



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Thursday 20201029

Poor sanitation

Countries with low GDP, poor sanitation had lower COVID-19 death rate: Study (The Tribune: 20201029)

<https://www.tribuneindia.com/news/health/countries-with-low-gdp-poor-sanitation-had-lower-covid-19-death-rate-study-162378>

Findings can lead to exploration of 'immune training with possibilities of microbiome therapies', say researchers

Countries with low GDP, poor sanitation had lower COVID-19 death rate: Study

Countries with poor hygiene and sanitation and low quality of water supply seem to have had lower COVID-19 Fatality Rates (CFR) compared to richer countries which do well on these parameters, Indian researchers have found.

But they cautioned that it did not mean that poor hygienic conditions were desirable.

Rather, the findings can lead to exploration of "immune training with possibilities of microbiome therapies", said Dr Shekhar Mande, Director General, Council of Scientific and Industrial Research (CSIR).

Researchers from the National Centre for Cell Sciences (NCCS) and Chennai Mathematical Institute conducted the study – The mortality due to COVID-19 in different nations is associated with the demographic character of nations and the prevalence of auto-immunity.

The paper, published in Medrxiv, has not been peer- reviewed.

The study was made across 106 countries and based on 25 to 30 parameters, including demography, prevalence of communicable and non-communicable diseases, BCG vaccination, sanitation and COVID-19 deaths per million.

"Per million population (deaths) number appears to be high in countries that are richer and having high GDP, and (in) countries with low GDP, less number of people are dying, which is very paradoxical," said Mande, who is a co-author of the research paper.

The percentage of people above the age of 65, who are believed to be at greater risk if they contract COVID-19, is significantly higher in high-GDP countries, said Mande.

They also found higher auto-immune diseases prevalence in richer countries.

Auto-immune diseases such as multiple sclerosis, type 1 diabetes mellitus, psoriasis, rheumatoid arthritis, asthma "are prevalent in richer countries because they have very good sanitation such as hand-wash, basic drinking water, no open defecation and that actually led to more auto-immune disease parameters in higher GDP countries", said Mande.

"So all these parameters (demography, sanitation and prevalence of auto-immune diseases) combined together account for the fact that countries with higher GDP have higher death per million (due to COVID-19) than countries with lower GDP," he said.

The research paper noted that poor hygiene practices and lack of sanitation were known to be responsible for the higher communicable disease burden in the low GDP countries.

"It is, therefore, reasonable to expect that parameters describing safe sanitation and safe drinking water to be correlated negatively with the Covid-19 deaths.

"Surprisingly, we find a contrary observation, where different sanitation parameters are correlated positively with the Covid-19 outcome," said the study.

"It is, therefore, perplexing to note the positive correlation of sanitation parameters with the Covid-19 Fatality Rates," it said.

"Countries which are poor and have less hygiene, they get more infectious diseases such as TB, malaria and countries which are rich with better hygiene conditions, there are no such diseases in abundance, but exactly opposite happened in our study (regarding COVID-19 mortality)," said Mande.

Although the study provided a possible explanation based on sanitation practices on the CFR difference between economically stronger and weaker countries, it did not mean the researchers favoured weaker hygiene practices for handling future pandemics, he stressed.

"Rather this analysis opens up avenues to consider immune training with possibilities of microbiome therapies to supplement improved hygiene and sanitation practices," said Mande.

Smoking

Young smokers three times more likely to die prematurely (The Tribune: 20201029)

<https://www.tribuneindia.com/news/health/young-smokers-three-times-more-likely-to-die-prematurely-162356>

Young smokers three times more likely to die prematurely

Current smokers faced nearly three times the risk of premature death from cardiovascular disease compared with people who never smoked, with the risk being higher among those who began smoking during childhood, say researchers.

"It was surprising to see how consistent these findings were with our earlier research and with other studies from around the world both in terms of the substantial risks associated with smoking and with the health benefits of quitting smoking," said lead study author Blake Thomson from the University of Oxford in the UK.

The age at which a person begins smoking is an important factor, and those who start smoking at a young age are at especially high risk of dying prematurely, the study, published in the Journal of the American Heart Association, reported.

However, quitting can substantially reduce that risk, especially for those who quit at younger ages. Getting people to quit smoking remains one of the greatest health priorities globally.

Using data collected between 1997 and 2014, from the annual US National Health Interview Survey, researchers examined the medical histories, lifestyle habits and demographics of smokers and non-smokers.

The study included 390,929 adults, aged 25 to 74 years, 56 per cent female. Occasional smokers were excluded from the study. Current smokers were grouped by the age at which they began smoking.

During the follow-up period, 4,479 people died before the age of 75 from heart disease or stroke.

After adjusting for potential confounding variables, such as age, education, alcohol consumption, region and race, researchers found 58 per cent were never smokers, 23 per cent were ex-smokers, and 19 per cent were current smokers.

