Raman said. "This suggests a potential link between chronic inflammation and ongoing organ damage among survivors." Reuters

Silent' mutations

Silent' mutations that helped novel coronavirus thrive identified (The Tribune: 20201020)

<https://www.tribuneindia.com/news/health/silent-mutations-that-helped-novel-coronavirus-thrive-identified-158053>

Finding could lead to new molecular targets for treating or preventing COVID-19

lent' mutations that helped novel coronavirus thrive identified

A woman drinks juice using a zip-up mask provided by Wok'ies restaurant in Kolkata, on Researchers have identified a number of 'silent' mutations in the roughly 30,000 letters of the novel coronavirus's genetic code that helped it thrive once it made the leap from bats and other wildlife to humans—and possibly set the stage for the global pandemic.

The subtle changes involved how the virus folded its RNA molecules or genetic material within human cells, according to the researchers.

The finding, published in the journal PeerJ, could lead to new molecular targets for treating or preventing COVID-19.

The researchers used statistical methods to identify adaptive changes that arose in the SARS-CoV-2 genome in humans, but not in closely related coronaviruses found in bats and pangolins.

"We're trying to figure out what made this virus so unique," said Alejandro Berrio, a postdoctoral associate in biologist Greg Wray's lab at Duke University in the US.

Previous research detected fingerprints of positive selection within a gene that encodes the "spike" proteins studding the coronavirus's surface, which play a key role in its ability to infect new cells.

The new study flagged mutations that altered the spike proteins, suggesting that viral strains carrying these mutations were more likely to thrive.

However, with their approach, the researchers also identified additional culprits that previous studies failed to detect.

They report that so-called silent mutations in two other regions of the SARS-CoV-2 genome, dubbed Nsp4 and Nsp16, appear to have given the virus a biological edge over previous strains without altering the proteins they encode.

Instead of affecting proteins, Berrio said, the changes likely affected how the virus's genetic material—which is made of RNA—folds up into 3D shapes and functions inside human cells.

What these changes in RNA structure might have done to set the SARS-CoV-2 virus in humans apart from other coronaviruses is still unknown, he said.

But they may have contributed to the virus's ability to spread before people even know they have it—a crucial difference that made the current situation so much more difficult to control than the SARS coronavirus outbreak of 2003.

“Nsp4 and Nsp16 are among the first RNA molecules that are produced when the virus infects a new person,” Berrio said.

“The spike protein doesn't get expressed until later. So they could make a better therapeutic target because they appear earlier in the viral life cycle,” he said.

By pinpointing the genetic changes that enabled the new coronavirus to thrive in human hosts, scientists hope to better predict future zoonotic disease outbreaks before they happen.

“Viruses are constantly mutating and evolving,” Berrio said.

“So it's possible that a new strain of coronavirus capable of infecting other animals may come along that also has the potential to spread to people, like SARS-CoV-2 did. We'll need to be able to recognise it and make efforts to contain it early,” he added. — PTI

Fasting

Avoid fasting: Doc's advice to high-risk Covid candidates (The Tribune: 20201020)

<https://www.tribuneindia.com/news/health/avoid-fasting-docs-advice-to-high-risk-covid-candidates-158017>

Doctors believe that fasting could reduce the innate defence mechanism

Avoid fasting: Doc's advice to high-risk Covid candidates

Doctors believe that fasting could reduce the innate defence mechanism, as well as adaptive immune responses of the body. iStock

As the festive season begins with the coronavirus pandemic still lingering, doctors have advised people to avoid fasting during Navratri or Karwa Chauth and make necessary changes to safeguard their health, especially if they are recovering from a Covid infection or belong to the high-risk group.

Doctors believe that fasting could reduce the innate defence mechanism, as well as adaptive immune responses of the body.

"People who are Covid positive or are recovering from Covid infection should avoid fasting during Navratri or Karwa Chauth. Those who are considered highly susceptible to the virus -- elderly, people with diabetes, hypertension or other comorbidities, and pregnant and lactating women -- should in no way fast during the pandemic," said Col Vijay Dutta, senior consultant, internal and respiratory medicine at Indian Spinal Injuries Centre, New Delhi.

"Intermittent fasting shifts the primary energy source of the body from glucose to free fatty acid (FFA) which helps burn fat. However, fasting may reduce the body's innate defence mechanisms as well as adaptive immune responses as immune cells which rely on glucose to sustain their function and proliferation. Reduced glucose availability and hypoinsulinemia during fasting may have negative effects on immune mechanisms," he explained.

Hypoinsulinemia is a condition in which the body doesn't respond well to the effects of insulin. The pancreas tries to compensate by making more insulin. Insulin resistance may eventually lead to the development of type 2 diabetes.

