



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DA
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Vaccine

Drug Controller permits phase 2, 3 trials on Covishield vaccine candidate; Chandigarh PGI among 17 trial sites (The Tribune: 2020803)

<https://www.tribuneindia.com/news/health/drug-controller-permits-phase-2-3-trials-on-covishield-vaccine-candidate-chandigarh-pgi-among-17-trial-sites-121566>

The vaccine recently showed promising results in phase 1 trials in the UK

Drug Controller permits phase 2, 3 trials on Covishield vaccine candidate; Chandigarh PGI among 17 trial sites

The design says every healthy human volunteer for the trial will be given two doses — the second one at a duration of four weeks.

In less than a month after the Serum Institute applies to the Drug Controller General of India for permission to conduct phase 2 and 3 clinical trials of the Oxford University-Astra Zeneca vaccine candidate Covishield, the apex regulator has granted the permission.

The permission was given on Sunday after Adar Poonawala led Serum Institute satisfies certain requirements the drug Controller sought earlier this week in the design of the proposal.

PGI in Chandigarh is among the trial sites listed in the study, which will involve administration of the vaccine to 1,600 people healthy adults across trials at 17 sites.

Other sites include AIIMS in Delhi, ABJ Medical College in Pune, Rajendra Memorial Research Institute of Medical Sciences (RMRIMS) in Patna, AIIMS in Jodhpur, Nehru Hospital in Gorakhpur, Andhra Medical College in Visakhapatnam and JSS Academy of Higher Education and Research in Mysore.

The design says every healthy human volunteer for the trial will be given two doses — the second one at a duration of four weeks.

If the first is administered today the second will be administered at day 29.

Then immunogenicity data will be assessed. The vaccine recently showed promising results in phase 1 trials in the UK and did not present any serious adverse side effects.

Its safety was determined in phase 1 trials. Phase 2 and 3 trials are done on a larger human population to see if the vaccine produces the required protections against COVID-19 in

N95 masks eliminates coronavirus

Moist heat treatment of N95 masks eliminates coronavirus: Study (The Tribune: 2020803)

<https://www.tribuneindia.com/news/health/moist-heat-treatment-of-n95-masks-eliminates-coronavirus-study-121219>

Researchers believe the process could be used in hospitals and long-term care facilities

Moist heat treatment of N95 masks eliminates coronavirus: Study

According to the study, moist heat treatment of masks for 60 minutes at 70 degrees Celsius in a humid condition did not damage their structure or affect function.

Scientists have found that moist heat treatment of N95 masks eliminates the novel coronavirus which causes COVID-19, an advance which could allow reuse of these scarce resources in hospitals and long-term care facilities.

According to the study, published in Canadian Medical Association Journal (CMAJ), moist heat treatment of masks for 60 minutes at 70 degrees Celsius in a humid condition did not damage their structure or affect function.

“A single heat treatment rendered SARS-CoV-2 undetectable in all mask samples,” the scientists, including those from the University of Toronto in Canada, wrote in the study.

“This low-cost reprocessing strategy can be applied 10 times without affecting the mask’s filtration, breathing resistance, fit and comfort, and thus may help to alleviate the global shortage during the COVID-19 pandemic,” said study co-author Gregory Borschel from The Hospital for Sick Children (SickKids) in Toronto, Canada.

In the study, the researchers tested four common models of N95 masks at various temperatures and humidity levels to determine whether the virus could be detected on the treated masks.

They assessed masks subjected to multiple cycles of thermal disinfection for structural integrity using powerful microscopes, and for protective functions using standards of the US National Institute for Occupational Safety, and Health for particle filtration efficiency, breathing resistance and respirator fit.

They also analysed fibre samples for structural integrity and assessed function of the masks after treatment with heat.

“After 10 disinfection cycles, masks maintained fibre diameters similar to untreated masks and continued to meet standards for fit, filtration efficiency, and breathing resistance,” the study noted.

The researchers believe the process could be used in hospitals and long-term care facilities with commonly available equipment to mitigate the depletion of N95 masks.

“Thermal disinfection of N95 masks may provide a low-cost, effective method for regions with fewer resources to extend their supply of these critical resources, thereby protecting vulnerable front-line workers from job-related risk of infection,” Borschel said.

BCG vaccination

Mandatory BCG vaccination linked with slower Covid-19 growth (The Tribune: 2020803)

<https://www.tribuneindia.com/news/health/mandatory-bcg-vaccination-linked-with-slower-covid-19-growth-121159>

Countries with mandatory BCG vaccination until at least the year 2000 tended to exhibit slower infection and death rates during the first 30 days of the outbreak.

Adding to the growing evidence that early BCG vaccination may be helpful in taming the Covid-19 spread, scientists now claim that countries with mandatory BCG vaccination until at least the year 2000 tended to exhibit slower infection and death rates during the first 30 days of the outbreak.

By applying a statistical model based on their findings, the researchers further estimated that only 468 people would likely have died from Covid-19 in the US as of March 29 - which is 19 per cent of the actual figure of 2,467 deaths by that date - if the US had instituted mandatory BCG vaccination several decades ago.

Martha Berg, the study's lead author from University of Michigan (U-M) and colleagues focused on changes in the growth rates of Covid-19 cases and deaths, while controlling for variables including diagnostic test availability, median age, per capita GDP, population size and density, net migration rate, and various cultural differences such as individualism.

Their findings suggest that national policies for universal BCG vaccination can be effective in the fight against Covid-19 - an association that merits clinical investigation.