Among current smokers, two per cent had started smoking before age 10, and 19 per cent began smoking between ages 10 and 14.

Those who quit smoking by the age of 40 reduced their excess risk of premature death from cardiovascular disease by about 90 per cent.

Quitting smoking at any age offered benefits, and the earlier a person quit, the better, according to the findings.

The analysis found that when compared to peers who had never smoked, those who were current smokers had nearly three times the risk of dying prematurely from heart disease or stroke.

The researchers said that more research is needed to better clarify the mechanisms by which prolonged smoking from childhood affects cardiovascular risk.

Vitamins A, E and D

High intake of vitamins A, E and D linked to fewer respiratory issues (The Tribune: 20201029)

<https://www.tribuneindia.com/news/health/high-intake-of-vitamins-a-e-and-d-linked-to-fewer-respiratory-issues-162347>

Nutrition has key role in cutting the risk of several infections

High intake of vitamins A, E and D linked to fewer respiratory issues
Photo for representational purpose only.

one of Indian-origin, have found that high intake of vitamins A, E, and D may be linked to fewer respiratory complaints in adults.

Nutrition has a key role in cutting the risk of several infections, although exactly how it boosts immunity is complex and not fully understood, the study, published in the journal the BMJ Nutrition, Prevention & Health, reported.

"Micronutrient deficiencies are often overlooked as a key contributor to the burden of malnutrition and poor health, presenting an additional layer of challenge during the Covid-19 pandemic," said study author Sumantra Ray from Imperial College London in the UK.

The researchers wanted to explore whether the intake of these vitamins from both diet and supplements might be linked to the prevalence of respiratory complaints in a nationally representative sample of UK adults.

They drew on information provided by 6,115 adult participants in the 2008-2016 National Diet and Nutrition Survey Rolling Programme (NDNS RP) who had completed three or more days of diet diaries.

Respiratory complaints were reported by the participants and had not been diagnosed by a clinician.

They were broadly defined, and included both infectious and non-infectious conditions, such as colds, chronic obstructive pulmonary disease, and asthma.

The researchers looked at dietary intake only and that from diet and supplements, accounting for potentially influential factors, such as age, sex, weight (BMI), smoking, household income and total energy intake.

In all, there were 33 cases of respiratory complaints. These respondents were generally older and less likely to say they regularly took vitamins A, E, C or D supplements.

There was no obvious association between BMI and vitamin intake, or between BMI and respiratory complaints.

But vitamin A and E intake from both diet and supplements was associated with a lower prevalence of respiratory complaints in UK adults.

And vitamin D intake from supplements, but not from diet, was associated with fewer respiratory complaints, prompting the researchers to suggest that the findings add to the current scientific debate on the value of vitamin D supplementation.

"Our findings are consistent with the hypothesis that supplementation is critical to ensuring adequate vitamin D status is maintained and potentially indicate that intake of vitamin D from diet alone cannot help maintain adequate vitamin D status," the authors wrote. — IANS

Brain abnormalities

Scientists find brain abnormalities in COVID-19 patients (The Tribune: 20201029)

<https://www.tribuneindia.com/news/health/scientists-find-brain-abnormalities-in-covid-19-patients-162346>

They said some of the EEG alterations found in COVID-19 patients may indicate damage to the brain that might not be repaired after recovering from the disease

Scientists find brain abnormalities in COVID-19 patients

An analysis of more than 80 studies reporting complications experienced by COVID-19 patients has revealed that about one-third of them have abnormalities in the frontal lobe of the brain, findings which shed light on the neurological symptoms of the disease.

The review of studies, published in *Seizure: European Journal of Epilepsy*, focused on abnormalities detected using electroencephalogram (EEG) scans, which are used to evaluate the electrical activity in the brain.

"We found more than 600 patients that were affected in this way. Before, when we saw this in small groups we weren't sure if this was just a coincidence, but now we can confidently say

there is a connection," said Zulfi Haneef, assistant professor of neurology at Baylor College of Medicine in the US.

The scientists explained that patients are recommended an EEG test when they have a slowed reaction to stimuli, followed by seizure-like events, speech issues, confusion, or an inability to wake up after sedation.

From the review of studies, the researchers said the most common findings from the EEG were slowing or abnormal electrical discharge, mostly in the frontal lobe of the patients.

They said some of the EEG alterations found in COVID-19 patients may indicate damage to the brain that might not be repaired after recovering from the disease.

Since the brain cannot regenerate, Haneef cautioned that any damage to the organ will more than likely be permanent.

"We know that the most likely entry point for the virus is the nose, so there seems to be a connection between the part of the brain that is located directly next to that entry point," he said.

"Another interesting observation was that the average age of those affected was 61, one-third were female and two-thirds were males. This suggests that brain involvement in COVID-19 could be more common in older males," Haneef added.