The festivity of Navratri has already started and will continue till October 25. The Karwa Chauth will follow on November 4. While the doctors advised against the fasting, they also said that those opting for fasts should ditch traditional diets which are heavy on fried cuisines.

"Those who are fasting should opt for healthy food as they break their fast instead of the usual fried and oily food. Take fruits to stay hydrated and fill with natural glucose whereas packaged juices add sugar in the blood. Fruits like banana, pomegranate, papaya, apples, and berries add fibre while nuts such as walnuts, almonds and pistachios can be a good source of protein and healthy fat. Opt for light meals comprising multigrain chapati with vegetables or paneer instead of oily and deep-fried pakoras or parathas," said Rakesh Pandit, senior consultant, internal medicine, Aakash Healthcare, New Delhi.

The doctors also advised pregnant and lactating women not to fast in such conditions. They cautioned that the whole day fasting could interfere with natural metabolism causing a hormonal imbalance which may lead to acidity, bloating, nausea and discomfort.

Gauri Agarwal, a senior gynaecologist & fertility expert at Seeds of Innocence, New Delhi, said that the whole day of fasting can affect the blood sugar levels in pregnant women.

"Pregnant women or lactating mothers should avoid fasting on both Navratri and Karwa Chauth. Day-long fasting can create stress on the body and adversely impact the blood sugar level, pushing it higher than normal.

"Long-term fasting in pregnancy and breastfeeding can cause hormonal imbalance and interfere with natural metabolism - both have adverse impacts on the women's body. If one is insistent, make sure she is taking fluids such as fresh juice, coconut water, milk or fresh fruit smoothies," she advised.

Home-based COVID-19 Test

Diagnostics group Eurofins gets US 'EUA' approval for home-based COVID-19 Test (The Tribune: 20201020)

<https://www.tribuneindia.com/news/health/diagnostics-group-eurofins-gets-us-eua-approval-for-home-based-covid-19-test-158011>

Results are reviewed by a licensed physician and provided via email within 24 hours of sample receipt

Diagnostics group Eurofins gets US 'EUA' approval for home-based COVID-19 Test
Worldwide coronavirus cases cross 40 million on Monday. iStock

Laboratory testing and diagnostics company Eurofins said its new at-home COVID nasal testing product had received 'Emergency Use Approval' (EUA) status from the US Food & Drug Administration regulatory body.

Eurofins said the EUA authorised self-collection kit gives consumers a convenient and quick option to test from the comfort of their home, with results reviewed by a licensed physician and provided via email within 24 hours of sample receipt.

Worldwide coronavirus cases crossed 40 million on Monday, according to a Reuters tally, as the onset of winter in the northern hemisphere fuelled a resurgence in the spread of the disease. Reuters

Heart rhythm disorder

Big babies at higher heart rhythm disorder risk in adulthood (The Tribune: 20201020)

<https://www.tribuneindia.com/news/health/big-babies-at-higher-heart-rhythm-disorder-risk-in-adulthood-158000>

Risk of atrial fibrillation in adulthood may be higher for large newborns (over 4 kilos or 8 pounds 13 ounces)

Big babies at higher heart rhythm disorder risk in adulthood

Chinese researchers from Zhejiang University, Hangzhou, China said that the risk of atrial fibrillation in adulthood may be higher for large newborns. Photo: Thinkstock

A team of researchers here has linked elevated birth weight with developing a common heart rhythm disorder atrial fibrillation later in life.

Chinese researchers from Zhejiang University, Hangzhou, China said that the risk of atrial fibrillation in adulthood may be higher for large newborns (over 4 kilos or 8 pounds 13 ounces) than those with normal birth weight.

"Preventing elevated birth weight could be a novel way to avoid atrial fibrillation in offspring -- for example with a balanced diet and regular check-ups during pregnancy, particularly for women who are overweight, obese or have diabetes," said study author Dr Songzan Chen at the 31st 'Great Wall International Congress of Cardiology' (GW-ICC).

"People born with a high weight should adopt a healthy lifestyle to lower their likelihood of developing the heart rhythm disorder," Chen said.

Atrial fibrillation is the most common heart rhythm disorder, affecting more than 40 million individuals globally.

People with atrial fibrillation have a five times greater risk of having a stroke.

The relationship between birth weight and atrial fibrillation is controversial and this study investigated the lifetime causal effect of birth weight on the risk of atrial fibrillation.

The researchers conducted a naturally randomised controlled trial.

First, they used data from 321,223 individuals in a genome-wide association study (GWAS) to identify 132 genetic variants associated with birth weight.

Next, they identified which of those variants play a role in atrial fibrillation using data from 537,409 participants of the Atrial Fibrillation Consortium (of whom 55,114 had atrial fibrillation and 482,295 did not).