"Available evidence demonstrates that BCG vaccination, typically given at birth or during childhood to prevent tuberculosis, can also help strengthen immunity against various other

infectious diseases - perhaps including Covid-19," the authors wrote in a paper published in the journal Science Advances.

To reach this conclusion, Berg and colleagues analyzed the day-by-day rate of increase of confirmed cases in 135 countries and deaths in 134 countries in the first 30-day period of each country's outbreak.

Mandatory BCG vaccination correlated with a flattening of the curve in the spread of Covid-19, the analysis showed.

However, the authors caution that their results do not portray BCG as a "magic bullet." They found substantial variation in Covid-19 growth rates even among BCG-mandated countries, suggesting that additional societal variables likely have an effect on mandatory BCG vaccination's effect on the spread of the disease.

In India, the Tamil Nadu government last month allowed a pilot project to study if the BCG vaccine will help reduce the mortality rate among elderly Covid-19 patients. The National Institute for Research in Tuberculosis will start the pilot programme.

WHO

WHO expects long-term response efforts against COVID-19(The Tribune: 2020803)

<https://www.tribuneindia.com/news/health/who-expects-long-term-response-efforts-against-covid-19-121137>

"The pandemic is a once-in-a-century health crisis, the effects of which will be felt for decades to come"

WHO expects long-term response efforts against COVID-19

The ongoing COVID-19 pandemic still constitutes a public health emergency of international concern (PHEIC)

The ongoing COVID-19 pandemic still constitutes a public health emergency of international concern (PHEIC), and long-term response efforts are needed given an anticipated lengthy duration of the pandemic, the World Health Organization (WHO) said.

The WHO Emergency Committee on COVID-19, convened by WHO Director-General Tedros Adhanom Ghebreyesus under the International Health Regulations (IHR), held its fourth meeting on Friday (July 31), WHO said in an online statement released on Saturday, Xinhua news agency reported.

The committee unanimously agreed that the outbreak still constitutes a PHEIC, and noted the importance of "sustained community, national, regional, and global response efforts," said the statement.

Tedros had declared a PHEIC, WHO's highest level of alarm under IHR, on Jan. 30 at a time when there were fewer than 100 cases and no deaths outside China. He issued the committee's advice to States Parties as Temporary Recommendations under the IHR, according to the statement.

"The pandemic is a once-in-a-century health crisis, the effects of which will be felt for decades to come," Tedros told the committee in his opening remarks on Friday.

"Many countries that believed they were past the worst are now grappling with new outbreaks. Some that were less affected in the earliest weeks are now seeing escalating numbers of cases and deaths. And some that had large outbreaks have brought them under control," Tedros said.

The Emergency Committee advised WHO to continue to mobilize global and regional multilateral organizations and partners for COVID-19 preparedness and response, to support member states in maintaining health services, while accelerating the research and eventual access to diagnostics, therapeutics, and vaccines.

The committee advised countries to support these research efforts, including through funding, and to join in efforts to allow equitable allocation of diagnostics, therapeutics and vaccines by engaging in the Access to COVID-19 Tools (ACT) Accelerator among other initiatives.

The committee also advised countries to strengthen public health surveillance for case identification and contact tracing, including in low-resource, vulnerable, or high-risk settings and to maintain essential health services with sufficient funding, supplies, and human resources.--IANS

Covid-19: What you need to know today (The Hindustan Times: 2020803)

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

India's home minister, and the second most important and powerful man in the country has contracted the coronavirus disease (Covid-19). Amit Shah tweeted out the information himself, and said that while his health is fine, he is being admitted to a hospital on the recommendation of doctors. He also asked everyone who met him in the past few days to get themselves tested. This writer wishes Shah a rapid recovery, but his infection is significant because it highlights both the prevalence of the disease in the Capital, and the risks involved in what would have been considered normal before the pandemic.

First, almost one in four people in Delhi show antibodies to the coronavirus disease, according to a recent survey of all of Delhi's 11 districts, indicating that they have been exposed to it in the past (and infected, perhaps without showing any symptoms at all). It also means that these people have immunity against the disease, at least in the short-term — perhaps as long as their

antibodies last, and maybe longer, according to Swedish research that shows that T-cells, which fight infected cells and have long memories, are there in roughly twice the number of people in whom antibodies are found.

The fact that Shah has been infected points to the fact that the disease is all around us and that anyone could get infected at any time. This is true for Mumbai as well, where another Amit (Amitabh Bachchan) was infected with the Sars-CoV-2 virus that causes Covid-19 (he was discharged from a hospital on Sunday), and where a limited sero survey (antibody test) in three of the city's 23 wards showed that around 40% of the people in the city have been exposed to the disease. Caveat: this survey is not as representative as the Delhi one.

A high prevalence of antibodies in the population may be good from the perspective of building immunity (and achieving herd immunity, the level of infection in a population that makes it difficult for the virus to travel easily from one person to another), but it is still dangerous for the old, infirm, and those with comorbidities.

Second, people who continue to go about their work, even if they take adequate precautions, stand a high chance of getting infected. Shah continued to meet people, and, with Delhi's infections peaking in June, got involved in the Capital's fight against the disease — even visiting the LNJP Hospital, Delhi's main facility to treat Covid-19 patients. It isn't clear how Shah got infected — contrary to what the health ministry continues to claim, the disease has been in community transmission mode for a few months now, so it is difficult to trace the chain of infection. Shah also attended a cabinet meeting last week — the one in which the new National Education Policy was passed — which means everyone else who attended that meeting needs to isolate themselves and also go in for a test.