However, the scientists believe more studies are needed to validate the conclusions drawn in the review research.

According to Haneef, the virus may not be directly causing the abnormal EEG readings in the brain.

He said alterations in oxygen intake, heart problems related to COVID-19, or other side effects may also be involved.

"These findings tell us that we need to try EEG on a wider range of patients, as well as other types of brain imaging, such as MRI or CT scans, that will give us a closer look at the frontal lobe," Haneef said.

"A lot of people think they will get the illness, get well and everything will go back to normal, but these findings tell us that there might be long-term issues, which is something we have suspected and now we are finding more evidence to back that up," he added. PTI

COVID-19 vaccine

Sanofi, GSK to provide COVID-19 vaccine to global alliance (The Tribune: 20201029)

<https://www.tribuneindia.com/news/health/sanofi-gsk-to-provide-covid-19-vaccine-to-global-alliance-162345>

The Sanofi-GSK vaccine candidate is in early stage trials, with results expected in early December. Sanofi, GSK to provide COVID-19 vaccine to global alliance
Photo for representational purpose only. iStock

Drugmakers Sanofi and GlaxoSmithKline have agreed to provide 200 million doses of their potential COVID-19 vaccine to the COVAX Facility, a collaboration designed to give countries around the world equal access to coronavirus vaccines.

The Sanofi-GSK vaccine candidate is in early stage trials, with results expected in early December. The drugmakers said on Wednesday that they plan to begin phase three trial by the end of the year and request regulatory approval of the vaccine in the first half of 2021.

The facility is part of COVAX, a coalition of governments, health organisations, businesses and charities working to accelerate the development of COVID-19 vaccines.

Thomas Triomphe, head of Sanofi's vaccine unit, said: "To address a global health crisis of this magnitude, it takes unique partnerships. The commitment we are announcing today for the COVAX Facility can help us together stand a better chance of bringing the pandemic under control."

Almost 44 million people have been confirmed to be infected with the virus worldwide and 1.16 million of them have died, according to a tally by Johns Hopkins University.

Experts say the true toll of the pandemic is much greater than that, due to limited testing, missed mild cases and concealment of cases by some governments. — AP

Covid-19: What you need to know today (Hindustan Times: 20201029)

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

More tests (9.66 million till Tuesday evening) than any other state barring Uttar Pradesh and Bihar. The use of reverse transcription polymerase chain reaction (RT-PCR) tests alone, unlike UP and Bihar which have largely used rapid antigen tests. Around 127,000 tests per million of the population. These are some of Tamil Nadu's Covid-19 metrics — and they are impressive.

The southern state has seen 714,235 Covid-19 infections (till Tuesday), the fourth highest in the country after Maharashtra, Andhra Pradesh, and Karnataka; and recorded 10,983 deaths, the third highest in the country after Maharashtra and Karnataka. Its case fatality rate of 1.53% is marginally higher than the country's 1.5%, and its cumulative positivity rate of 7.4% is almost the same as the country's 7.57%. These are some more of Tamil Nadu's Covid-19 metrics — and they aren't all that impressive.

Yet, as the first wave of the coronavirus pandemic winds down in India, I'd like to believe Tamil Nadu is the state that has managed the health crisis the best. Here's why.

The first reason is testing.

For a state with a population of around 76 million to test 127,000 people per million is an achievement. India's overall number is 79,141 tests per million. And Tamil Nadu continues to test aggressively (see chart). Significantly, the state relies exclusively on the gold standard RT-PCR molecular tests. I have written extensively about the perils of the indiscriminate use of rapid antigen tests; their false negative rate is around 50%, which means they miss infections in around half the people carrying the virus. India's 79,141 per million number is built on the back of rapid antigen tests. UP and Bihar rely on them; even Delhi uses far more of them than it should be doing. Tamil Nadu's dependence on RT-PCR tests means its positivity rate data is much more credible.

The second is the trajectory of positivity rates over time in the state.

The positivity rate is simply the number of people testing positive expressed as a percentage of the number of tests conducted. Tamil Nadu's positivity rates started high (when very few tests were being conducted), dipped as the number of tests increased, then rose again as the infection soared, then fell and plateaued with consistently high testing, and finally started ebbing. The seven-day average has been below 5% for two weeks, and the daily number at or below 5% for the past 10 days (see chart). The World Health Organization said in May that a rate below 5% for two weeks meant the pandemic was under control. To be sure, this benchmark needs to be achieved even as testing remains consistently high and the right kind of tests are used (Tamil Nadu satisfies both conditions).

Both these factors are reflected in the state's current Covid-19 metrics. On October 27, Tamil Nadu saw a mere 2,522 cases — 5.85% of all cases recorded that day. Even the seven-day average of daily cases has fallen — it was 2,866 on October 27. After a long plateau through August and September (and a peak in July), the trajectory of daily cases has fallen through October.

