



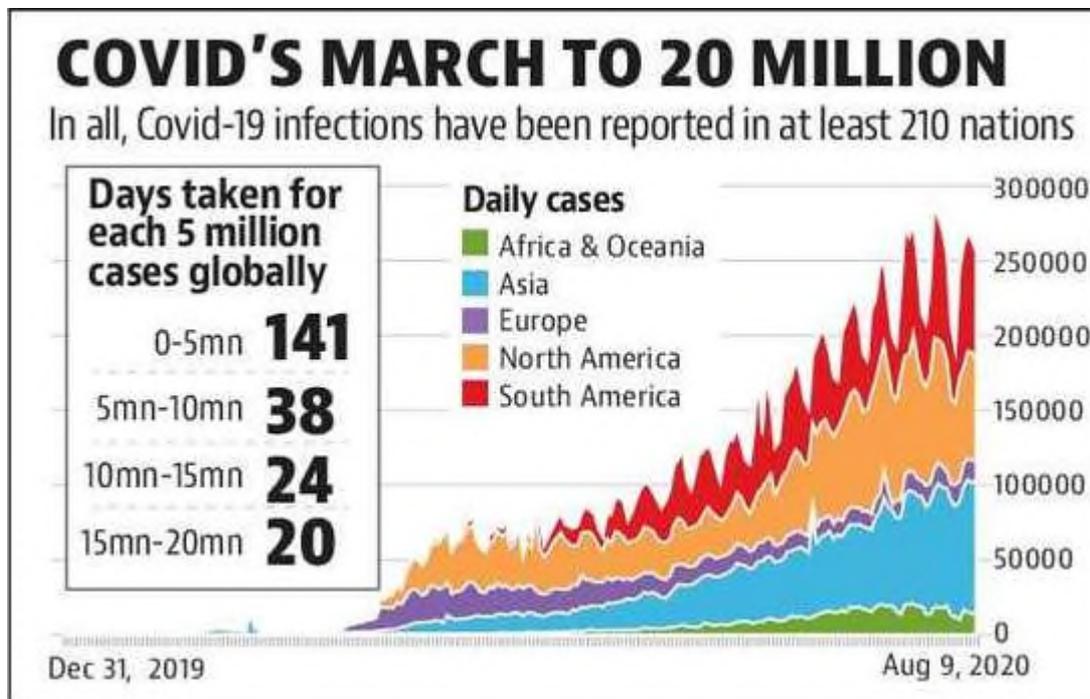
DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Monday 2020810

COVID-19

India's trajectory a worry as the world nears 20mn cases COVID-19: Quicker transmission in last 7 days than Brazil, US: Data (Hindustan Times: 2020810)

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



New Delhi : India's trajectory of daily cases of Covid-19 is now ahead of that of the United States's, making it the country with the highest number of daily infections, as total cases globally appear set to breach the 20 million-mark on Sunday night with the US, India and Brazil leading the surge in infections.

As the pandemic accelerates in some of the world's most populous regions, 19,922,762 total cases of the coronavirus disease had been recorded across the world till late Sunday night with 731,747 fatalities — reflecting a global case fatality rate of 3.7%. Of these, 2,212,737 cases and 44,462 deaths have been reported in India (CFR of 2.01%), which is the third worst-hit nation in the world after the US and Brazil.

In the seven-day period between August 1 and August 8, India reported 399,263 new Covid-19 cases against 384,089 cases in the US — the highest and second highest most daily cases globally. This is the first time the average weekly trajectory in India eclipsed United States's, which has been hit the hardest by the pandemic by a significant margin. The average daily new cases over the past week indicates India may be beginning to close the gap.

To be sure, the US on Sunday reached the extraordinary milestone of five million cases, more than twice those in India. Even Brazil, which breached the three million-mark on Sunday, has nearly 800,000 more cases than India, so the latter may not be overtaking the two worst-hit countries any time soon.

Brazil had the third highest number of daily cases on average in the above mentioned time period – 304,493. In the seven days before that, India reported 366,196 new infections while the US reported 447,026 and Brazil 312,442, according to HT's dashboard and Worldometer. This is the first time in a month-and-a-half that any country's cases have grown faster than the US's. The last time this happened was on June 25, when Brazil was reporting a steady spike in cases and the second surge of cases in the US was only kicking off.