India is currently in a phase the government calls Unlock 3.0, referring to more activities being allowed (and the scrapping of a night-time curfew), but Shah's infection indicates that it isn't going to be business-as-usual anytime soon. Participating in social activities, for work or for pleasure, increases the risk of contracting the infection. Wearing masks (all the time one is outside or at work), and practising social distancing and hand hygiene is the only way to prevent being infected.

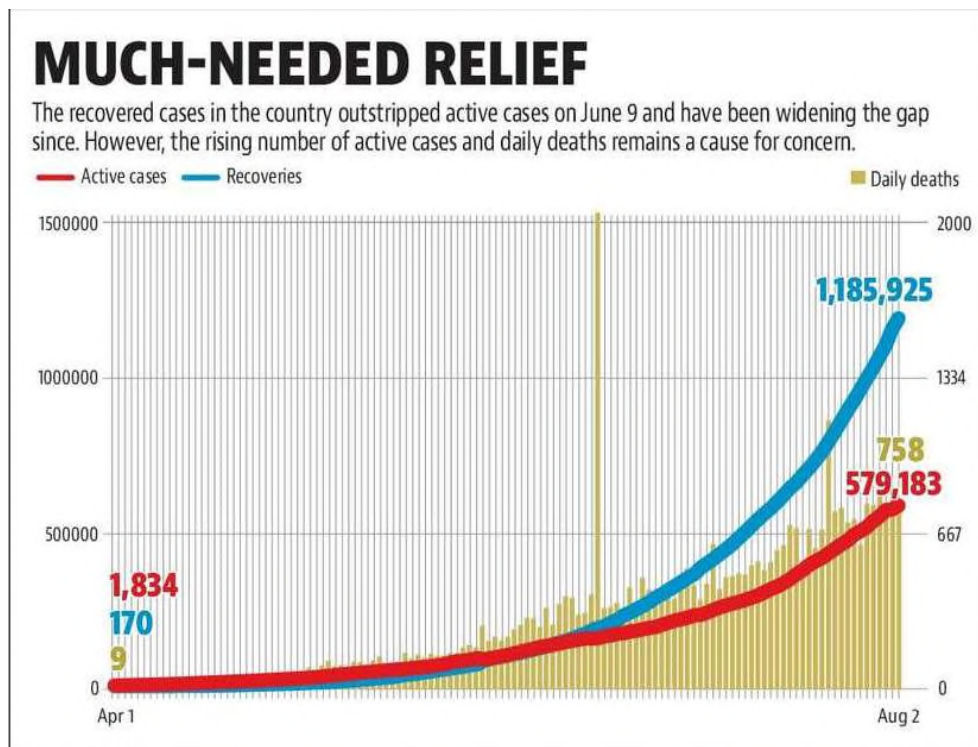
Interestingly, gyms and public transport, including metros, in countries and cities where these are functioning, have so far not been linked to any major clusters of infection — the first, according to a Norwegian study and the second, according to a recent article in the New York Times — but this writer believes that visiting a gym or taking a metro will come with risks for at least some time.

Those of us who can avoid the risk altogether — through social isolation, WFH (work from home), video-conferencing — should, and those of us who cannot (I suspect Shah belongs to this category), should take adequate precautions and hope the mathematics of chance is in our favour.

Silver lining as Covid-19 recoveries

Silver lining as Covid-19 recoveries see big spike DATA: India's fatality rate dips while recoveries accelerate, 51,845 reported on Saturday (The Hindustan Times: 2020803)

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



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New Delhi : The number of people who have recovered from Covid-19 in India crossed the 1.1 million mark over the weekend when over 90,000 people were declared free of the virus, the

highest numbers recorded yet over two days in what is being seen as a sign of the country's disease mitigation strategy being effective in avoiding a high number of fatalities.

HT's dashboard of Covid-19 data from across the country showed that 51,845 recovered on Saturday and 40,449 recovered on Sunday, bringing the proportion of recoveries to 65.76%. As on Sunday, of the 1,803,267 infections in all, 38,159 people have succumbed to the viral disease, translating to a case fatality ratio (CFR) of 2.12%. As of Sunday night, the doubling rate of cases – the number of days it takes for infections to double – across the country is 21.2 days.

Coordinated implementation of “effective containment strategy, aggressive testing and standardised clinical management protocols” resulted in a consistent trend of rising recovery rate and progressively reducing CFR, said a statement by the Union health ministry on Sunday.

The trends indicate India's response to the pandemic is “improving at various levels of care including at the societal level as well as in hospitals,” said Niti Aayog member VK Paul, who heads the national task force on Covid.

“It suggests that we have learnt to take care of our positive cases; we have learnt how soon to act and what works and what doesn't. We are able to provide more organised and systematic treatment clinically. Those involved in Covid-19 management are learning by the day by reading and from each other,” Paul added.

To be sure, India's recovery rate is expected to eventually soar to over 90% — since current trends indicate the final fatality rate could lie between 2-3% — once the outbreak nears its end. For instance Germany, which has had over 200,000 infections but at present has around 8,300 active cases, has a recovery rate of 92%.

A look at infection, recovery and fatality rates from the top 10 countries with the highest cases shows only the United States — at around 50% — has a lower rate of recovery than India.

In India, the 579,183 active cases (as of August 1) account for 32.12% of the total case load. At the current rate in which new cases are reported, active cases are doubling in 27.3 days, and new hot spots emerging in three large-population states of Andhra Pradesh, Karnataka and West Bengal, threatens to bring this number down – thereby accelerating the speed at which the outbreak grows.

The current CFR also masks the potential fatalities that could be recorded from among the over 500,000 active cases at present. According to a study in Lancet based on case progression among patients in China, it takes around 17 days for people who develop critical Covid-19 infections to succumb to the illness.