The 132 genetic variants were randomly allocated to the 537,409 participants at conception, giving each individual a birth weight in grams.

The investigators then analysed the association between birth weight and atrial fibrillation.

Elevated birth weight was associated with an increased risk of atrial fibrillation later in life.

Specifically, participants with a birth weight that was 482 grams above the average were 30 per cent more likely to develop the heart rhythm disorder, the study said.

"However, we cannot discount the possibility that adult height and weight may be the reasons for the connection. Birth weight is a robust predictor for adult height, and taller people are more likely to develop atrial fibrillation," Chen noted.

Previous research has shown that the link between birth weight and atrial fibrillation was weaker when adult weight was taken into account.

"This study provides genetic evidence for the association between elevated birth weight and the increased risk of atrial fibrillation," said Professor Guosheng Fu of Sir Run Run Shaw Hospital (SRRSH).

Covid-19: What you need to know today (Hindustan Times: 20201020)

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

Could India indeed have fewer than 40,000 active cases of the coronavirus disease (Covid-19) by February as a government-appointed panel believes? Sure, the number, reported in an article in HT (bit.ly/35boLRA) on Monday, is, according to the panel, contingent on the wearing of masks, tracing, and social distancing, but a drop from the current level of around 770,000 active cases (according to the HT dashboard) to 40,000 in the next three-and-half months does seem difficult.

The last time India had fewer than 40,000 infected cases was in the first fortnight of May, when it was seeing between 3,000 and 4,000 cases a day. The panel's projection comes against the backdrop of a consistent fall in daily case numbers, from a weekly average of around 93,000 in mid-September to around 61,000 in the third week of October, and would appear to assume that India will not see a second wave of infections. That seems unlikely for five reasons: the onset of winter, which many experts expect to set off a rash of new cases; the reopening of almost everything; the ongoing festive season, which will likely witness some amount of fervent socialising; the trend seen in almost every large country in the world (much of Europe is in the midst of a raging second wave currently, and the US is in its third); and corona fatigue (something I have written about and warned against repeatedly). Still, as the cliché goes, I will hope for the best and prepare for the worst.

No country has been able to predict the trajectory of the disease, and the only correlation that has been established thus far is between the extent of testing and the stringency of measures such as lockdowns on one side, and the number of daily cases on the other. Every other link – temporal or related to the infection rate – is hypothetical. But what if this can be done?

A paper on the pre-print server medRxiv claims it can be – and without much trouble, leveraging the prevalent reverse transcription polymerase chain reaction or RT-PCR tests that most countries (including India) use. James A Hay, Lee Kennedy-Shaffer, both at the Harvard TH Chan School of Public Health, Boston, and others, have built a model that, they say, can measure where the epidemic's trajectory is, based on the viral loads in a random sample of the

population. The RT-PCR test, considered the gold standard of Covid-19 tests, is widely used, the authors say, as a Yes-No (Positive-Negative) test, but it also measures viral loads. The hypothesis behind the model is that in the early stages of the pandemic's run in a region, viral loads in a random sample will be high because the infections are still recent – and that in later stages of the epidemic, these loads reduce because the infections are no longer recent. Thus, the authors say, the viral load can be used to actually understand whether the epidemic is waxing or waning in a region. “The distribution of viral loads, in the form of Cycle thresholds (Ct), from positive surveillance samples at a single point in time can provide accurate estimation of an epidemic's trajectory,” they write. They also add that “the distributional properties of the measured viral loads (median and skewness) vary with the growth rate of new cases”.

Clearly, more work is needed to understand the model used by the authors and stress test it under various conditions, but if it holds, this approach could actually help health administrators figure out when and whether the number of active cases in a region is declining or rising. As the authors point out, this could assist “real-time resource allocation” and shape “outbreak mitigation strategies”.

Science and data, as this columnist has repeated ad nauseum, are the only things that can point us in the right direction. Everything else is just a guess.

Total Covid tests

Total Covid tests in city cross 4 million (The Hindustan Times: 20201020)

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

: The number of Covid-19 tests conducted in Delhi crossed the four million-mark, even as the number of tests dipped to just 36,000, according to Monday's daily health bulletin.

The Capital added 2,154 cases of the infection, and conducted 36,445 tests in the 24-hour period pertaining to the Monday bulletin. To be sure, new cases and tests usually dip on Monday, owing to a lull on the weekend.

The bulletin also added 31 deaths on the day, taking the city's total fatality count to 6,040.

In Delhi, after reaching a peak of over 4,400 cases being reported in a day during September third week, the numbers started dipping slowly, reporting fewer than 3,000 cases since early October. However, the numbers started increasing again when the government increased the number of more accurate RT-PCR [reverse-transcription polymerase chain reaction] tests.