Among the three worst-hit nations, only India's trajectory is currently rising — the other two have been reporting a near-steady decline in new infections over the past few weeks.

Together, US, Brazil and India were responsible for more than 1.1 million (61%) of the 1.8 million new cases reported across the world. In all, infections have been reported in at least 210 countries and territories since the first cases were identified in China in December 2019. After a rapid initial outbreak, China managed to control the outbreak by the end of February. However, by then, the virus spread to several other countries, particularly in Europe. Italy became one of the earliest hot spots of the outbreak in Europe along with Spain, the United Kingdom and Germany.

The World Health Organization declared the outbreak a public health emergency on January 30, 2020, and a pandemic on March 11, 2020. The US, meanwhile, has been the worst-hit nation in the world since it overtook China on March 26. As of Sunday night, it has more than 5,166,319 cases and 165,269 deaths.

In terms of continents, nearly a third (31%) of cases have come from North America, followed by Asia's 25% of cases and South America's 24% of cases. Europe accounts for over 15% of all confirmed cases in the world.

As countries across the world started lifting months of lockdowns, many that had largely controlled a first wave, started seeing a second wave. Key among them was the US, but cases have also been rising in Europe the past few weeks with nations such as Spain, Italy reporting new batches.

Covid-19: What you need to know today (Hindustan Times: 2020810)

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

It was a weekend that saw a succession of grim milestones as the coronavirus disease continues to ravage countries around the world — with the US, Brazil and India being the most affected.

The global case number will most likely cross the 20-million mark on Monday. On Saturday, the US crossed the 5-million case mark, Brazil crossed the 3-million case mark, and also 100,000 deaths, and, closer home, Maharashtra, the Indian state worst affected by the pandemic, crossed 500,000 cases. All are worrying numbers.

The US, with a little over 5 million cases as of Sunday morning has added 47% of its caseload since July 1. July and August have been bad months for all three countries. India, with around 2.15 million cases as of Sunday morning, added 73% of its caseload in the same time. And Brazil, with a little over 3 million cases, added 53% of its caseload in the 39-day period. The numbers have been compared using data from worldometers.info.

It is a mathematical certainty that deaths will rise, if only with a lag, as cases increase (they have continued to in India and Brazil; the US saw a dip in mid-June, with 7-day average of daily new cases falling to the low 20,000s, but has since witnessed a sharp rise; the current 7-day average according to the New York Times databases is around 54,000; all 7-day averages are from the database). The US has seen this, with 7-day average of daily deaths climbing to around 1,000 now, after falling to the 500s in June. India's 7-day average of daily deaths has risen to around 860. Brazil's has been around the 1,000 mark since late May. The overall case fatality rate (number of deaths as a proportion of number of cases) for the US was 3.2%, India, 2%, and Brazil, 3.33%. Even as the number of cases has increased, this proportion has declined for all three countries — the corresponding numbers on June 30 for the US was 4.8%, Brazil, 4.2%, and India, 3%. Clearly, as this columnist has previously mentioned, we appear to be getting better at saving lives — which is understandable. Doctors around the world are discovering which intervention and medicine works best at each stage of the disease, information that is being shared almost in real-time. Some of the therapies (including plasma therapy) are experimental and there is a bit of a hit-and-miss involved, but, in general, health systems around the world are seeing fewer deaths.

This is starkly evident when only the cases and deaths registered since July 1 are considered. The US saw a case fatality rate of 1.43% in this period, India, 1.66%, and Brazil, 2.55%. To be sure, while this is how case fatality rates are calculated, there is some internal inconsistency in this calculation, one that has been previously pointed out by some experts — deaths lag corresponding cases by two to three weeks. Still, these numbers do highlight the trend that's clearly visible in the US and India especially (Brazil's numbers are a little too volatile for it to be included in this): more cases through July and August, but fewer deaths.

Over the last two weeks, interestingly, the US has been on a decreasing curve of daily new cases, evident in its declining 7-day average, which has fallen by around 13,000 cases in this period. India, over these two weeks, has been on an increasing curve of new cases, with new hot spots showing clusters of cases emerging in the hinterland and the peninsula. According to the NYT database, India's 7-day average on August 8 was around 3,500 higher than the

corresponding number for the US. That is a worrying trend, even if allowances were to be made for India's much higher population.

