Metabolism

Metabolism may play role in recurrent major depression (The Tribune: 20210114)


Metabolism may play role in recurrent major depression

Researchers have found that certain metabolites -- small molecules produced by the process of metabolism -- may be the predictive indicators for persons at risk of recurrent major depressive disorder (rMMD).

The findings, published in the journal Translational Psychiatry, indicated that the accuracy of this prediction was more than 90 per cent.

"This is evidence for a mitochondrial nexus at the heart of depression," said the researcher, Robert K. Naviaux, a professor at University of California in San Diego.

"It's a small study, but it is the first to show the potential of using metabolic markers as predictive clinical indicators of patients at greatest risk -- and lower risk -- for recurring bouts of major depressive symptoms," Naviaux added.

rMMD is a mood disorder characterised by multiple symptoms in combination -- feelings of sadness or hopelessness, anger or frustration, loss of interest, sleep disturbances, anxiety, slowed or difficulty thinking, suicidal thoughts and unexplained physical problems, such as back pain or headaches.

For the study, the team recruited 68 subjects (45 females, 23 males) with rMDD who were in antidepressant-free remission and 59 age- and gender-matched controls. After collecting blood
from patients who were in remission, the patients were followed prospectively for two-and-a-half years.

Results showed that a metabolic signature found when patients were well could predict which patients were most likely to relapse up to two-and-a-half years in the future.

Analysis of the most predictive chemicals found they belong to certain kinds of lipids (fats that included eicosanoids and sphingolipids) and purines.

Purines are made from molecules, such as ATP and ADP -- the major chemicals used for energy storage in cells, but which also play a role in communications used by cells under stress, known as purinergic signaling.

The researchers found that in subjects with rMMD, changes in specific metabolites in six identified metabolic pathways resulted in fundamental alterations of important cellular activities.

**Sleeping**

**Mothers, but not fathers, with multiple children report more fragmented sleep: Study (The Tribune: 20210114)**


Mothers, but not fathers, with multiple children report more fragmented sleep: Study

Mothers with multiple children report more fragmented sleep than mothers of a single child, but the number of children in a family doesn't seem to affect the quality of sleep for fathers, according to a study.

The study was led by researchers from McGill University. A total of 111 parents (54 couples and 3 mothers of single-parent families) participated in the study published in the Journal of Sleep Research led by McGill doctoral student Samantha Kenny under the supervision of Marie-Helene Pennestri, Assistant Professor in the Department of Educational and Counselling Psychology.

Participants' sleep patterns were studied for two weeks. Mothers with one baby reported having less interrupted and better-quality sleep than mothers with more than one child, although the total amount of sleep did not differ depending on the number of children. No difference was noted in fathers.
"Experienced mothers perceived their sleep to be more fragmented than that of first-time mothers. Tension in the marital relationship may transpire if childcare is one-sided and not discussed collaboratively," says Pennestri, who is also a researcher at the Hopital en sante mentale Riviere-des-Prairies (CIUSSS-NIM).

According to the researchers, interventions developed by healthcare providers targeting an equal distribution of daytime and nighttime childcare tasks could be helpful. These interventions should be tailored to each family member, depending on their situation.

As next steps, the researchers aim to explain the differences between mothers and fathers, and determine why mothers with more than one child report worse sleep. (ANI)

**Kidney disease**

**CKD: First-degree relative with kidney disease increases risk by three-fold**

(The Tribune: 20210114)


CKD: First-degree relative with kidney disease increases risk by three-fold

Photo for representational purpose. Thinkstock

Family history of kidney disease is strongly associated with increased risk of chronic kidney disease (CKD), suggested a study published in the American Journal of Kidney Diseases.

In a large population-based family study researchers investigated the familial aggregation of CKD by comparing the risk of the disease in individuals with an affected first-degree relative to that in the general population.

Participants with an affected first-degree relative were observed to have a threefold higher risk of CKD compared to that in the general population, independent of BMI, hypertension, diabetes, hypercholesterolemia, history of cardiovascular disease (CVD), and smoking status.

The authors of the study observed a 1.56 fold higher risk in those with an affected spouse, suggesting that shared environmental factors and/or assortative mating play a role. Heritability of estimated glomerular filtration rate (eGFR) was considerable (44 per cent), whereas heritability of urinary albumin excretion (UAE) was moderate (20 per cent).