The same is reflected in the number of deaths. On October 27, Tamil Nadu registered 27 deaths (seven-day average: 35), way down from the peak seen in August. Like the daily case numbers, the death toll plateaued through much of September before beginning to fall in October.

Other states would do well to peruse the charts accompanying this column carefully — this is how a successful Covid-19 management strategy looks (without using the wrong kind of tests or controlling case numbers through inadequate testing).

Does this mean case numbers will not rise again in Tamil Nadu?

Definitely not. They could. In May, crowding in a vegetable market in Chennai caused a spike. Earlier this month, frightening videos of crowds in a Chennai saree shop (since sealed by the local administration) did the rounds. Any such foolish behaviour could result in an increase in cases.

And does this mean Tamil Nadu will remain insulated from the inevitable second wave?

That's very unlikely, but the state's administrators have a proven strategy to follow.

That's more than can be said for many other states or Union territories.

Pollution

Need to implement SC orders strictly to cut pollution: Epca (Hindustan Times: 20201029)

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

Two days after the Centre told the Supreme Court that it was coming up with a composite law to tackle air pollution in the Capital, the apex court-mandated Environment Pollution Control Authority (Epca) released a copy of a September 11 report it had submitted to the court .

“The September 11 Epca report is the first status report on actions taken and those that remain to be taken in Delhi-NCR on air pollution; it was submitted to a new bench that took over the matter. Between September 11 and now, two more short, issue-specific reports on crop stubble fires and diesel vehicles were submitted to inform the apex court on what needs to be done,” said an Epca member who did not want to be named.

“This report is being shared now because most action in Delhi-NCR has been taken based on SC orders, including enforcement of pollution control in hot spots, implementation of radio-frequency identification technology, closing of thermal power plants in NCR, the closure of Badarpur power plant in Delhi, implementation of graded response action plan and the Comprehensive Action Plan. Now what remains is very stringent enforcement to meet the air pollution crisis. We do not want to comment on anything else,” the member added.

The Centre informed the top court on Monday that it has drafted a comprehensive law to control air pollution, especially in the Delhi-NCR region. This triggered speculation that a new agency or body created by the government could replace Epca.

During Monday's hearing, the Supreme Court suspended its order issued on October 16 appointing former apex court judge Madan B Lokur in a one-man committee to enforce strict ban on stubble burning in Delhi's neighbouring states Haryana, Punjab and also Uttar Pradesh (UP). The order was "kept in abeyance" by a three-judge bench, headed by Chief Justice of India SA Bobde, after solicitor general (S-G) Tushar Mehta informed the court about the new law.

On Wednesday, senior environment ministry officials said the law proposed by the Centre will pave the way for the creation of a new commission for air pollution control in Delhi-NCR.

"We cannot say at this time if it will replace Epca because Epca was created by SC. We also cannot say how the new body will impact the role of CPCB (Central Pollution Control Board). Those details will be in court very soon," a senior environment ministry official who did not want to be named said.

RP Gupta, secretary, environment ministry, said: "I cannot divulge any details about the law or the commission until it's in court. I have not said anything about Epca being replaced. We have to wait a few more days."

Santosh Harish, fellow at the Centre for Policy Research, said: "Air quality management in India, and NCR in particular, is certainly to be tackled at the regional 'airshed' level. If this legislation leads to institutional changes to accomplish this, it would well set a blueprint for other parts of the country. That would be progress. But Epca (a statutory body created in 1998 with a similar mandate and significant powers) and the Comprehensive Action Plan in 2018 have attempted to do exactly this."

In the September 11 report, Epca noted that the top court has already passed directions on all large sources of air pollution. A Comprehensive Action Plan (CAP) aimed at reducing air pollution levels was notified by the Union environment ministry in 2018 following the court's directions but it is yet to be implemented by the ministry completely, the report suggested.

Epca has recommended that the environment ministry expedite the implementation of the plan through augmentation of public transport, non-motorised transport and inter- and intra-NCR transport connectivity. This includes time-bound and urgent implementation of the apex court's directions, also specified in CAP, on the Phase IV of the Delhi Metro, construction of the different phases of Regional Rapid Transit System (RRTs), which will provide seamless connectivity between NCR towns, and the augmentation of buses in Delhi.

In its report, Epca referred to findings of an emissions inventory for Delhi developed by the ministry of earth sciences based on data from 2018. It has found that there has been a 40% rise in vehicular pollution between 2010 and 2018 in the Delhi-NCR region and that vehicles contribute to around 41% of the pollution in the national capital.

The inventory also showed that 1.1 million vehicles entered Delhi every day at just eight entry points including trucks, taxis and personal vehicles which underscores that the entire NCR

region requires better connectivity through public transport. The inventory also found that industrial pollution contributes around 18% of Delhi's particulate pollution and industrial emissions have increased by 48% between 2010 and 2018 in the region.