Human sperm

Human sperm swims in entirely different way than earlier thought (The Tribune: 2020810)

<https://www.tribuneindia.com/news/health/human-sperm-swims-in-entirely-different-way-than-earlier-thought-124236>

Human sperm swims in entirely different way than earlier thought
Photo for representational purpose only.

In a breakthrough for fertility science, scientists have shattered the universally accepted view of how sperm 'swim'.

About 300 years ago, Antonie van Leeuwenhoek used one of the earliest microscopes to describe human sperm as having a "tail, which, when swimming, lashes with a snakelike movement, like eels in the water".

This is an optical illusion, according to the new study.

"Human sperm figured out if they roll as they swim, much like playful otters corkscrewing through water, their one-sided stroke would average itself out, and they would swim forwards," said study author Hermes Gadelha from the University of Bristol in the UK.

"The sperms' rapid and highly synchronised spinning causes an illusion when seen from above with 2D microscopes -- the tail appears to have a side-to-side symmetric movement, like eels in the water, as described by Leeuwenhoek in the 17th century," Gadelha added.

Using state-of-the-art 3D microscopy and mathematics, the research team has pioneered the reconstruction of the true movement of the sperm tail in 3D.

Using a high-speed camera capable of recording over 55,000 frames in one second, and a microscope stage with a piezoelectric device to move the sample up and down at an incredibly high rate, they were able to scan the sperm swimming freely in 3D.

The study, published in the journal Science Advances, revealed the sperm tail is, in fact, wonky and only wiggles on one side.

While this should mean the sperm's one-sided stroke would have it swimming in circles, sperm have found a clever way to adapt and swim forwards.

"Our discovery shows sperm have developed a swimming technique to compensate for their lop-sidedness and in doing so have ingeniously solved a mathematical puzzle at a microscopic scale: by creating symmetry out of asymmetry," said Gadelha.

According to the researchers, the otter-like spinning of human sperm is however complex: the sperm head spins at the same time that the sperm tail rotates around the swimming direction.

This is known in physics as precession, much like when the orbits of Earth and Mars precess around the sun.

This discovery, with its novel use of 3D microscope technology combined with mathematics, may provide fresh hope for unlocking the secrets of human reproduction.

"With over half of infertility caused by male factors, understanding the human sperm tail is fundamental to developing future diagnostic tools to identify unhealthy sperm," Gadelha noted.

Low-cost method to test mask effectiveness against viral droplets

Covid-19: Scientists develop low-cost method to test mask effectiveness against viral droplets (The Tribune: 2020810)

<https://www.tribuneindia.com/news/health/covid-19-scientists-develop-low-cost-method-to-test-mask-effectiveness-against-viral-droplets-124234>

Covid-19: Scientists develop low-cost method to test mask effectiveness against viral droplets
Photo for representational purpose only.

Using widely available tools, scientists have developed a simple method to visualise how effectively different types of masks prevent the spread of droplets that could contain novel coronavirus particles, an advance which could aid small scale mask producers to optimise designs, and help community outreach organisations demonstrate proper mask fitting procedures.

The technique, described in the journal Science Advances, is still in the early stages, and has so far only been tested in a small group of people, the scientists said.

According to the researchers from Duke University in the US, the preliminary, proof-of-principle findings suggest that professional-grade N95 masks, surgical or polypropylene masks, and handmade cotton masks may all block much of the droplet-spray produced when wearers speak.

However, they said bandanas and neck fleeces likely provide little protection, as the scientists observed that more droplets are expelled through these materials.

They said this is likely because the materials break up larger droplets as they pass through the material.

In the study, the scientists evaluated the effectiveness of 14 different types of masks and other frequently substituted face coverings, using a simple approach in which either one male speaker or, in some cases, four speakers wore each mask while standing in a dark enclosure.

The speaker then uttered the phrase “stay healthy, people” five times in the direction of a laser beam, which scattered light from the droplets released during speech, the study noted.

A cell phone camera recorded the droplets and a simple computer algorithm counted them, the scientists added.

The setup, intentionally designed to be simple and inexpensive, can be replicated by non-experts, according to the researchers.

They said the hardware it requires, including laser equipment, is commonly available and can be purchased for less than USD 200.

While the researchers acknowledge the need for further testing, they suggested based on the findings that N95 masks without valves blocked droplet spread best, and surgical or polypropylene masks and handmade cotton face coverings were also effective.