Heritability of kidney-related markers and serum electrolytes ranged between 20 and 50 per cent. These results indicate an important role for genetic factors in modulating susceptibility to kidney disease in the general population. ANI
**Antibodies**

**Promising new antibodies against novel coronavirus found (The Tribune: 20210114)**


They can penetrate the tissue better and can be produced in larger quantities

Promising new antibodies against novel coronavirus found

A health worker disinfects gloves before performing a coronavirus disease (COVID-19) test. — Reuters

Scientists have identified and further developed novel antibody fragments from llamas and alpacas that can be used against the SARS CoV-2 virus which causes COVID-19.

These "nanobodies" identified by an international team led by the University of Bonn in Germany are smaller than classic antibodies.

They can penetrate the tissue better and can be produced in larger quantities.

The team also combined the nanobodies into potentially effective molecules attacking different parts of the virus simultaneously.

The approach, described in the journal Science, could prevent the pathogen from evading the active agent through mutations.

Antibodies are an important weapon in the immune system's defence against infections.

They bind to the surface structures of bacteria or viruses and prevent their replication.

One strategy in the fight against disease is therefore to produce effective antibodies in large quantities and inject them into the patients.

However, the immune system produces an almost infinite number of different antibodies, and they all recognise different target structures, the researchers said.

Only very few of them are for example capable of defeating the SARS coronavirus-2, they said.

"We first injected a surface protein of the coronavirus into an alpaca and a llama," explained Florian Schmidt, from the University of Bonn's Institute of Innate Immunity.
"Their immune system then produces mainly antibodies directed against this virus. In addition to complex normal antibodies, llamas and alpacas also produce a simpler antibody variant that can serve as the basis for nanobodies," Schmidt said.

A few weeks later, the researchers took a blood sample from the animals, from which they extracted the genetic information of produced antibodies.

This "library" still contained millions of different construction plans.

Using a complex process, they extracted those that recognise an important structure on the surface of the coronavirus, the spike protein.

**Health Budget**

**Health Budget must look beyond Covid mitigation (Hindustan Times: 20210114)**

[https://epaper.hindustantimes](https://epaper.hindustantimes)
1. The central government's health spending needs a fivefold increase in the next four years

The Narendra Modi government adopted a National Health Policy (NHP) in 2017. The document highlighted the low level of public spending on health in India and called for increasing it to 2% of India's gross domestic product (GDP) by 2022. The 2015 draft of NHP noted that 40% of total health spending, which comes to 1% of GDP, should come from the Centre. Unfortunately, NHP's mandate has not been followed. Between 2017-18 and 2020-21, the share of health spending in India's GDP has remained stagnant. The 2020-21 budget projected a nominal GDP of ₹27.71 lakh crores, but the Centre's health spending was only ₹10.12 lakh crores, just 0.3% of projected GDP. Even if the 2021-22 nominal GDP is the same as it was in 2020-21, the Centre should increase its health spending to at least ₹22.71 lakh crores. Given the target of India's GDP breaching the ₹5 trillion mark by 2025, the central government's health spending should reach ₹65 billion, which at the going exchange rate is ₹3.66 lakh crores. This means that central spending on health will have to increase by 5.5 times in the next four years.

2. Tertiary care and health insurance should not come at the cost of primary care

While the level of overall spending on health remains a concern, there is also a need to focus on shifting budgetary allocations within the health sector. The current government's policies have focused on developing multi-specialty tertiary care institutions and expanding health insurance coverage. This has reflected in a sharp hike in spending on the two flagship schemes in the health sector: Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) and Pradhan Mantri Jan Arogya Yojana (PMJAY), a revamped version of the Rastriya Swasthya Bima Yojana (RSBY). The share of these two schemes in total health spending increased by 12.4 percentage points between 2016-17 and 2020-21. In nominal terms, the amount increased 4.4 times.

While strengthening tertiary care facilities is a laudable goal on a stand-alone basis, it needs to be seen in the context of a growing squeeze on primary care health budgets, given the overall stagnation in health spending. Budgetary allocation for the National Rural Health Mission (NRHM), the mainstay of rural primary health care, has been almost stagnant over the last four years, which means a decline in real terms.