Rapid antigen tests can give results within 15 minutes, but tend to throw false negatives.

“Of course, if we do more RT-PCR tests, we will detect more cases as it is a more sensitive test. This is the reason it is suggested that the less sensitive rapid antigen tests be used in containment zones for screening cases, but RT-PCR tests be used elsewhere,” said Dr Rajinder K Dhamija, professor of medicine and head of department of neurology at Lady Hardinge Medical College.

Experts worry there might be an increase in the number of cases after the festive season.

“There is likely to be an increase in the number of cases as people meet during the festive season. The increase will be seen 10 to 14 days after the festival,” said Dr GC Khilnani, former head of the department of pulmonology at the All India Institute of Medical Sciences (AIIMS).

Coronavirus pandemic in India

A tool for thought: On coronavirus pandemic in India (The Hindu: 20201020)

<https://www.thehindu.com/opinion/editorial/a-tool-for-thought-on-coronavirus-pandemic-in-india/article32895575.ece>

Pandemic forecasts must be used to induce changes and avoid worst-case scenarios

A committee of experts — well-regarded mathematicians and infectious disease experts — appointed by the Department of Science and Technology to use mathematical modelling and forecast the course of the pandemic has brought good tidings. By their estimate, India passed its COVID-19 peak in September and the decline in the overall caseload being observed for nearly a month now is to continue. Active cases, about 7.5 lakh now, are expected to drop below 50,000 by December, and by February, the pandemic is likely to extinguish itself with only ‘minimal’ (not zero) infections. While it is reasonable to assume that the seven-member committee has been scrupulous, the caveat is that this is still a forecast based on mathematical modelling. There are some strong assumptions. The decline will continue only if there are no major mutations during winter, protective antibodies are durable, and current restrictions are maintained. There would be no significant gains from a strict lockdown beyond the district level, and current containment measures would suffice, except if there are local outbreaks that threaten to overwhelm health-care facilities there. Their calculation also showed a peak by July latest, with anything from six to 15 times the existing infections had there been no lockdown or if it had been delayed to April.

The purpose of pandemic modelling is to generate a probabilistic overview of the future and mathematical modelling has become a popular, creative exercise, with several models and forecasts being made available on pre-print servers and pending peer-review. The latest model is expected to be published in the Indian Journal of Medical Research this week, but it appears to be a quotidian exercise. The datasets it has relied on are publicly available and the modelling employs a category of models called SEIR that estimates, within a population, those Susceptible, Exposed, Infected and Recovered. It is extremely dependent on the quality of data that is used as an input and relies as much on simplifying assumptions that sacrifice complexity for comprehension but there is nothing to suggest, from what is known about the exercise, that it is more likely to be true than similar estimates from scores of models the world over that subscribe to a certain degree of rigour. Experts associated with the pandemic have reiterated many times that mathematical modelling ought not to be taken literally. The latest assessment too should then be used not to critique or justify past decisions but dwell more on the future. For instance, if the model suggests that the pandemic would extinguish by February with a

dramatic dip by December, then should the accelerated clinical trials of potential vaccines be top priority? Mathematical models, to be useful, must induce policy or behavioural change to avoid their own worst-case scenarios and this latest assessment must be seen — no more, no less — as a tool to this end.

Food and Nutrition

Have nutritional beverage with exercise for fit body, sharp mind (New Kerala: 20201020)

<https://www.newkerala.com/news/2020/184264.htm>

Daily exercise, along with nutrient-enriched beverages, can do wonder with improving both physical and cognitive health, researchers have discovered.

While exercise alone improved strength and endurance, mobility and stability, those who also consumed the nutritional supplement as part of the study saw all of these improvements and more.

"For example, they were better able to retain new information in their working memory and had quicker responses on tests of fluid intelligence than those taking the placebo," said Aron Barbey, professor of psychology at the University of Illinois at Urbana-Champaign.

To reach this conclusion, the researchers studied the effects of a 12-week exercise regimen on 148 active-duty Air Force airmen, half of whom also received a twice-daily nutrient beverage that included protein, the omega-3 fatty acid, DHA, lutein, phospholipids, vitamin D, B vitamins and other micronutrients, along with a muscle-promoting compound known as HMB.

Both groups improved in physical and cognitive function, with added gains among those who regularly consumed the nutritional beverage, the team reported in a paper appeared in the journal Scientific Reports.

Physical power increased in both groups as a result of the physical training, Zwilling said.

"Power is a measure of physical fitness that is based on several factors, such as how fast a participant can pull a heavy sled over a set distance, how far they can toss a weighted ball, and how many pushups, pull-ups or sit-ups they can perform in a set time period," explained post-doctoral researcher Christopher Zwilling.