But the early findings suggested that bandanas and neck fleeces do not provide protection.

“Our work was a demonstration of a simple measurement method, not a systematic mask study,” noted Martin Fischer, the study’s corresponding author.

“More work is required to investigate variations in masks, speakers, and how people wear them. We also want to extend our method to other droplet-generating actions, like coughing and sneezing. Further, we want to explore effects of incorrect placement and moisture saturation,” Fischer said. PTI

Hand sanitiser has 70 per cent alcohol content

Keep your hands safe: Make sure your hand sanitiser has 70 per cent alcohol content (The Tribune: 2020810)

<https://www.tribuneindia.com/news/health/keep-your-hands-safe-make-sure-your-hand-sanitiser-has-70-per-cent-alcohol-content-124191>

Keep your hands safe: Make sure your hand sanitiser has 70 per cent alcohol content
Handwashing remains the best way to protect against coronavirus. istock

Dr Vikas Sharma

OUR hands are repositories for micro-organisms. The risk of disease and infections like Covid-19 gets greatly reduced by timely washing or appropriately sanitising the hands. Handwashing, which removes germs from your skin, remains the best way to protect against coronavirus and other pathogens.

Washing hands with water and using hand sanitisers help to remove or destroy potentially harmful micro-organisms. If soap and water are not available, the Centre for Disease Control and Prevention recommends using alcohol-based hand sanitisers containing at least 60 per cent alcohol. Hand sanitisers are drugs, which come in gel, foam and liquid formulations. These kill most germs but do not remove them from your skin. Alcohol rub sanitisers kill most bacteria and stop some viruses. If the sanitiser bottle contains at least 70 per cent alcohol, it can kill 99.9 per cent of the micro-organisms on hands in 30 seconds.

Dos

The alcohol in hand sanitiser works best when you rub it all over your hands, making sure to get it between your fingers and on the back of your hands.

Do not wipe or rinse off the sanitiser before it is dry.

Do not use the sanitiser if your hands are visibly dirty or greasy; wash your hands with soap and water instead.

To properly coat your hands, you need to apply about 3 ml of sanitiser (more than half a teaspoon).

Check the bottle for active ingredients. It might say ethyl alcohol, ethanol, isopropanol or some other chemical. All those are fine. But make sure that whichever of those alcohols is listed, its concentration is between 60 and 95 per cent. An alcohol concentration under 60 per cent won't kill the microbes.

Hand sanitisers can be useful if you have no soap or water around but if you have the latter, then go for the good old option.

Check the labels on the bottle mentioning the constituents.

Water is an essential ingredient of healthy skin. If the top layer gets too dry, skin can become itchy, scaly, inflamed and leathery. Adequately moisturise your hands.

Don'ts

Excessive and overuse of alcohol-based sanitisers can weaken the skin and remove benign bacteria that fend off norovirus and other pathogens. Such cases were nearly six times more at risk for outbreaks of norovirus, which causes most cases of acute gastroenteritis.

Sanitising one's hands too many times can abrade the skin, which normally acts as a barrier to keep moisture in and harmful agents out.

The skin of the hands can become painfully dry and cracked by over-usage of hand sanitisers. All this can cause micro-breaks in your skin because your skin is dry. Although the coronavirus primarily enters the body through the eyes, nose, and mouth, skin micro-breaks or skin fissures may cause other kinds of discomfort.

Sanitiser overuse can compromise the skin barrier. The alcohol base that makes these products effective can be irritating to the skin. Alcohol strips the skin barrier of essential proteins and lipids, resulting in irritation and dryness.

Sanitisers don't clean off food residue. Fats and sugar deposits don't vanish from your hands even if you sanitise your hands. Use soap and water to wash them away.

Smelling too much sanitiser can cause a serious headache or a migraine. Nausea and vomiting can also happen when inhaling fumes from the sanitiser.

Over usage of some hand sanitisers is harmful due to the presence of certain ingredients in them: Triclosan, an active ingredient in some sanitisers, if used in excess contributes to making bacteria resistant to antibiotics. Using hand sanitisers with high concentration of this ingredient may actually lower your resistance to diseases by killing the good bacteria.

Another ingredient in hand sanitisers, bisphenol, if used in excess, can be dangerous as it can cause hormone disorders, heart disease, infertility, and even diabetes.