NRHM includes key programmes such as the RCH Flexi-pool (supports routine immunisations), JIFRR (for communicable diseases), NABH (for diagnostic health centres), NIDHI and others. Some of these needs have not been met fully in budgetary allocations even in nominal terms.

3. Primary care facilities have seen deterioration under the current government

The squeeze on primary care spending has had an adverse impact on the quality of health care at the community level. A good way to measure this is to see the number of rural health facilities which fulfilled norms set by the Indian Public Health Standards (IPHS). These include availability of infrastructure, drugs and equipment, workforce, etc. The share of sub-centres (SCs), primary health centres (PHCs), and community health centres (CHCs) fulfilling these norms is lower compared to what it was in 2015.

4. Sacrificing primary health care to augment tertiary care is counter-productive

Promoting tertiary care and insurance coverage while neglecting primary care does not help because it increases the burden of out-of-pocket expenditure (OOP) and loads the tertiary sector with cases treatable at the primary level. Data from the latest (2017-18) National Sample Survey (NSS) survey on health shows that nearly 98% of cases are treated in out-patient departments. This accounts for 63% of OOP on health. Not only is this spending not covered by health insurance programmes, a majority of these ailments can be treated at the primary level, free of cost, ensuring early diagnosis and better management of diseases. If primary care infrastructure is well-functioning, the WHO-UNICEF Afrow Asia Declaration of 1998 - to which India was a signatory - and all subsequent NIHs emphasised Comprehensive Primary Health Care as a tiered referral system with primary care at its core, which does not burden higher-tier institutions by cases treatable at lower levels. Implementing that framework and correcting sectoral imbalances is an urgent need.
The extraordinary situation created by the Covid-19 pandemic, which has exposed the vulnerabilities of our fragile health-care system, demands an equally extraordinary intervention by the government. The expectation from the Union Budget 2021-22 is for the central government to lead from the front in the health sector. This entails addressing prevailing systemic deficiencies along with managing the added burden of Covid-19. India’s health sector requires a two-fold intervention by the government. Overall spending levels need to increase significantly and there is also a need to correct the growing sectoral imbalance with a bias in favour of tertiary facilities together with increasing neglect of primary health-care facilities.

FREE VACCINES FOR ALL

FREE VACCINES FOR ALL IN DELHI, EVEN IF CENTRE DOES NOT PAY FOR IT: KEJRIWAL (Hindustan Times: 20210114)

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

The vaccine against the coronavirus disease (Covid-19) will be administered free of charge for everyone residing in Delhi even if the central government does not do so, chief minister Arvind Kejriwal said on Wednesday, even as he alerted people against “misinformation” related to the vaccines.

The comments by Kejriwal came three days before a vaccination drive was set to begin across the country, with health care and frontline workers to be administered the first shots.

“There are a lot of people who would not be able to afford the vaccine. I had appealed to the Centre to provide free vaccine to all the people of the country… If the Centre doesn’t do it, the Delhi government will provide free vaccine to all the residents of Delhi,” Kejriwal said on the sidelines of his visit to the residence of a doctor who died of Covid-19 while on duty.

“I want to appeal to everyone to not spread any misinformation on the vaccine. I believe that the central government, along with the scientists, has followed all protocols and safeguards before bringing this vaccine. There should be no doubt regarding it,” he said.

After the first dry run of the vaccine on January 2, Delhi health minister Satyendar Jain had also said the vaccine would be free for all Delhi residents. P3
Polio immunisation drive

Polio immunisation drive postponed (The Hindu: 20210114)


Health Ministry letter issued to States cites unforeseen activities.

The Union Health Ministry has postponed the polio immunisation drive scheduled from January 17 till further notice, citing unforeseen activities.

While the COVID-19 vaccination starts on January 16, the National Immunisation Day (NID), commonly known as Pulse Polio Immunisation programme, was scheduled for January 17 across India.

The January 9 notice issued by the immunisation division says: “This is to inform that due to unforeseen activities, it is decided to postpone the scheduled Polio NID (National Immunisation Day) round from January 17, 2021 till further notice.”

The letter has been issued to the Principal Secretary in the Health department of all States among other top officials.