The physical training reduced participants' body fat percentage and increased their oxygen-uptake efficiency, or VO2 max.

The participants also performed better than they had initially on several measures of cognitive function.

The most notable of these was an increase in the accuracy of their responses to problems designed to measure fluid intelligence.

Participants who consumed the nutritional beverage also saw greater improvements in their ability to retain and process information.

Their reaction time on tests of fluid intelligence improved more than their peers who took the placebo, the researchers found.

Autism

Children with autism, ADHD have more doctor, hospital visits during infancy: Study (New Kerala: 20201020)

<https://www.newkerala.com/news/2020/184229.htm>

Children who are later diagnosed with autism or attention deficit hyperactivity disorder visit doctors and hospitals more often in their first year of life than non-affected children, suggest the findings of a new study which enlightens a potential new way to identify the conditions early.

The findings from Duke Health researchers, appearing in the journal *Scientific Reports*, provide evidence that health care utilisation patterns in a baby's first year can be gleaned from electronic medical records, serving as a roadmap to provide timely diagnoses and treatments that could improve outcomes and reduce health care costs.

Autism spectrum disorder (ASD) affects approximately 1.5 per cent of children in the United States and attention deficit hyperactivity disorder (ADHD) affects about 11 per cent of US children. ADHD symptoms are also present in up to 60 per cent of children with ASD. The diagnoses are associated with higher utilisation of health care services, at great expense to families.

"This study provides evidence that children who develop autism and ADHD are on a different path from the beginning," said lead author Matthew Engelhard, M.D., Ph.D., a senior research associate at Duke. "We have known that children with these diagnoses have more interactions with the health care system after they've been diagnosed, but this indicates that distinctive patterns of utilization begin early in these children's lives. This could provide an opportunity to intervene sooner."

"We know that children with ASD and ADHD often receive their diagnosis much later, missing out on the proven benefits that early interventions can bring," said Geraldine Dawson, Ph.D., director of the Duke Center for Autism and Brain Development and the Duke Institute for Brain Sciences. "Owing to the brain's inherent malleability -- its neuroplasticity -- early detection and intervention are critical to improving outcomes in ASD, especially in terms of language and social skills."

Engelhard and colleagues, including senior authors Dawson and Scott Kollins, Ph.D., used 10 years of data collected from the electronic health records of nearly 30,000 patients, primarily at Duke University Health System, who had at least two well-child visits before age one.

Patients were grouped as having later been diagnosed with ASD, ADHD, both conditions or no diagnosis. The researchers then analysed the first-year records for hospital admissions, procedures, emergency department visits and outpatient clinic appointments.

For the children who were later found to have one or both of the diagnoses, their births tended to result in longer hospital stays compared to children without the disorders.

Children later diagnosed with ASD had higher numbers of procedures, including intubation and ventilation, and more outpatient speciality care visits for services such as physical therapy and eye appointments.

Children who were later found to have ADHD had more procedures, notably including blood transfusions, as well as more hospital admissions and more emergency department visits.

Studies show that treatments for these disorders work best when they begin early in a child's life, Dawson said. Understanding that there are signals available in a child's electronic health record could help lead to earlier and more targeted therapies.

"We are hopeful that these early utilization patterns can eventually be combined with other sources of data to build automated surveillance tools to help parents and paediatricians identify, which kids will benefit most from early assessment and treatment," Kollins said.

The researchers said they plan to conduct additional analyses to explore more fully what specific health concerns prompted the extra doctor and hospital visits.

"We want to understand these distinctions in greater detail and identify them as soon as possible to make sure children have access to the resources they need," Engelhard said.

Sleep disruption

Sleep disruption due to overuse of smartphones (New Kerala: 20201020)

<https://www.newkerala.com/news/2020/184210.htm>

Cell phones have become integral to function for nearly everyone. While it has brought a lot of tasks to our fingertips, cell phones also have a host of disadvantages. Cellphones emit intermittent electromagnetic radiation (also referred to as Radio Frequency energy) and bright screen light, both these aspects have tremendous impact triggered from prolonged use.

Increased screen time also affects the sleep and psychosocial behavior across age groups. Usage of cellphones has exponentially increased over time, so much so that we usually take it to bed, to the play areas, and even to the toilet.

Being exposed to the bright light emitting from cell phones has been shown to reduce levels of Melatonin, which plays a pivotal role in maintaining your natural sleep-wake cycle. Melatonin is a hormone which is secreted by the Pineal Gland to give cues to the biological clock and brain, that it's time to sleep. Studies have shown that excessive use of cell phones leads to

reduced duration and quality of sleep; it also increases daytime fatigue. It increases personal stress by creating an urge to reply to the text messages immediately, and respond.