The 38,159 deaths seen till August 2 will thus correspond, roughly, to the 1,004,652 cases seen 17 days ago on July 16. This brings India's lagged case fatality ratio to 3.8% -- a number consistent with what has been seen in countries that have largely been able to keep its health care systems from being overwhelmed.

Italy and Spain, two European nations that were hit hard in the second peak of the global pandemic and accounted for larger populations of more vulnerable people, have a CFR of over 14% and 8%, respectively.

“India's mortality rate is low; under 3%, which means around 97-98% of those who get infected will eventually recover. The recovery rate is also linked with the case load; if the case load is higher, the recovery will take longer as it will also include higher percentage of serious cases,”

said a senior epidemiologist with the Indian Council of Medical Research (ICMR), requesting not to be named as he is not authorised to speak to media.

The official said the numbers also reflect the accuracy in reporting, which could vary between states.

“If the number of positive cases goes up then recovery rate will automatically slow down, and that explains why states like Maharashtra, Karnataka, Kerala, etc, have low recovery rate. Also, for states and UTs having higher recoveries, it could also indicate fewer new infections being reported on a daily basis in comparison,” he added.

Another set of epidemiologists say that it could also mean in certain regions there probably are fewer severely ill cases, leading to faster recovery, which needs to be analysed.

“Looks like more number of discharges have taken place in the last two to three weeks. And most of these can be asymptomatic too, so might discharge faster. The pattern needs to be studied if it’s area specific and what could be the cause,” says Dr Giridhara Babu, professor, epidemiology, Indian Institute of Public Health, Public Health Foundation of India.

Out of the total active cases currently, 0.28% patients are on ventilator, 1.61% require intensive care unit (ICU) support, and 2.32% are on oxygen support – trends that officials said reflected the level of preparations.

“What has also worked for India is that we have been prepared well in advance that has ensured our health system is not overwhelmed, and there is buffer, cushion and headroom that helps in saving lives. Faster recoveries are also because of increased testing because of which we are able to detect cases early and act accordingly,” he added.

The country’s maximum case load, which is about 80% of the cases, is restricted to 50 districts out of about 740 total districts.

Experts said this could also indicate that the way Covid is affecting Indians – the disease has been established to hit countries with older populations harder – may be different from the way it has in countries like Italy and Spain.

“This is a good sign that people are getting better and our mortality is low. Most positive cases do not require hospitalisation, and those needing intensive care is actually a minuscule number. Most people in hospitals have moderate disease with good chances of recovery. The need is to take care of our old and vulnerable population with co-morbidities that is at high risk of developing severe illness,” said Dr Rommel Tickoo, senior consultant, department of internal medicine, Max Healthcare.

The government is now shifting its focus to emerging hot spots and rural pockets, Niti Aayog’s Paul said.

“Rural India needs special focus because if we have advantages like low population density and better surveillance... there are also challenges like limited access to health care facilities [in these regions]. The long distances can work to our disadvantage, which is why it is important to ensure rural areas are not severely affected. Right now we are managing fine, and watching the situation closely,” he added.

New Cases (The Asian Age: 2020803)

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=15018389>

■ Delhi records 961 fresh cases, death toll reaches 4,004 ■ Total tally at 1,37,677 Lowest single-day Covid deaths in city since July 1

AGE CORRESPONDENT
with agency inputs
NEW DELHI, AUG. 2

Delhi registered 15 deaths due to the novel coronavirus in the last 24 hours, the lowest number of fatalities in a single-day since July 1.

The number of coronavirus cases in Delhi rose to 1,37,677, while the death toll mounted to 4,004 on Sunday.

On July 26, there were 21 deaths due to the pathogen, the previous lowest fatality count since July 1.

The corresponding figures on successive days were — July 27 (26), July 28 (28), July 29 (25), July 30 (29) and July 31 (27) and August 1 (26).

On June 23, Delhi had recorded the highest single-day spike of 3,947 cases so far. There were 613 Covid-19 cases on July 27, the lowest in the last two months. It, however, increased to 1,056 the next day and slightly declined to 1,035 on July 29, only to rise to 1,093 and 1,195 on July 30 and 31 respectively.

The Delhi government has been asserting that a multi-pronged strategy of aggressive testing, home isolation and other factors had helped keep the cases from surging, as it was happening in June.

However, chief minister



Vehicles ply at Rajpath during Unlocked 3 in New Delhi on Sunday.

— PTI

Arvind Kejriwal has asked people to not be complacent and take adequate precautions.

"Deaths in Delhi come down to 15. Less than 1,000 cases. Let us all keep working hard to ensure that the downward trend continues", Mr Kejriwal tweeted.

Delhi's Covid tally rose to over 1.37 lakh on Sunday with 961 new cases, authorities said.

A total of 1,23,317 patients have recovered, migrated or been discharged, while the number of active cases stood at 10,356, of which 5,663 patients are under home isolation.

Fifteen people suc-

cumbed to Covid-19 in the last 24 hours, taking the death toll to 4,004, the authorities said.

With 961 fresh cases, the infection tally has risen to 1,37,677.

A total of 4,289 RT-PCR and 8,441 rapid antigen tests were conducted in the city in the last 24 hours, the authorities said.

The number of Covid tests conducted in Delhi on Saturday was less because of Id-ul-Zuha.

So far, 10,63,669 tests have been conducted — 55,982 tests for a population of 10 lakh, according to a health bulletin.

Over the last week, the

number of new cases has grown by less than one per cent every day.

The recovery rate of Covid-19 patients has increased to over 89 per cent in Delhi. The positivity rate in the last 24 hours was 7.54 per cent, the authorities said.