Bird Flu (The Asian Age: 20210114)

Eateries can't serve egg-based dishes or poultry meat

Bird flu: Chicken, poultry meat sale banned in Delhi

New Delhi, Jan. 12: All the three Municipal Corporation of Delhi — North, South and East — on Wednesday imposed a ban on sale and storage of poultry or processed chicken meat by shops and restaurants with immediate effect in view of the bird flu situation in the national capital. Earlier in the day, the veterinary services department of the North Delhi Municipal Corporation (NDMC) had issued the order which said that owners of restaurants and hotels will face action if egg-based dishes or poultry meat and other products are served to customers.

The order has been issued in public interest and should be diligently complied with, it said.

A South Delhi Municipal Corporation official said the SDMC has also taken a decision to ban sale and storage of poultry or processed chicken meat by shops and restaurants with immediate effect, in view of the bird flu in the city.

East Delhi Mayor Nirmal Jain said, EDMC authorities too have decided to take the decision in view of the situation here.

“Selling and storage of poultry or processed chicken meat by shops and restaurants has been banned in east Delhi area with immediate effect. Restaurants and hotels too are prohibited from serving such products,” he said. Testing of samples of crows and ducks had confirmed bird flu cases in the national capital on Monday, prompting the city government to impose a ban on sale of processed and packaged chicken brought from outside the city. The Ghazipur poultry market has also been closed.

All meat and poultry shops and meat processing units in areas under the NDMC, are prohibited to sell, store poultry or processed or packaged chicken meat with immediate effect, till further orders,” the North Corporation order said.

Several ducks at Sanjay Lake and a large number of crows across various city parks have been found dead in the last one week.

Reports of over 50 bird deaths were received on a helpline of the Delhi government’s animal husbandry unit and 18 samples from different parts of the city were sent for avian flu testing on Tuesday, officials said.

Bird flu outbreak has been confirmed only in Delhi, Uttarakhand, UP, Kerala, Rajasthan, MP, Himachal, Haryana, Maharashtra and Gujarat till now, according to the ministry. — PTI
SARS-CoV-2 can infect neurons, damage brain tissue

Researchers have discovered that SARS-CoV-2 can directly infect the central nervous system and have begun to unravel some of the virus's effects on brain cells.

The study, that used both mouse and human brain tissue, indicates that SARS-CoV-2 can affect many other organs in the body, including, in some patients, the central nervous system, where infection is associated with a variety of symptoms ranging from headaches and loss of taste and smell to impaired consciousness, delirium, strokes and cerebral haemorrhage.

"Understanding the full extent of viral invasion is crucial to treating patients, as we begin to try to figure out the long-term consequences of Covid-19, many of which are predicted to involve the central nervous system," said researcher Akiko Iwasaki, a professor at Yale University.

For the study, published on Wednesday in the Journal of Experimental Medicine (JEM), the team analysed the ability of SARS-CoV-2 to invade human brain organoids (miniature 3D organs grown in the lab from human stem cells).

The researchers found that the virus was able to infect neurons in these organoids and use the neuronal cell machinery to replicate. The virus appears to facilitate its replication by boosting the metabolism of infected cells, while neighbouring, uninfected neurons die as their oxygen supply is reduced.

SARS-CoV-2 enters lung cells by binding to a protein called ACE2, but whether this protein is present on the surface of brain cells is unclear.

The team determined that the ACE2 protein is, in fact, produced by neurons and that blocking this protein prevents the virus from human brain organoids.

SARS-CoV-2 was also able to infect the brains of mice genetically engineered to produce human ACE2, causing dramatic alterations in the brain's blood vessels that could potentially disrupt the organ's oxygen supply, the team said.

Central nervous system infection was much more lethal in mice than infections limited to the lungs, they added.

The researchers also analysed the brains of three patients who succumbed to Covid-19.
SARS-CoV-2 was detected in the cortical neurons of one of these patients, and the infected brain regions were associated with ischemic infarcts in which decreased blood supply causes localized tissue damage and cell death. Microinfarcts were detected in the brain autopsy of all three patients.

**Covid healthcare workers**

**Covid healthcare workers at risk for mental health problems: Study (New Kerala: 20210114)**


Since the beginning of the pandemic, healthcare workers have shown a remarkable resilience and professional dedication despite a fear of becoming infected, but a new study suggests that more than half of Covid-19 healthcare workers are at risk for mental health problems.

The findings, published in the Journal of Psychiatric Research, highlighted that doctors, nurses and emergency responders involved in Covid-19 care could be at risk for one or more mental health problems, including acute traumatic stress, depression, anxiety, problematic alcohol use, and insomnia.