COVID Cases (The Asian Age: 20201029)

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=15191160>

Delhi sees sudden Covid cases' spurt: 5,673 in just 1 day

International flights off till Nov. 30

VINEETA PANDEY
NEW DELHI, OCT. 28

The national capital Delhi appears to be reeling under a major second wave of coronavirus cases, as a substantially high number of cases were reported Wednesday. Delhi saw 5,673 fresh infections in just a day, that prompted the Delhi government to keep all schools closed for now, till further notice.

Delhi had on Tuesday recorded its then all-time high of 4,853 new cases. The last time the city crossed the 4,000 mark was on September 9, when 4,473 cases were detected in a single day. Worried over the sudden spurt in cases, the Union health ministry is expected to hold a meeting with top Delhi govern-

ment officials on Thursday to re-strategise containment measures.

Worried Centre to meet Delhi govt officials today on change in strategy

Among other states which are reporting a spurt in cases are Kerala, West Bengal, Karnataka, Andhra Pradesh and Tamil Nadu. In fact, Kerala has overtaken Maharashtra, with the highest number of fresh cases, though both states are still contributing more than 5,000 new cases.

Health ministry officials said 79 per cent of new infections are still coming from 10 states and UTs.

Health ministry officials said the festive season, the opening up of public places and the onset of winter has possibly led to

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Breast cancer

Guide to reduce breast cancer risk with self examination (New Kerala: 20201029)

<https://www.newkerala.com/news/2020/189451.htm>

Breast cancer, a silent but potentially fatal disease can affect both women and men, though cases in men account for 1 per cent of all cases, according to experts. A breast cancer cell can develop in any part of the breast leading to ductal cancer, lobular cancer, phyllodes tumour, angiosarcoma among others.

The common sign of breast cancer is a new lump or mass on the breast. However, there are other various symptoms Dr Gauri Agarwal told ANI.

Dr Agarwal who is the Founder- Seeds of Innocence and Genestrings Lab said one should watch out for swelling of a breast, all or part of it, even if there is no lump, dimpling of the skin that may look like an orange peel, pain in breast or nipple, nipple turning inward or retraction, breast or nipple skin turning red, dry, flaky, or thick and nipple discharge other than breast milk.

According to the World Health Organisation, approximately, 2.1 million women each year are diagnosed with breast cancer and it also causes the greatest number of cancer-related deaths among women globally. In order to improve breast cancer outcomes and survival, experts suggested that early detection is critical.

One can self examine their breast to detect lump early and to improve the chances of recovery.

To self examine the breast, Dr Agarwal shared the few steps to feel the lump.

Step 1 Look at the breasts in the mirror with shoulders straight and arms on hips. Look for one or more changes mentioned above.

Step 2 Raise arms and look for the same changes or any signs of watery, milky, or yellow fluid or blood coming out of one or both nipples.

Step 3 While lying down, feel breasts -- use the right hand to feel the left breast and the left hand to feel the right breast. A firm, smooth touch in a circular motion using the first few finger pads of hand is the right way. Cover the entire breast from top to bottom and side to side.

Step 4 Feel breasts while standing or sitting following the motions mentioned in step 3 -- you may want to do it in the shower when the skin is wet and slippery.

One can also undertake imaging tests such as mammograms, breast ultrasound, and breast MRI to diagnose breast cancer.

Coronaviruses

Coronaviruses are masters of mimicry: Study (New Kerala: 20201029)

<https://www.newkerala.com/news/2020/189308.htm>

Researchers have revealed that coronaviruses are adept at imitating human immune proteins that have been implicated in severe Covid-19 disease.

According to the study, published in the journal Cell Systems, many plants and animals use the art of mimicry to trick their prey or predators.

Viruses employ a similar strategy. Viral proteins can mimic the three-dimensional shapes of their host's proteins to trick the host into helping the virus complete its life cycle.

"Viruses use mimicry for the same reason as plants and animals -- deception," said study author Sagi Shapira from Columbia University Vagelos College of Physicians and Surgeons in the US.

"We hypothesized that identifying viral-protein lookalikes would give us clues to the way viruses, including SARS-CoV-2, cause disease," Shapira added.

In the study, the research team used supercomputers to search for viral mimics with a programme similar to 3D facial recognition software.

They scanned more than 7,000 viruses and over 4,000 hosts across the Earth's ecosystems and uncovered six million instances of viral mimicry.

"Mimicry is a more pervasive strategy among viruses than we ever imagined," Shapira said.

It's used by all kinds of viruses, regardless of the size of the viral genome, how the virus replicates, or whether the virus infects bacteria, plants, insects or people.

But some types of viruses used mimicry more than others. Papilloma and retroviruses, not so much.

Coronaviruses, on the other hand, are particularly good at it and were found to mimic over 150 proteins, including many that control blood coagulation or activate complement -- a set of immune proteins that help target pathogens for destruction and increase inflammation in the body.