Meanwhile, chief minister Arvind Kejriwal reviewed the status of containment zones in Delhi. The number of containment zones has been scaled down from 715 on July 27 to 496 on July 31.

The move has reduced the number of people contained from 3,48,099 on July 27 to 1,06,211 on July 31.

'1/4 of samples to be taken from people in 50s, above age group'

New Delhi, Aug. 2: The new sero-prevalence survey in the national capital will exclude those who were part of the previous exercise and 25 per cent of the fresh samples in all districts will be taken from persons aged 50 and above, according to a standard operating procedure prescribed for it.

As per the SOP for the survey that began on Saturday, each sample collection team is to collect 25-40 samples per day.

"All districts are to ensure that out of total number of samples, 25 per cent are of those younger than 18 years of age, another 50 per cent are in the age group of 18-49 years and remaining 25 per cent of those in the age group of 50 years or more," reads the SOP prescribed by the Delhi's directorate general of health services. The fresh exercise is being undertaken for a comprehensive assessment of the Covid situation in Delhi, but due to Id holiday not many samples could be collected on Saturday, officials said.

Hence it has been decided to extend the survey till August 7, a senior official

ALL DISTRICTS are to ensure that out of total number of samples, 25% are of those younger than 18 years of age, another 50% are in the age group of 18-49 years and remaining 25 per cent of those in the age group of 50 years or more

said on Saturday.

Originally a five-day exercise from August 1-5, it will span all 11 districts of Delhi and cover various demographic segments.

Systematic Random Sampling methodology will be used for collection of samples with mandatory exclusion of individuals or households selected during the last sero survey conducted in June-July, the SOP says. The survey began with samples collection from various districts, including North Delhi and Northwest Delhi, to start with on Saturday.

Sources said six districts are to be covered on Sunday. According to the survey's standard operating procedure, "selection bias must be avoided" and

any individual or household that was included in the previous round of sero-survey "must be excluded".

Teams in the field will collect the samples and will transport the samples the same day to the designated laboratories for processing. Sample collection must be completed latest by 2 pm so that samples reach the designated labs latest by 4 pm, reads the SOP. A senior government official on Saturday said 15,000 samples would be collected as part of this exercise, spanning different areas and age groups. Representative samples will be taken from all the 11 districts.

A sero-prevalence survey involves testing the blood serum of individuals to check for the prevalence of antibodies against infection. The last sero-prevalence survey was conducted by the Delhi government in association with the National Centre for Disease Control (NCDC) from June 27 to July 10.

It had found that around 23 per cent of the people surveyed had been exposed to the novel coronavirus, the central government had said.

— PTI

Alzheimer's disease

Renegade protein interrupts brain cell function in Alzheimer's disease, study reveals (New Kerala: 2020803)

<https://www.newkerala.com/news/2020/136604.htm>

Dozens of molecules may tangle up with rogue bundles of tau, a protein that normally gives nerve fiber structure to cause brain cell damage that contributes to neurodegenerative diseases, according to a recent study.

Neuroscientists have previously found that tau can become toxic when extra chemical molecules accumulate with its structure in the brain, causing it to form tangles of protein that destroy surrounding tissue.

Led by researchers from NYU Grossman School of Medicine, the new study analysed the makeup of such tangles and found 12 proteins that they say have not before been tied to both tau and Alzheimer's disease.

They also uncovered several dozen other proteins that appear in the latest stages of the disease as well as in the earliest phases of dementia.

"Our findings expand our understanding of the molecular interactions that drive Alzheimer's and other brain-damaging diseases related to misbehaving tau proteins," says study co-lead author Eleanor Drummond, PhD, a research assistant professor in the Department of Neurology at NYU Langone Health.

"Now that we have better insight into possible 'key players' in neurodegeneration, we may have clearer targets for potential therapies," says co-lead author Geoffrey Pires, a doctoral student in neurology at NYU Langone.

An estimated 5 million Americans are living with Alzheimer's, a progressive disease that affects mostly those over 65 and interferes with memory, language, and decision making. Currently, there are no effective treatments or prevention strategies for Alzheimer's. Experts have long linked it to a buildup of extra phosphate molecules on tau proteins. However, how these tangles damage neurons and what other proteins are involved in the development of Alzheimer's signature bundles have been poorly understood, says Drummond.

The new study, publishing online in the journal *Brain*, provides what Drummond and her colleagues say is the largest overview to date of proteins present in these tau tangles.

For the investigation, the research team analysed donated brain tissue samples from 12 men and women with Alzheimer's disease. After separating the tau knots from the surrounding tissue, the researchers examined the bundles to identify the many proteins tangled within.

According to the findings, the tangles were composed of 542 different proteins in total, some of which are involved in essential processes within cells, such as energy production (vacuolar-

ATPase subunit ATP6V0D1), the reading of genetic material (RNA binding protein HNRNPA1), and cell breakdown and digestion (PSMC 1 through 5). These results provide clues to how the tangles lead to neuron death, says Drummond.

"Alzheimer's has been studied for over a century, so it is eye-opening that we are still uncovering dozens of proteins that we had no idea are associated with the disease," says study senior author Thomas Wisniewski, MD, the Gerald J. and Dorothy R. Friedman Professor in the Department of Neurology at NYU Langone.

Wisniewski, also a professor in the departments of Pathology and Psychiatry at NYU Langone, plans next to investigate the newly identified proteins in tissue samples of people with other tau-linked neurodegenerative diseases, such as Pick's disease and chronic traumatic encephalopathy, as well as other forms of dementia.