"Although the majority of health care professionals and emergency responders aren't necessarily going to develop PTSD, they are working under severe duress, day after day, with a lot of unknowns," said the researcher, Andrew J. Smith from the University of Utah in the US.

"Some will be susceptible to a host of stress-related mental health consequences. By studying both resilient and pathological trajectories, we can build a scaffold for constructing evidence-based interventions for both individuals and public health systems," Smith added.

For the study, the researchers surveyed 571 healthcare workers, including 473 emergency responders (firefighters, police, EMTs) and 98 hospital staff (doctors, nurses).

Overall, 56 per cent of the respondents screened positive for at least one mental health disorder.

The prevalence for each specific disorder ranged from 15 per cent to 30 per cent of the respondents, with problematic alcohol use, insomnia and depression topping the list.

In particular, the scientists found that healthcare workers who were exposed to the virus or who were at greater risk of infection because they were immunocompromised had a significantly increased risk of acute traumatic stress, anxiety and depression.

The researchers suggest that identifying these individuals and offering them alternative roles could reduce anxiety, fear and the sense of helplessness associated with becoming infected.
Menopause

Study suggests menopause may be blamed for increased forgetfulness, lack of attention (New Kerala: 20210114)


Cleveland [Ohio], January 13: A new study suggests that a woman's menopause stage can affect cognitive performance, and declines in memory may persist in the post-menopause period.

The study suggests, if you're a bit more forgetful or having more difficulty processing complex concepts than in the past, the problem may be your menopause stage.

A new study claims that the menopause stage is a key determinant of cognition and, contrary to previous studies, shows that certain cognitive declines may continue into the post-menopause period. Study results are published online in Menopause, the journal of The North American Menopause Society (NAMS).

It's commonly assumed that people's memories decline with age, as does their ability to learn new things and grasp challenging concepts. But multiple large-scale studies have suggested that menopause is a sex-specific risk factor for cognitive dysfunction independent of ageing and menopause symptoms such as depression, anxiety, and hot flashes.

Many of these previous studies, however, did not characterize the duration of cognitive changes taking place between premenopause and perimenopause but suggested that difficulties in memory and processing may resolve in the postmenopause period.

A new study involving more than 440 primarily low-income women of colour, including women with HIV, concluded that menopause stage is a key determinant of cognition but that clinically significant cognitive declines/cognitive impairment persist into postmenopause, affecting primarily learning and memory. Subtler declines in attention were additionally found to continue into the postmenopause period.

Researchers theorised that the difference in results relative to the duration of cognitive decline could be explained by the fact that this newer study included more low-income women with multiple risk factors for cognitive dysfunction, including the presence of HIV. Previous studies have confirmed that cognitive function is compromised by an array of risk factors, including HIV, poverty, low education, substance abuse, high levels of stress, limited access to quality healthcare, mental health problems, and medical comorbidities.

The new study is the first known study to assess changes in cognitive performance across menopause stages. It specifically showed cognitive declines over time in learning, memory, and attention from premenopause to early perimenopause and from premenopause to
postmenopause. Many of these changes were documented to reach a clinically significant level of cognitive impairment.

Results are published in the article "Cognitive changes during the menopausal transition a longitudinal study in women with and without HIV."

"This study, which included a racially diverse sample of low-income women and women with HIV, adds to the existing literature on cognitive changes across the menopause transition and showed a significant cognitive decline in learning and memory that persisted into postmenopause. Additional research is needed to confirm these findings and to identify the factors responsible for individual differences in cognitive changes," says Dr Stephanie Faubion, NAMS medical director.

COVID-19 pneumonia causes

COVID-19 pneumonia causes more damage than typical pneumonia, says study (New Kerala: 20210114)


Researchers from the Northwestern University claims that COVID-19 pneumonia spreads like multiple wildfires, leaving destroyed lung tissue in its wake.

COVID pneumonia is significantly different from pneumonia caused by other causes, reports a new study. The infection leaves damage in its wake and fuels the fever, low blood pressure and damage to the kidneys, brain, heart and other organs in patients with COVID-19. Scientists discovered a target for treating COVID pneumonia.

Bacteria or viruses like influenza that cause pneumonia can spread across large regions of the lung over the course of hours. In the modern intensive care unit, these bacteria or viruses are usually controlled either by antibiotics or by the body's immune system within the first few days of the illness.