"We thought that by mimicking the body's immune complement and coagulation proteins, coronaviruses may drive these systems into a hyperactive state and cause the pathology we see in infected patients," Shapira said.

Over the course of the pandemic, it has become clear that many Covid-19 patients have coagulation problems and some are now treated with anti-coagulants and drugs that limit complement activation.

In a separate paper published in the journal Nature Medicine, the Columbia researchers found evidence that functional and genetic dysregulation in immune complement and coagulation proteins are associated with severe Covid-19 disease.

Smokers

Young smokers three times more likely to die prematurely: Study (New Kerala: 20201029)

<https://www.newkerala.com/news/2020/189230.htm>

Current smokers faced nearly three times the risk of premature death from cardiovascular disease compared with people who never smoked, with the risk being higher among those who began smoking during childhood, say researchers.

"It was surprising to see how consistent these findings were with our earlier research and with other studies from around the world both in terms of the substantial risks associated with smoking and with the health benefits of quitting smoking," said lead study author Blake Thomson from the University of Oxford in the UK.

The age at which a person begins smoking is an important factor, and those who start smoking at a young age are at especially high risk of dying prematurely, the study, published in the Journal of the American Heart Association, reported.

However, quitting can substantially reduce that risk, especially for those who quit at younger ages. Getting people to quit smoking remains one of the greatest health priorities globally.

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Those who quit smoking by the age of 40 reduced their excess risk of premature death from cardiovascular disease by about 90 per cent.

Quitting smoking at any age offered benefits, and the earlier a person quit, the better, according to the findings.

The analysis found that when compared to peers who had never smoked, those who were current smokers had nearly three times the risk of dying prematurely from heart disease or stroke.

The researchers said that more research is needed to better clarify the mechanisms by which prolonged smoking from childhood affects cardiovascular risk.

Common retinal diseases

New treatment for common retinal diseases shows promise (New Kerala: 20201029)

<https://www.newkerala.com/news/2020/189186.htm>

Researchers have uncovered a potential new strategy for treating eye diseases that affect millions of people around the world, often resulting in blindness.

Many serious eye diseases -- including age-related macular degeneration, diabetic retinopathy and related disorders of the retina -- feature abnormal overgrowth of new retinal blood vessel branches, which can lead to progressive loss of vision.

It's a phenomenon called "neovascularization."

For the past decade and a half, eye doctors have been treating these conditions with drugs that block a protein, VEGF, that's responsible for spurring new vessel growth.

Such drugs have improved the treatment of these conditions, but don't always work well and have potential safety issues.

The current study, published in the journal Proceedings of the National Academy of Sciences, showed that a new approach that doesn't target VEGF directly is highly effective in mice and has broader benefits than a standard VEGF-blocking treatment.

"We were thrilled to see how well this worked in the animal model," said study author Rebecca Berlow from Scripps Research Institute in the US.

"There really is a need for another way to treat patients who do not respond well to anti-VEGF treatments," Berlow added.

For the findings, the research team conducted tests in a mouse model of retinal hypoxia and neovascularization, using a fragment of CITED2 that contains its functional, hypoxic-response-blocking elements.

They showed that when a solution of the CITED2 fragment was injected into the eye, it lowered the activity of genes that are normally switched on by HIF-1a in retinal cells, and significantly reduced neovascularization.

Moreover, it did so while preserving, or allowing to re-grow, the healthy capillaries in the retina that would otherwise have been destroyed --researchers call it "vaso-obliteration" -- in this model of retinal disease.

In the same mouse model, the researchers tested a drug called aflibercept, a standard anti-VEGF treatment.

It helped reduce neovascularization, but did not prevent the destruction of retinal capillaries.

However, reducing the dose of aflibercept and combining it with the CITED2 fragment yielded better results than either alone, strongly reducing neovascularization while preserving and restoring retinal capillaries.

CITED2's ability to combine these two benefits appears to represent a key advance, the researchers concluded.

The researchers now hope to develop the CITED2-based treatment further, with the ultimate goal of testing it in human clinical trials.

Malaria infection

Females clear asymptomatic malaria infection faster than males, suggest study New Kerala: 20201029)

<https://www.newkerala.com/news/2020/189084.htm>

A recent study revealed that females are able to clear asymptomatic malaria infections at a faster rate than their male counterparts.

The study was published in eLife.

The findings, originally posted on the preprint server medRxiv*, suggest that biological sex-based differences are an important factor for epidemiologists to consider in the human response to malaria parasites.

Malaria remains a significant global health challenge, with infections causing disease symptoms that range from uncomplicated to severe. Additionally, asymptomatic malaria infections are common in places where the disease occurs most often, known as endemic areas. Due to partial immunity, individuals can carry parasites for long periods of time while unaware that they are infected.