Commonly used hand sanitisers contain chemicals that increase the ability of certain compounds to penetrate deep under the skin. Chemicals like bisphenol linger on the skin. If a person eats right after applying sanitiser on his/her hands, he/she would be effectively getting a double dose of the chemical, once through the skin and the second time by eating it.

Triclosan in higher quantities can affect the immune function.

Atopics or those having hand dermatitis or eczemas, palmar psoriasis should avoid using hand sanitisers as their existing skin cell disturbances can get aggravated.

— The writer is chief consultant dermatologist, National Skin Hospital, Mansa Devi Complex

Covid-19 vaccine

Serum Institute of India to price Covid-19 vaccine at USD 3 per dose (The Tribune: 2020810)

<https://www.tribuneindia.com/news/health/serum-institute-of-india-to-price-covid-19-vaccine-at-usd-3-per-dose-123458>

SII to produce 100 mn doses of Covishield for India and other low- and middle-income nations

Serum Institute of India to price Covid-19 vaccine at USD 3 per dose

Photo for representational purpose only.

World's leading vaccine maker Serum Institute of India on Friday said it would produce up to 100 million Covid-19 vaccine doses for India and low- and middle-income countries as early as 2021.

The institute in a statement said it would price each dose of the vaccine for USD 3 which roughly translates into Indian Rupees 225.

SII issued the statement after entering into what it called a new landmark collaboration between the SII, GAVI (Global Alliance for Vaccines) and Bill and Melinda Gates Foundation.

SII to get \$150 mn from Gates Foundation

Under the arrangement the Bill and Melinda Gates Goundation via its strategic investment fund will provide at-risk funding of USD 150 million to GAVI which will be used to support the SII to manufacture the potential vaccine candidates.

“Vaccines will be priced at maximum USD 3 per dose and made available to the 92 countries included in GAVI’s COVAX Advance Market Commitment,” Adar Poonawala-led SII said in a statement.

Pune based Serum Institute has partnered with Oxford University and British Swedish Pharma firm Astra Zeneca to mass produce the frontrunner COVID 19 vaccine Covishield which has entered phase 3 clinical trials in some countries after showing safety and immune response in phase 1 and 2 studies in the UK.

Indian Drug controller has also permitted SII to undertake phase 2 and 3 human trials on Covishield in India.

Testing (The Asian Age: 2020810)

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=15033142>

65K cases in a day, HealthMin says due to high testing

AGE CORRESPONDENT
NEW DELHI, AUG. 9

Close to 65,000 coronavirus cases were detected in the past 24 hours, taking India’s overall cases past 21.5 lakhs till Sunday morning, as per the health ministry’s data. The biggest contributors to this single-day spike are Maharashtra and Andhra Pradesh, which have reported over 10,000 cases in a day, while Uttar Pradesh, Karnataka,

Bihar and West Bengal too have started detecting a high number of cases.

Delhi, where the numbers had fallen impressively, is again reporting a high number of cases. Delhi’s health minister, however, said the rise in Delhi’s numbers was due to people from outside coming for testing and treatment, which was adding to its tally.

Union health ministry officials said such high numbers of positive cases

were due to increased testing. In a new high, India has scaled the peak of conducting more than seven lakh tests in a single day — 7,19,364 tests were done in the past 24 hours. India has so far done 2,41,06,535 tests.

“Such high levels of testing will also lead to a high number of daily positive cases, but the states have been advised to firmly focus on comprehensive tracking, prompt isolation and effective treatment. Several meetings have



been held in the past week to engage with states that are showing a higher fatality rate,” health min-

istry officials said.

They added that such an approach of high testing has started showing results and recoveries are also increasing exponentially — India recorded the highest number of recoveries in a single day, with 53,879 patients having recovered and discharged on Saturday. With this, the total number of recovered cases touched a high of 14,80,884 on Sunday.

“This is more than twice the number of active cases

(6,28,747). The number of recovered cases has touched another high of 2.36 times the active cases, which are all under medical attention either in home isolation or in hospitals,” officials said.

With a higher number of recovered patients, the recovery rate is 68.78 per cent. The case fatality rate has fallen to 2.01 per cent, though 43,379 deaths were reported so far, of which 861 were in the last 24 hours.