The study published in journal Nature, investigators at Northwestern Medicine show COVID-19 pneumonia is different. Instead of rapidly infecting large regions of the lung, the virus causing COVID-19 sets up shop in multiple small areas of the lung. It then hijacks the lungs' own immune cells and uses them to spread across the lung over a period of many days or even weeks, like multiple wildfires spreading across a forest.

As the infection slowly moves across the lung, it leaves damage in its wake and continuously fuels the fever, low blood pressure and damage to the kidneys, brain, heart and other organs in patients with COVID-19.
The severe complications of COVID-19 compared with other pneumonias might be related to the long course of the disease rather than a more severe disease, the study authors said.

This is the first study in which scientists analyzed immune cells from the lungs of COVID-19 pneumonia patients in a systematic manner and compared them to cells from patients with pneumonia from other viruses or bacteria.

As a result of the detailed analysis, researchers identified critical targets to treat severe SARS-CoV-2 pneumonia and lessen its damage. The targets are the immune cells macrophages and T cells. The study suggests macrophages cells typically charged with protecting the lung can be infected by SARS-CoV-2 and can contribute to spreading the infection through the lung.

Northwestern Medicine will test an experimental drug to treat these targets in COVID-19 pneumonia patients in a clinical trial early in 2021. The drug to be tested quiets the inflammatory response of these immune cells, thus enabling initiation of the repair process in the injured lung.

"Our goal is to make COVID-19 mild instead of severe, making it comparable to a bad cold," said study co-senior author Dr Scott Budinger, chief of pulmonary and critical care medicine at Northwestern University Feinberg School of Medicine and Northwestern Medicine.

COVID-19, like influenza, is unlikely to ever go away, even if much of the population is vaccinated, said senior co-author Dr Ben Singer, assistant professor of pulmonary and critical care medicine at Feinberg and a Northwestern Medicine physician.

"Already, researchers at Northwestern and elsewhere are anticipating mechanisms by which this RNA virus, which mutates quickly, will evade current vaccines," Singer said. The study also revealed why the mortality among patients on a ventilator for COVID-19 was lower than patients on a ventilator due to regular pneumonia, the study reports. An intense conflagration in the lungs (regular pneumonia) has a higher risk of death.

Those with COVID-19 pneumonia are sick for a long time, but the inflammation in their lungs is not as severe as regular pneumonia.

"If patients with COVID-19 are carefully managed and the health care system isn't overwhelmed, you can get them through it. These patients are very sick. It takes a really long time for them to get better. But If you have enough beds and health care providers, you can keep the mortality to 20%. When health systems are overwhelmed mortality rates double up to 40%," Budinger said.

For the study, scientists performed a high-resolution analysis of the lung fluid of 86 COVID-19 patients on a ventilator and compared it with lung fluid from 256 patients on a ventilator who had other types of pneumonia. Because of the safety concerns, only a handful of groups around the world performed an analysis of the immune response in the lungs of patients with COVID-19.
The study performed at Northwestern Medicine is unique because Wunderink and colleagues have been studying pneumonia for years before the pandemic. As a result, when the COVID-19 pandemic hit, they were prepared to collect fluid from the lungs of these patients in a safe and systematic manner and compare it with fluid collected from other ICU patients with pneumonia collected before the pandemic. This research infrastructure allowed them to show that pneumonia in patients with COVID-19 is different from other pneumonia, and more importantly, how it is different.

Scientists took cells from patients' lung fluid and looked at the RNA and the proteins those cells express, enabling them to identify how these immune cells drive inflammation.

"This level of resolution could never be achieved without directly sampling lung fluid," said study co-senior author Dr Alexander Misharin, an assistant professor of pulmonary and critical care medicine at Feinberg and a Northwestern Medicine physician.

The complex nature of the study, in which samples from patients were analyzed with the most sophisticated technologies available in Northwestern's state-of-the-art research labs, required the concerted effort of more than 100 researchers.

First authors are Rogan Grant, Luisa Morales-Nebreda and Nikolay Markov. Grant is a graduate student in the Northwestern University Interdepartmental Neuroscience program; Dr Luisa Morales-Nebreda is a pulmonary and critical care fellow in the Physician Scientist Training Program at Northwestern; Nikolay Markovis is a computational postdoctoral fellow in the division of pulmonary and critical care medicine.