It is well established that chronic asymptomatic infection with the most common and fatal malaria parasite, *Plasmodium falciparum* (*P. falciparum*), can cause morbidity in those infected and contribute to ongoing disease transmission. As these infections represent an important part of the parasite reservoir and are therefore a major obstacle for efforts to eliminate malaria, characterising them is crucial.

"While it is widely recognised that pregnant women have increased susceptibility to malaria infection and more severe outcomes, less attention has been paid to the possibility of other biological sex differences in malaria immunity," said lead author Jessica Briggs, Clinical Fellow in Infectious Diseases, UC San Francisco, US. "This is despite multiple studies demonstrating males are more frequently found to be infected when you go out and check in a community."

Understanding the immune response of humans to chronic *P. falciparum* infection requires frequent follow up of infected individuals, sensitive detection of parasites, and the ability to distinguish 'superinfection' from a persistent infection. Superinfection is common in endemic areas and refers to an individual acquiring a new infection when they are already infected.

In their study, Briggs and the team followed a representative group of people living in a malaria-endemic area of eastern Uganda. Using a genetic sequencing technique called amplicon deep-sequencing, they estimated both the rate of new infections and duration of chronic asymptomatic malaria infections in the group and compared these measures by sex.

Previous studies have reported a higher prevalence of malaria infection in males compared to females, which was also seen in this cohort. Since females had a lower prevalence of infection, but a similar rate of new infections compared to males, the team looked at whether there was a difference between the sexes in how quickly they were able to clear infections. "Our analysis revealed that asymptomatic infections cleared naturally - as in, when individuals were not treated by antimalarials - at nearly twice the rate in females versus males," Briggs said.

The authors add that these findings come with some limitations. For example, as co-senior author Isabel Rodriguez-Barraquer, Assistant Professor of Medicine at UC San Francisco, said "There may be other unmeasured factors that affect our results, such as genetic differences or sex-based differences in the use of unreported outside antimalarials."

Despite these limitations, the authors say their findings should encourage scientists to better characterise sex-based differences in malaria. "Our next job is to unearth the underlying biological explanations for these sex-based differences in the human response to malaria," concluded co-senior author Bryan Greenhouse, Associate Professor of Medicine at UC San

Francisco. "We have just begun a systems-based approach to comprehensively evaluate the immune response over time in a new study based in Uganda."

Vaccine (Hindustan: 20201029)

https://epaper.livehindustan.com/imageview/412754_85054460_4_1_29-10-2020_2_i_1_sf.html

ब्रिटेन में वैक्सीन टास्कफोर्स की अध्यक्ष केट बिंघम का बड़ा बयान, कहा-वैक्सीन की पहली पीढ़ी के अपूर्ण होने की आशंका

दावा : पहली वैक्सीन सबके लिए कारगर नहीं

नई दिल्ली | हिन्दुस्तान ब्यूरो

कोरोना वैक्सीन कितनी प्रभावी होगी, कितने लोगों पर असर करेगी? इन सब सवालों के बीच ब्रिटेन में वैक्सीन टास्कफोर्स की अध्यक्ष केट बिंघम ने मंगलवार को कहा कि वैक्सीन की पहली पीढ़ी शायद सबके लिए असरदार नहीं होगी। इसके लिए हमें तैयार रहना चाहिए। संभव है कि वैक्सीन कोरोना के लक्षणों को कुछ हद तक कम कर पाए लेकिन महामारी पर पूरी तरह लगाम लगा दे, ऐसा अभी नहीं दिखता।

ऑक्सफोर्ड समेत कई संस्थानों के वैज्ञानिकों ने भी इसी तरह की आशंका जताई है। लासेट मेडिकल जर्नल में बिंघम ने लिखा, वैक्सीन टास्कफोर्स का अध्ययन के बाद मानना है कि वैक्सीन की पहली पीढ़ी अपूर्ण या त्रुटिपूर्ण होने की संभावना है। जितनी भी वैक्सीन दुनिया में तैयार हो रही हैं, उनमें से अधिकतर असफल साबित हो सकती हैं। इसलिए हमें अति आशावादी नहीं होना चाहिए।

वैक्सीन की पहली पीढ़ी पूरी पड़ जाए यानी सबको मिल जाए, इसकी भी संभावना बेहद कम है। हमें खुद नहीं पता कि हमें कभी भी वैक्सीन मिलेगी या नहीं? क्योंकि टीकों के लिए वैश्विक उत्पादन क्षमता अबों खुरक तैयार करने के लिए काफी अपर्याप्त है। उन्होंने कहा कि हमारी चिंता सिर्फ 6.5 साल से ज्यादा के लोगों को बचाने की है।

200 से ज्यादा वैक्सीन बनाई जा रही दुनियाभर में, इनमें से 44 पर क्लिनिकल परीक्षण जारी

151 वैक्सीन अभी प्री क्लिनिकल चरण में, इनमें से तमाम वैक्सीन के आगे बढ़ने की संभावना जताई गई