Renegade protein interrupts brain cell function in Alzheimer's disease, study reveals
Recommend This Article:

Enzyme

Researchers trace enzyme behind body odour (New Kerala: 2020803)

<https://www.newkerala.com/news/2020/136598.htm>

: A team of researchers has now found a unique enzyme responsible for the pungent characteristic smell we call body odour or BO.

Researchers from the University of York have previously shown that only a few bacteria in your armpit are the real culprits behind BO. Now the same team, in collaboration with Unilever scientists, has gone a step further to discover a unique "BO enzyme" found only within these bacteria and responsible for the characteristic armpit odour. The study was published in the journal Scientific Report.

This new research highlights how particular bacteria have evolved a specialised enzyme to produce some of the key molecules we recognise as BO.

Co-first author Dr Michelle Rudden from the group of Prof Gavin Thomas in the University of York's Department of Biology said "Solving the structure of this 'BO enzyme' has allowed us to pinpoint the molecular step inside certain bacteria that makes the odour molecules. This is a key advancement in understanding how body odour works and will enable the development of targeted inhibitors that stop BO production at the source without disrupting the armpit microbiome."

Your armpit hosts a diverse community of bacteria that is part of your natural skin microbiome. This research highlights *Staphylococcus hominis* as one of the main microbes behind body odour.

Furthermore, the researchers say that this "BO enzyme" was present in *S. hominis* long before the emergence of *Homo sapiens* as a species, suggesting that body odour existed prior to the evolution of modern humans and may have had an important role in societal communication among ancestral primates.

This research represents an important discovery for Unilever R and D, made possible by its long-standing academic-industry collaboration with the University of York. Unilever co-author Dr Gordon James said "This research was a real eye-opener. It was fascinating to discover that a key odour-forming enzyme exists in only a select few armpit bacteria - and evolved there tens of millions of years ago."

Lethal brain cancer

Researchers discover new drug targets for lethal brain cancer (New Kerala: 2020803)

<https://www.newkerala.com/news/2020/136567.htm>

With the help of a mouse model, a team of researchers has now discovered more than 200 genes with novel and known roles in glioblastoma - the most aggressive type of brain cancer that offer promising new drug targets.

Researchers from the Wellcome Sanger Institute, Addenbrooke's Hospital, and their collaborators engineered a new mouse model to show for the first time how a mutation in the well-known cancer gene, EGFR initiates glioblastoma and works with a selection from more than 200 other genes to drive cancer.

The results, published today in *Genome Biology* present the first mouse model of its kind, which is available for the research community to advance new treatments for this lethal form of brain cancer.

Glioblastoma is an aggressive form of brain cancer. It is treated with surgery followed by chemotherapy or radiotherapy, however, glioblastoma cells can evade treatment and tumours return. The prognosis is poor - the average patient survives for 12-18 months following diagnosis.

New, targeted treatments and immunotherapies are currently being developed to help glioblastoma patients. It is still not known exactly why glioblastomas begin to grow.

In a new study, researchers from the Wellcome Sanger Institute and their collaborators created a new mouse model with glioblastoma to investigate which genes were implicated in cancer.

The model showed that the well-known cancer gene, EGFR (epidermal growth factor receptor) can alone initiate the brain tumours to grow in mice, resulting in tumours that were highly representative of human glioblastomas.

Dr Imran Noorani, a corresponding author previously from the Wellcome Sanger Institute, and now based at Addenbrooke's Hospital and the University of Cambridge, said "We have created a new mouse model for studying the lethal human brain cancer, glioblastoma. For the first time, we showed that the familiar cancer gene, EGFR is capable of initiating glioblastoma and we identified new driver genes, whose potential for therapeutic targeting deserves further exploration."

To identify which genes help EGFR to drive cancer, the team used the PiggyBac transposon technique - a small section of DNA inserted into different parts of the genome to introduce mutations. This revealed more than 200 known and novel mutations in tumour suppressor genes that were working with EGFR to drive brain tumour growth, many of which present new drug targets.

The team compared the results with human genome sequences from glioblastoma patients and uncovered many genetic mutations found in both humans and mice. Human genomic data contains many mutations implicated in glioblastoma, without a clear indication of which specific mutations drive cancer. With the new mouse model, the team were able to narrow down on which mutations drive glioblastoma, which will focus on future drug development.

Professor Allan Bradley, previously Director of the Wellcome Sanger Institute, and now Chief Scientific Officer of Kymab and Professor in the Department of Medicine, University of Cambridge, said "Glioblastoma patients urgently require new, targeted therapies. Unfortunately, glioblastoma tumours can become highly resistant to therapies that target specific molecules, as there are many other genetic drivers that can 'take over' progressing cancer. This new mouse model provides the missing link to translate findings from new potential treatments tested on mice to clinical trials."

Smoking e-cigarettes

Study details effects of smoking e-cigarettes on cardiovascular health (New Kerala: 2020803)

<https://www.newkerala.com/news/2020/136422.htm>

Study details effects of smoking e-cigarettes on cardiovascular health

Sophia Antipolis [France], Aug 2: According to a recent position paper, the use of e-cigarettes doubles the risk of starting to smoke traditional cigarettes in adolescents. The paper also details the effects of devices that look like cigarettes and refillable vaporisers that do not look like cigarettes.

The position paper of the European Association of Preventive Cardiology (EAPC), a branch of the ESC, calls on regulators to protect young people by limiting sales and advertising and banning sweet flavours which teens believe are less harmful. The paper was published today in the European Journal of Preventive Cardiology, a journal of the European Society of Cardiology (ESC).