A study done by He et al. reported that avoiding cellphone use 30 minutes prior to sleep, increases the duration and quality of sleep, it also improves work memory. An NCBI study on Japanese adolescents found that long duration of mobile phone use was associated with Insomnia, particularly in students using mobile phones for 5 hours or more each day.

Additionally, long hours spent on social networking sites and online chatting apps using mobile phones, was related to depression, particularly in students who spent over two hours on these sites. It concluded that appropriate use of mobile phones should be propagated in order to prevent sleep disturbances and the impairment of mental health among adolescents.

Reducing mobile phone usage at night before sleeping is a great habit to cultivate. The literature on the dangers of cellphone use and electromagnetic radiation on the brain is still in an emerging phase, however the advantages of avoiding phone use before sleeping and excessive use during day are very much evident.

Nutrition regimen

Study reveals exercise, nutrition regimen benefits physical, cognitive health (New Kerala: 20201020)

<https://www.newkerala.com/news/2020/184195.htm>

Researchers studied the effects of a 12-week exercise regimen on 148 active-duty Air Force airmen, half of whom also received a twice-daily nutrient beverage that included protein; the omega-3 fatty acid, DHA; lutein; phospholipids; vitamin D; B vitamins and other micronutrients; along with a muscle-promoting compound known as HMB.

They found that both groups improved in physical and cognitive function, with added gains among those who regularly consumed the nutritional beverage, the team reports.

The findings appear in the journal Scientific Reports.

Participants were randomly assigned to the two groups. The exercise regimen combined strength training and high-intensity interval aerobic fitness challenges. One group received the nutritional beverage and the other consumed a placebo beverage that lacked the added nutrients. Neither the researchers nor the participants knew who received the nutrient-enriched beverage or placebo.

"The exercise intervention alone improved strength and endurance, mobility and stability, and participants also saw increases in several measures of cognitive function. They had better episodic memory and processed information more efficiently at the end of the 12 weeks. And they did better on tests that required them to solve problems they had never encountered before,

an aptitude called fluid intelligence," said Aron Barbey, a professor of psychology at the University of Illinois at Urbana-Champaign who led the study with postdoctoral researcher Christopher Zwillling.

"Those who also consumed the nutritional supplement saw all of these improvements and more. For example, they were better able to retain new information in their working memory and had quicker responses on tests of fluid intelligence than those taking the placebo," Barbey said.

Physical power increased in both groups as a result of the physical training, Zwillling said.

"Power is a measure of physical fitness that is based on several factors, such as how fast a participant can pull a heavy sledge over a set distance, how far they can toss a weighted ball, and how many pushups, pullups or situps they can perform in a set time period," he said.

The physical training reduced participants' body fat percentage and increased their oxygen-uptake efficiency or VO2 max. The airmen also performed better than they had initially on several measures of cognitive function. The most notable of these was an increase in the accuracy of their responses to problems designed to measure fluid intelligence.

"But we also wanted to know whether taking the supplement conferred an advantage above and beyond the effect of exercise," Zwillling said. "We saw that it did, for example in a relationship to resting heart rate, which went down more in those who took the supplement than in those who didn't."

Participants who consumed the nutritional beverage also saw greater improvements in their ability to retain and process information. And their reaction time on tests of fluid intelligence improved more than their peers who took the placebo, the researchers found.

"Our work motivates the design of novel multimodal interventions that incorporate both aerobic fitness training and nutritional supplementation, and illustrates that their benefits extend beyond improvements in physical fitness to enhance multiple measures of cognitive function," Barbey said.

The U. of I. team conducted the intervention with study co-author Adam Strang, a scientist in the Applied Neuroscience Branch of Wright-Patterson Air Force Base near Dayton, Ohio, along with his colleagues in the Air Force Research Laboratory. The U. of I. team also worked with research fellow and study co-author Tapas Das and his colleagues at Abbott Nutrition, who led the design of the nutritional beverage, which is a mixture of nutrients targeting both muscle and brain. The specially designed beverage provided ingredients that previous studies have shown are associated with improved physical cognitive function.

Fertility

Fertility Apps failed 80% women during lockdown: Gyno (New Kerala: 20201020)

<https://www.newkerala.com/news/2020/183962.htm>

Thirty-four-year-old Sonali admired how precise the ovulation calculators are in predicting their menstruation cycles, a piece of knowledge that can also act as a natural barrier to pregnancy, something she was looking for.

However, after she started using it, Sonali became pregnant.

Riya, 27, wanted to use the lockdown period to start a family and used an app to track her ovulation, but she failed to conceive in the last six months. Later, she was diagnosed with polycystic ovarian syndrome (PCOS).