The work was done as part of a consortium of investigators participating in the Successful Clinical Response in Pneumonia Therapy Systems Biology Center funded by the National Institute of Allergy and Infectious Diseases led by Wunderink.

CORONAVACCINES (Hindustan: 20210114)

https://epaper.livehindustan.com/imageview_571280_84872934_4_1_14-01-2021_0_i_1_sf.html
मुख्यमंत्री अरविंद केजरीवाल की अपील, आंतियां ने फैलाए लोग ऐलान : दिल्ली में सभी को गुप्त टिका लगेगा
दिल्ली में 75 केंद्रों से टीकाकरण को शुरूआत होगी, जिला केंद्रों पर वैक्सीन बेगने का काम शुरू किया गया।

Health Workers 20210114)
तैयारी: मरीजों के संपर्क में आने वाले स्वास्थ्यकर्मियों को पहले टीका

जनवरी को इन केंद्र पर टीकाकरण

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04 जिलों में नौ-नौ टीकाकरण केंद्र बनाए गए हैं।

50 साल से अधिक उम्र के लोगों को भी टीकाकरण में प्राथमिकता मिलेगी।
कोल्ड चेन में प्रवेश से पहले हर शख्स की जांच होगी

नई दिल्ली | प्रमुख संवाददाता

सभी टीकाकरण केन्द्रों पर पुलिस का सख्ती पहुँच है। पुलिस की अनुमति के बिना कोल्ड चेन केन्द्र पर परिवार भी पर नहीं मार पाएगा। प्रवेश के पहले हर शख्स को जांच के दायरे से होकर गुजरना होगा।

कोल्ड चेन से टीकाकरण केन्द्र तक वैक्सीन भी पुलिस सुरक्षा में ही पहुंचाई जाएगी। जिला प्रशासन एक-एक वैक्सीन का हिसाब रखेगा। वैक्सीन दाएं-बाएं होते ही अधिकारियों पर गाज भी गिर सकती है। इसलिए, टीकाकरण अभियान से जुड़ा हर शख्स चौकिया है।

सुरक्षा में पुलिस और अर्धसैनिक बल तैनात

स्पेशल पुलिस कमिश्नर मुकेशचंद्र ने बताया कि सभी केंद्रों पर नई दिल्ली पुलिस के साथ अर्धसैनिक बलों को तैनात किया गया है। इन केंद्रों की सुरक्षा की कमान करीब दो हजार सुरक्षाकर्मियों ने संभाल रखा है।

कैमरे की जद में होंगे टीकाकरण केंद्र: टीकाकरण स्थल को कैमरे की जद में रखा जाएगा। टीकाकरण के दौरान होमगार्ड, एनसीसी, एनएसएस आदि से जुड़ों में भी मदद करेंगे।

को-वैक्सीन की 20 हजार डोज भंडारण केंद्र पहुंची

राहत

- मंगलवार को कोविशील्ड वैक्सीन की 2.64 लाख डोज आई थी।
- बुधवार को आई 20 हजार डोज भारत बायोटेक ने मुफ्त दी है।

बायोटेक ने केंद्र सरकार को मुफ्त में प्रदान की है।

एक शीशी से 20 डोज लगाई जा सकती है: वैक्सीन को इस तरह पैक किया गया है कि एक शीशी से 20 डोज लगाई जा सकें। इस वैक्सीन को 4 अलग-अलग बॉक्स में भरकर एयरपोर्ट से राजीव गांधी अस्पताल भेजा गया।

दिल्ली के राजीव गांधी अस्पताल में बुधवार को लगातार दूसरे दिन वैक्सीन पहुंचाई गई। अस्पताल में आईसीएमआर और भारत बायोटेक की स्वदेशी वैक्सीन 'को-वैक्सीन' की 20 हजार डोज पहुंचाई गई।

एक दिन पहले मंगलवार को सोसा इंस्टीट्यूट की कोविशील्ड वैक्सीन की 2.64 लाख डोज अस्पताल लाई गई थी। अब तक दिल्ली में कुल 2 लाख 84 हजार डोज पहुंच चुकी हैं। राजीव गांधी अस्पताल में बुधवार को आने वाली सभी 20,000 डोज भारत