Research has shown that e-cigarettes raise blood pressure and heart rate, change the artery walls so that they become stiffer and less elastic, and inhibit the function of blood vessels by damaging their lining. Each of these four effects is risk factors for blood clots and fatty build-up inside artery walls which can cause heart attacks. A study last year found a link between e-cigarettes and heart attacks.

On top of the heart effects, the evidence is accumulating that vaping has negative effects on the lungs and is detrimental to the developing foetus during pregnancy. Preliminary research indicates that e-cigarettes could cause cancer.

"Vaping is marketed towards teenagers and the tobacco industry uses celebrities to promote it as being healthier than smoking," said senior author Professor Maja-Lisa Lochen of UiT The Arctic University of Norway, Tromsø.

"Legislation on the marketing and sales of e-cigarettes varies enormously between countries," said Professor Lochen. "Action is urgently needed to halt the growing use in young people. The World Health Organisation (WHO) states that e-cigarettes are harmful to health."

Studies have reported that e-cigarette use in young people has increased from 5% in 2013 to nearly 25% in 2018. Up to 5% of adults use e-cigarettes, with wide variation between countries.

It's not clear whether e-cigarettes can help people quit smoking since studies have produced conflicting results. "When these studies are pooled together it does not show that e-cigarettes are more effective than conventional, well-tested stop smoking methods," said Professor Lochen. "In addition, people who use e-cigarettes for smoking cessation often end up being double consumers of both traditional tobacco cigarettes and e-cigarettes."

"E-cigarettes should only be used for smoking cessation if nothing else has worked and the individual is carefully monitored for adverse effects," she added.

Professor Lochen concluded "E-cigarettes are a relatively new product and the long-term health effects are unknown. Now is the time for politicians and regulators to act - with public health campaigns to increase awareness and legislation to halt uptake in young people."

Heart doctors and researchers recommend- Regulate the advertising of e-cigarettes the same as tobacco to protect young people.- Age verification procedures to prevent adolescents from accessing e-cigarette websites.- Schools to educate children about the negative effects of e-cigarettes.- Public campaigns to raise awareness of adverse effects and prevent initiation of vaping.- Consider for smoking cessation only if conventional methods have failed and individuals are monitored for adverse effects.- Avoid e-cigarettes during pregnancy.

Breastfeeding

Breastfeeding is safe after anaesthesia, say new guidelines (New Kerala: 2020803)

<https://www.newkerala.com/news/2020/136412.htm>

New guidelines published during the World Breast Feeding Week (1-7 August), suggests that breastfeeding is safe after the mother has had anaesthesia, as soon as she is alert and able to feed.

The guidelines were published in the journal Association of Anaesthetists

"The guidelines say there is no need to discard any breast milk due to fear of contamination, since the evidence shows that anaesthetic and non-opioid painkiller drugs are transferred to breast milk in only very small amounts," explain the authors who include Dr Mike Kinsella of the Association of Anaesthetists Safety Committee, based at St Michael's Hospital, Bristol, UK, and colleagues. "For almost all of these drugs, there is no evidence of effects on the breastfed infant."

However, they caution that drugs such as opioids and benzodiazepines should be used with caution, especially after multiple doses and in babies up to 6 weeks old (corrected for gestational age). "In this situation, the infant should be observed for signs of abnormal drowsiness and respiratory depression, especially if the woman is also showing signs of sedation," they explain. "Techniques that reduce opioid usage are preferable for the breastfeeding woman. Local and regional anaesthesia have benefits in this regard, and also have the least interference with the woman's ability to care for her infant."

They also add that codeine should not be used by breastfeeding women following concerns of excessive sedation in some infants, related to differences in metabolism.

More generally, the guidelines say that any women with an infant aged 2 years or younger should routinely be asked if they are breastfeeding during their preoperative assessment so that it can be explained to them that breastfeeding will be safe after their surgery. They say "Where possible, day surgery is preferable to avoid disrupting normal routines. A woman having day surgery should have a responsible adult stay with her for the first 24 hours. She should be cautious with co-sleeping, or sleeping while feeding the infant in a chair, as she may not be as responsive as normal."

They conclude "In summary, the pharmacological aspects of anaesthesia and sedation require little alteration in breastfeeding women. However, supportive care for the woman in the peri-operative period, and accurate advice, will ensure minimal disruption to this important part of childcare."

Environmental chemicals

Study finds exposure to environmental chemicals may disrupt sleep during menopause (New Kerala: 2020803)

<https://www.newkerala.com/news/2020/136361.htm>

A new study has found the possible reason behind sleepless nights with menopausal women. The study states that for menopausal women who have difficulty sleeping, it might be because of chemicals in the environment.

The study based on data from the Midlife Women's Health Study suggests that exposure to various chemicals, such as phthalates, found in hundreds of products used daily, is associated with sleep disruptions in midlife women.

The study results have been published in Menopause, the journal of The North American Menopause Society (NAMS).

Up to 60 per cent of women in the menopause transition experience sleep difficulties. Women who have trouble falling asleep are at greater risk of developing persistent depression that can lead to worse health outcomes, may require more medical care, and increase absenteeism.

Earlier studies have shown that such sleep disruption is the result of decreasing hormone levels. Exposure to endocrine-disrupting chemicals (EDCs), however, is one largely unexplored area that may help to explain the increased prevalence of sleep difficulties in midlife women.

Phthalates are common EDCs that are found in industrial plasticizers and chemical stabilizers. Phthalates increase the performance of everything from food packaging and clothing to cosmetics and children's toys. Personal care products, in particular, represent a major area of exposure.