Sonali and Riya are among the 80% women who tracked their ovulation via fertility apps in order to conceive or dodge the pregnancy, but failed, according to the estimate shared by fertility expert Gauri Agrawal. She runs an IVF centre in New Delhi and aggregated the estimate from the patients she consulted in the lockdown period.

"Cases like these are not rare, in fact in the past few years, the growing dependence on information found online have further complicated the matter.

"About 80 per cent women in the lockdown period have complained to me that they followed such calculations but failed to conceive due to misleading results.

"With so many websites promising ovulation cycles, it is difficult to ascertain the veracity of the results due to which missed targets are becoming a common phenomenon," she said.

Agrawal said that calculating ovulation is important while planning or dodging a pregnancy. Besides, it keeps a check on ovulation symptoms such as spotting, tenderness in breasts, abdominal cramps or bloating, or increased sex drive. However, dependence on the apps for this could give misleading results.

"Fertility apps and ovulation calculators are used frequently by menstruating women of all ages for both getting pregnant as well as a means to avoid pregnancy naturally.

"However, the erratic nature of these tools may prevent them from achieving desirable results," she added.

Agrawal advised caution against using these apps and calculators and recommended to verify the results with a physical source such as an ovulation prediction kit or a doctor.

"One can never explain the parameters judged and the process followed by these apps and online calculators to derive conclusions. Women should not use fertility apps during the pandemic simply because they are too wary to visit their doctor. It is advisable to verify the results with an ovulation prediction kit or consult a doctor, even if it is through teleconsultation," she said.

In 2018, a study found that the accuracy of prediction by apps monitoring menstrual cycle was no better than 21 per cent. However, the study also found that such apps and calculators could help increase the woman's awareness about her menstrual cycle that averages between 28-32 days.

While most women ovulate between Day 11 and Day 21, with beginning with the first day of the last menstrual period as day 1, many, despite having regular periods and a regular cycle, may not ovulate due to various factors such as hormone problems.

"Women must keep in mind that since each human body is different physiologically, there can never be one solution to its problems. Being home to avoid getting infected many have prompted many women to plan natural pregnancy, depending on the results these apps and calculators show.

"However, causes of infertility, such as poor amount and quality of sperm, blocked fallopian tubes, or advanced age, cannot be fixed with an app or calculator. This makes seeing a physician to discuss birth control options and family planning a must," Agrawal added.

Vaccine (Hindustan: 20201020)

https://epaper.livehindustan.com/imageview_392352_86191508_4_1_20-10-2020_3_i_1_sf.html

ग्रैंड चैलेंजेस की बैठक में प्रधानमंत्री बोले, लॉकडाउन से संभले हालात

वैक्सीन के अगले चरण में देश: मोदी

नई दिल्ली | एजेसी

प्रधानमंत्री नरेंद्र मोदी ने सोमवार को कहा कि कोरोना संक्रमण का टीका विकसित करने के मामले में हम अग्रिम मोर्चे पर हैं और इनमें से कुछ तो एडवांस स्टेज (अग्रिम चरण) में हैं।

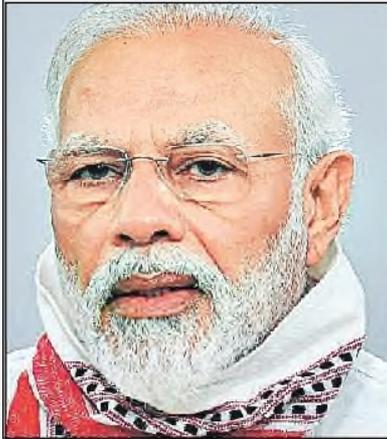
स्वास्थ्य समस्याओं के हल पर चर्चा के लिए आयोजित ग्रैंड चैलेंजेस की वार्षिक बैठक को वीडियो कॉन्फ्रेंस से संबोधित करते हुए प्रधानमंत्री ने कहा कि आज भारत में कोरोना संक्रमण के मामलों में कमी आई है और इससे ठीक होने की दर 88 प्रतिशत तक पहुंच गई है। ऐसा इसलिए संभव हो सका क्योंकि भारत ने सबसे पहले लॉकडाउन लगाया। लोगों को मास्क लगाने के लिए प्रेरित किया।

कई प्रयास किए : प्रधानमंत्री मोदी ने कहा कि भारत ने स्वच्छता बढ़ाने और शौचालयों की संख्या बढ़ाने समेत अनेक प्रयास किए हैं जो बेहतर स्वास्थ्य देखभाल प्रणाली में योगदान दे रहे हैं।