09 टीके तीसरे चरण में, 14 दूसरे चरण में जबकि छह को सीमित इस्तेमाल की अनुमति मिली

बहुत भारीसे के साथ कुछ नहीं कह सकते: डब्ल्यूएचओ

विश्व स्वास्थ्य संगठन के मुताबिक, कोई भी टीका अगर 50 फीसदी भी प्रभावी होगा और उसका कोई दुष्प्रभाव नहीं होगा तो उसे अनुमति दे दी जाएगी। हालांकि, संस्थान के वैज्ञानिक काला सुबाबाय ने कहा, कई वैक्सीन टीक ढंग से काम कर रही हैं लेकिन बहुत भारीसे के साथ कुछ भी नहीं कहा जा सकता।

तुलनात्मक अध्ययन जरूरी

ऑक्सफोर्ड के वैज्ञानिकों के मुताबिक, लोगों को बचाने व संक्रमण फैलने से रोकने में जो टीका सबसे कारगर पाया जाएगा, वही सर्वश्रेष्ठ होगा। इसके लिए तमाम टीकों में से सबसे प्रभावी टीके की तलाश करनी होगी। हर टीके की अलग-अलग डिजाइन होने से अलग-अलग कारगर करने की क्षमता होना रचनात्मक है।



अमेरिका के टेक्सास में बुधवार को गाहन वातकों का कोरोना टेस्ट करते चिकित्सकमी। • गैट्स

पांच बड़ी चिंता

1 यूके में ब्रिटिश विश्वविद्यालय से प्रो एडम किन के मुताबिक, टीका सबसे पहले बनाने की जटिलताओं में हम कई प्रक्रियाओं को छोड़ रहे हैं। कई देश चुनते इसी से टीकाकरण करने जा रहे, जिसका दुष्प्रभाव संभव है।

2 सैकड़ों वैक्सीन बनाई जा रही, जिनमें लाखों लोगों पर अब तक परीक्षण किया जा चुका है। अगर इनमें से सबसे बेहतर की तलाश करनी होगी तो काफी मुश्किल हो

जाएगी क्योंकि वैक्सीन की संख्या काफी ज्यादा है।

3 वैज्ञानिकों के मुताबिक, अभी बन रही ज्यादातर वैक्सीन संक्रमण के लक्षण कम करने में सफल पाई गई हैं, यह संक्रमण का प्रसार रोकने में कितनी कारगर होगी, इसका परीक्षण किया जाना बाकी है। यह बड़ी चुनौती।

4 इंपीरियल कॉलेज ऑफ लंदन के वैज्ञानिकों ने पाया कि ब्रिटिश लोगों में एंटीबॉडी

लगातार कम हो रही। यानी कुछ दिनों बाद ही फिर सक्रिय होने का खतरा है। यह बार-बार होगा और कब तक वैक्सीन लगाई जाएगी।

5 अभी सिर्फ चयन के लिए वैक्सीन ढूँढने का काम चल रहा है, इसके बाद बच्चों-गर्भवती महिलाओं, बुजुर्गों व अन्य वर्ग विशेष के लिए वैक्सीन बनाई जानी है, जिसमें काफी समय लग सकता है। इससे संक्रमण बढ़ने की आशंका से इनकार नहीं किया जा सकता।

कौन सा टीका किस चरण में

● **कोवैक्सीन**
भारत बायोटेक की इस वैक्सीन को हाल ही में तीसरे चरण के परीक्षण की मंजूरी मिली है। 18 साल के ऊपर के 28000 से ज्यादा लोगों पर परीक्षण किए जाएंगे। मार्च तक वैक्सीन आने की उम्मीद

● **ऑक्सफोर्ड-एस्ट्रोजेनिका**
ब्रिटिश मीडिया के मुताबिक, अगले हफ्ते से इस वैक्सीन का ब्रिटेन में इस्तेमाल किया जाएगा। सरकार ने एक बड़े अस्पताल में तैयारियां भी शुरू कर दी हैं

● **सिनोवैक**
चीन की यह वैक्सीन लांच कर दी गई है। सरकार ने टीके का सीमित इस्तेमाल करने की अनुमति दी है। शांघाई शहर में 18-59 साल के लोग वैक्सीन के लिए ऑनलाइन आवेदन कर सकते हैं

● **जॉनसन एंड जॉनसन**
अमेरिका की इस वैक्सीन का 60,000 लोगों पर तीसरे चरण का ट्रायल चल रहा है। कंपनी को उम्मीद कि जनवरी तक इसका सीमित इस्तेमाल करने की अनुमति मिल जाएगी

● **रुसवैक**
रुस की यह वैक्सीन एक माह पहले ही लांच हुई थी। रुस के कई प्रांतों में टीकाकरण हो रहा है। ब्राजील समेत कई देशों में इसकी मांग है।