Although everyone is exposed to phthalates, they appear to concentrate more on women than men. A previous study suggested that increased exposure to phthalates from personal care products significantly increased the risk of hot flashes. Other studies have demonstrated associations between phthalate exposure and the likelihood of waking up at night, as well as the risk of suffering from depression.

Since phthalates are known to modulate the hormones associated with sleep and depression, researchers in this latest study surmised that they may be directly or indirectly associated with sleep in midlife women.

This study, based on data gathered from more than 760 premenopausal and perimenopausal women, suggests that the frequency of sleep disruptions is associated with urinary concentrations of phthalates. It is the first known study to document this association.

The relationship, however, appears complex, because other variables, such as smoking status, have been shown to influence the effect. More research is warranted to fully understand this association, as well as the underlying mechanisms of how hormones and EDC exposure influence sleep, particularly in midlife women.

Study results appear in the article 'Associations of phthalate exposure and endogenous hormones with self-reported sleep disruptions results from the Midlife Women's Health Study.'

"This study raises concerns and additional questions about a possible contribution of phthalates to sleep disturbances in premenopausal and perimenopausal women. Additional research into these endocrine-disrupting chemicals and their interactions with hormones, sleep, and mood in midlife women is needed," said Dr Stephanie Faubion, NAMS medical director.

Study finds exposure to environmental chemicals may disrupt sleep during menopause
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https://epaper.livehindustan.com/imageview_231550_104560332_4_1_03-08-2020_0_i_1_sf.html

बिना रक्त जांच के पीलिया तीन सेकंड में पता चलेगा



अच्छी खबर

नई दिल्ली | मदन जैड़ा

नवजात शिशुओं में पीलिया की जांच अब उन्हें छुए बगैर और बिना ब्लड टेस्ट के हो सकेगी। एक ऐसा उपकरण एजेओ-नियो विकसित किया गया है जो शिशु के नाखून पर प्रकाश की किरणें डालकर रक्त में बिलीरुबिन का स्तर महज तीन सेकंड में बता देता है। जल्द यह उपकरण बाजार में होगा।

कोलकाता के एसएन बोस नेशनल सेंटर फॉर बेसिक साइंसेज के शोधकर्ता प्रोफेसर समीर के पाल की टीम ने इसे विकसित किया है। स्पेक्ट्रोमेट्री तकनीक पर आधारित उपकरण से निकलने वाली एक रोशनी बच्चे के नाखूनों से होकर लौटती है और वह तीन सेकंड में बिलीरुबिन का स्तर बता देती है।

60 फीसदी में खतरा

साठ फीसदी नवजात शिशुओं को जन्म के तुरंत बाद पीलिया होने का खतरा रहता है। कई बार यह गंभीर रूप धारण कर लेता है जिससे मस्तिष्क को क्षति पहुंचने की आशंका रहती है। समय पूर्व जन्म लेने वालों में पीलिया होने का खतरा 70% से भी ज्यादा होता है।

नतीजे सटीक: प्रोजेक्ट में प्रोफेसर पाल के साथ काम कर रहे एनआरएस मेडिकल कॉलेज कोलकाता के शिशु रोग विशेषज्ञ असीम मल्लिक ने बताया कि इसके नतीजे सटीक हैं। इसके आधार पर जांच कर हम बच्चों का उपचार कर रहे हैं। अभी टोटल सीरम बिलीरुबिन टेस्ट होता है। इसमें चार घंटे रिपोर्ट आती है। नवजात में हर 16 घंटे के बाद टेस्ट रिपीट करते हैं ताकि इलाज के फायदे को देख सकें।

Coronavirus (Hindustan: 2020803)

https://epaper.livehindustan.com/imageview_231553_104560952_4_1_03-08-2020_3_i_1_sf.html

सुधार : कोरोना से 12 मई के बाद सबसे कम मौत

नई दिल्ली | वरिष्ठ संवाददाता

दिल्ली में रविवार को कोरोना के मामले में राहत की खबर सामने आई। कोरोना संक्रमण से 15 लोगों की मौत हो गई। यह 12 मई के बाद होने वाली सबसे कम मौत है। बता दें कि 12 मई को 13 लोगों की कोरोना से मौत हुई थी। वहीं, इन मौतों के बाद दिल्ली में

कोरोना से मरने वालों का आंकड़ा चार हजार के पार पहुंच गया है। स्वास्थ्य विभाग के आंकड़ों के अनुसार, रविवार को 961 नए संक्रमण के मामले सामने आए, जिसके बाद संक्रमितों की संख्या 137677 हो गई।

रविवार को जारी आंकड़ों के अनुसार, पिछले 24 घंटे में 1186 लोग ठीक होकर घर लौट गए। स्वस्थ लोगों

की संख्या बढ़कर 123317 हो गई है। इसके साथ ही अब 10356 सक्रिय केस रह गए हैं। रविवार तक 2886 संक्रमित विभिन्न कोरोना अस्पताल में भर्ती थे। कोविड केयर सेंटर में 685 मरीज उपचार करवा रहे हैं और कोविड हेल्थ सेंटर में 161 लोग भर्ती हैं। संक्रमित 5663 लोगों को होम आइसोलेशन में रखा गया है।

8441 की रैपिड एंटीजन जांच :

रविवार को आरटीपीसीआर से 4289 लोगों और 8441 लोगों रैपिड एंटीजन जांच की गई। अब तक दिल्ली में 1063669 लोगों की जांच की गई है। इसमें से रविवार तक 137677 लोग संक्रमित पाए गए हैं। एक लाख लोगों पर 55982 लोगों की जांच की जा रही है। जो कई अन्य राज्यों से ज्यादा है।