Knee osteoarthritis

Study finds bone drug may be beneficial for knee osteoarthritis (New Kerala: 2020810)

<https://www.newkerala.com/news/2020/140917.htm>

Bisphosphonates -- the drugs that prevent the loss of bone density and used to treat osteoporosis and similar diseases appear to be safe and beneficial for osteoarthritis patients, in a recent study.

Osteoarthritis (OA) is the most common form of arthritis and a leading cause of disability worldwide with more than 300 million sufferings with the condition, yet there are no effective treatments to stop the disease or its progression.

One of the lesions in OA that causes pain and progression of the structural pathology of the disease is bone marrow lesions.

Researchers believe bisphosphonates may alter bone marrow lesions, and thereby could improve pain in OA and halt its progression. Alternatively, they could also alter the mechanical properties of bone, thereby potentially contributing to detrimental effects.

Using data from the Osteoarthritis Initiative, a longitudinal cohort of people with or at risk for knee OA, the researchers identified women who started bisphosphonates and matched them to women who weren't on the drug.

Measurements in bone marrow lesion volume were taken when they first started on bisphosphonate and then a year later. Changes in bone marrow lesion volume between the two groups were then compared. "When we looked at those who had bone marrow lesions at baseline, we found that the women who started bisphosphonates had had more bone marrow lesions that decreased in size than the women who did not start bisphosphonates," said corresponding author Tuhina Neogi, MD, Ph.D., professor of medicine and epidemiology at Boston University Schools of Medicine and Public Health.

"These results suggest that bisphosphonates do not appear to be harmful, at least over one year, and perhaps may even help decrease bone marrow lesions in those that have them," added Neogi.

According to the researchers, effective treatments for osteoarthritis are desperately needed. "By examining existing data for potential signals of efficacy and safety, we can identify potentially promising therapies that should be further tested in trials with the aim to ameliorate the pain of osteoarthritis and improve the quality of life for the millions of people worldwide that have this disease," added Neogi, chief of rheumatology at Boston Medical Center.

Nutrition, cardiovascular disease

Nutrition, cardiovascular disease experts urge evaluation of diet at routine healthcare check-(New Kerala: 2020810)

<https://www.newkerala.com/news/2020/140906.htm>

A group of nutrition and cardiovascular disease experts issued a new scientific statement which states that the time has come for routine healthcare visits to include some form of dietary assessment and counselling.

The statement issued from the American Heart Association was published today in *Circulation Cardiovascular Quality and Outcomes*, an American Heart Association journal. The experts recommend the adoption of a rapid diet screening tool that can be integrated into electronic health record platforms across all healthcare settings.

"Dietary patterns and quality are not sufficiently prioritised when addressing modifiable risk factors during regular healthcare office visits. Given the evidence that diet contributes to disease and mortality, it is a risk factor worth screening for continuously," said Maya Vadiveloo, Ph.D., RD, chair of the statement writing group and assistant professor of nutrition

and health sciences in the College of Health Science at the University of Rhode Island in Kingston, Rhode Island.

Poor diet quality has surpassed all other risk factors for death, accounting for 11 million deaths and about half of the cardiovascular disease (CVD) deaths globally, according to the 2017 Global Burden of Disease Study, a comprehensive report on the health impact of diet in 195 countries around the world.

The statement authors reviewed 15 existing screening tools, assessing each to provide insight into the feasibility of incorporating an evidence-based dietary screening tool into routine practice.

The authors list numerous reasons why members of a healthcare team may not address diet quality during a routine office visit: lack of training and knowledge; lack of time and reimbursement; competing demands during the often short office visit and that nutrition services aren't integrated into many healthcare settings. "However, these barriers can be overcome," said Vadiveloo. "We want a valid, reliable way to assess diet that reflects the best science and most of the tools assessed take under 10 minutes to use."

Three of the tools assessed to meet criteria set forth in the statement and may provide a framework to help practices incorporate diet screening into their workflow. The Powell and Greenberg Screening Tool asks two questions about fruit and vegetable consumption and sugary food and juice consumption.

The Rapid Eating Assessment for Participants-Shortened assessment and the Mediterranean Diet Adherence Screener ask more than 10 questions and cover major food groups, as well as processed foods and alcohol consumption.