विज्ञान में निवेश जरूरी : मोदी ने कहा कि भविष्य की चुनौतियों से निपटने के लिए विज्ञान और इनोवेशन यानी नवाचार में पहले से ही निवेश करना होगा। समाज का भविष्य विज्ञान और नवाचार में निवेश से ही आकार लेगा। उन्होंने कहा, भविष्य को अदूरदर्शी तरीके से नहीं निर्धारित किया जा सकता।

वैज्ञानिक बड़ी ताकत : भविष्य विज्ञान और इनोवेशन में निवेश करने वालों का होगा लेकिन इसके लिए

03 कंपनियां महामारी की वैक्सीन तैयार करने में जुटी हैं देश में



अग्रणी

प्रधानमंत्री मोदी ने इस मौके पर कहा कि हमारे देश में एक मजबूत और जीवंत वैज्ञानिक समुदाय है। वर्तमान में हमारे पास अच्छे वैज्ञानिक संस्थान भी मौजूद हैं। पिछले कुछ महीनों के दौरान कोरोना महामारी से लड़ने में वे भारत की सबसे बड़ी ताकत रहे हैं।

विज्ञान और इनोवेशन में सही ढंग से निवेश करना होगा। तभी हमें सही समय पर इसका लाभ मिल सकता है।

40 देश प्रतिभागी : सम्मेलन में 40 देशों के लगभग 1,600 दिग्गज शिरकत कर रहे हैं। ग्रैंड चैलेंजेस 15 वर्षों से स्वास्थ्य और विकास के क्षेत्र में चुनौतियों

88 फीसदी तक पहुंच चुकी है कोरोना को मात देने वालों की दर

“ कोरोना संक्रमण का पता लगाने के लिए भारत ने प्रभावी तरीके से काम किया और रैपिड एंटीजन जांच शुरू करने वाले पहले देशों में शुमार रहा था। हम यहीं रुकने वाले नहीं हैं। हम टीका वितरण का तंत्र भी तेजी से विकसित करने में जुटे हुए हैं।

-नरेंद्र मोदी, प्रधानमंत्री

आयोजन

19 से 21 अक्टूबर तक चलने वाले इस सम्मेलन का आयोजन वैश्विक स्वास्थ्य समस्याओं को हल करने में वैज्ञानिक सहयोग के लिए हो रहा है। इसमें महामारी के बाद सतत विकास लक्ष्यों की प्रगति के उपायों पर चर्चा होनी है। इसमें प्रख्यात वैज्ञानिक, नेता और शोधकर्ता शामिल हो रहे हैं।

का समाधान करने में नवाचार के क्षेत्र में अंतर्राष्ट्रीय सहयोग बढ़ाने के लिए काम कर रहा है। ग्रैंड चैलेंजेस इंडिया की स्थापना जैव-तकनीकी विभाग और बिल एंड मिलिंडा गेट्स फाउंडेशन की साझेदार से 2012 में किया गया था।

➤ चौतरफा सुधार पेज 11

संकट: दिल्ली में कोरोना के 22570 सक्रिय मरीज

नई दिल्ली | वरिष्ठ संवाददाता

दिल्ली में प्रदूषण के साथ कोरोना पीड़ितों की मौत का आंकड़ा भी बढ़ रहा है। स्वास्थ्य विभाग के मुताबिक, सोमवार को दिल्ली में 31 कोरोना पीड़ितों की मौत हो गई। दिल्ली में अब तक 6040 कोरोना के मरीजों की मौत हो चुकी है। दिल्ली के स्वास्थ्य विभाग के मुताबिक, सोमवार को कुल 2154 नए मरीजों की पुष्टि हुई। इसके साथ ही दिल्ली में कोरोना संक्रमितों का कुल आंकड़ा 333171 हो गया है।

वहीं, सोमवार को 2845 मरीजों को छुट्टी दी गई, जबकि 31 मरीजों की मौत हो गई। दिल्ली में अब तक 304561 मरीज ठीक हो चुके हैं,

जबकि 6040 मरीजों ने दम तोड़ दिया है। दिल्ली में कोरोना से मृत्युदर 1.81 फीसदी है। विभाग के अनुसार, दिल्ली में कोरोना के सक्रिय मरीजों की संख्या 22,570 हो गई है। इनमें से दिल्ली के विभिन्न अस्पतालों में 5064 मरीज भर्ती हैं, जबकि कोविड केयर सेंटर में 891 और कोविड मेडिकल सेंटर में 297 मरीज भर्ती हैं।

विभाग के अनुसार, होम आइसोलेशन में 14164 और वंदेभारत मिशन के तहत आए 904 मरीज भी आइसोलेशन में हैं। विभाग के अनुसार, दिल्ली में रविवार को आरटीपीसीआर और अन्य मामलों से 10765 और रैपिड एंटीजन के माध्यम से सिर्फ 25,680 टेस्ट हुए।