The keys to an effective diet screening tool include-Using an evidence-based approach;

-Assessing the total dietary pattern, not just a single food or nutrient;

-Speed;

-The ability to give actionable next steps and support to patients; and

-The ability to track and monitor dietary change over time.

"There are other tools beyond what was assessed and additional tools could be developed," said Vadiveloo. While the statement does not endorse a specific screening tool, it encourages critical conversations among clinicians, individuals with diet/lifestyle expertise, and specialists in information technology to adopt rapid diet screening tools for adults in primary care and relevant specialty care and prevention settings.

"An important component in addition to evaluating diet quality is targeting actionable changes - helping patients set achievable dietary goals - and then following up at the next visit," said Alice H. Lichtenstein, D.Sc., vice-chair of the writing group and lead and senior scientist of the Cardiovascular Nutrition Team at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University in Boston. Areas for future study include testing and validating

screening tools in diverse populations, as well as among special clinical populations (paediatrics, geriatrics), and evaluating the feasibility of implementing these tools in clinical settings.

A healthy diet can improve cardiovascular disease risk and outcomes. What you eat (and how much) can affect other controllable risk factors, such as cholesterol, blood pressure, diabetes, and being overweight.

COVID-19 deterioration

Study reveals blood test may point to patients at higher risk for COVID-19 deterioration, death (New Kerala: 2020810)

<https://www.newkerala.com/news/2020/140826.htm>

In a breakthrough study, researchers found five biomarkers, medical indicators found in the blood, associated with higher odds of clinical deterioration and death in COVID-19 patients.

The study led by George Washington University (GW) has been published in the journal - Future Medicine. These findings will help physicians better predict outcomes for COVID-19 patients in the US.

"When we first started treating COVID-19 patients, we watched them get better or get worse, but we didn't know why," said Juan Reyes, MD, co-author of the study and assistant professor of medicine at the GW School of Medicine and Health Sciences.

"Some initial studies had come out of China showing certain biomarkers were associated with bad outcomes. There was a desire to see if that was true for our patients here in the US," added Reyes. The research team evaluated 299 patients diagnosed with COVID-19 admitted to GW Hospital between March 12 and May 9, 2020. Of these patients, 200 had all five biomarkers being evaluated - IL-6, D-dimer, CRP, LDH and ferritin.

Elevated levels of these biomarkers were associated with inflammation and bleeding disorder, showing an independent increased risk for ICU admission, invasive ventilatory support, and death. The highest odds of death occurred when the LDH level was greater than 1200 units/l and a D-dimer level was greater than 3 mg/ml.

"We hope these biomarkers help physicians determine how aggressively they need to treat patients, whether a patient should be discharged, and how to monitor patients who are going home, among other clinical decisions," said Shant Ayanian, MD, first author of the study and assistant professor of medicine at the GW School of Medicine and Health Sciences.

Currently, physicians determine risk for COVID-19 deterioration and death based on age and certain underlying medical conditions, like having an immunocompromised state, obesity, and heart disease.

Performing a simple blood test for patients admitted to the emergency department, then also making decisions based on biomarkers present, may further aid point-of-care clinical decision making. Reyes, Ayanian, and the GW research team will continue to analyze this data to help physicians make more informed decisions for patients, as well as help hospitals that may need to stratify resources.

Alcoholism

Drug used to treat alcoholism useful in fight against COVID-19: Study (New Kerala: 2020810)

<https://www.newkerala.com/news/2020/140811.htm>

With the use of molecular modelling, two medications that have been known for a long time can be used to fight SARS-CoV-2, found a team of chemists from HSE University and the Zelinsky Institute of Organic Chemistry.

These are disulfiram, which is used to treat alcoholism, and neratinib, an experimental drug being used to treat breast cancer. The paper about the discovery has been published online in the 4th issue of Mendeleev Communications journal.

The structural elements of the virus that are less subject to mutation during its evolution should be chosen as a target for the potential treatment. Otherwise, a medication effective against one strain would no longer be effective against another.

The best candidates for this are conservative proteins, such as the SARS-CoV-2 virus main protease M pro. In addition to being resistant to mutations, M pro plays a major role in coronavirus replication, which means that its inhibition (blocking its function) is able to slow down or even completely stop its reproduction inside the body.

Usually, the process of docking, as with a port dock and a ship entering it, is used for molecular modelling in simple cases. Two molecules participate in docking. One is called a 'ligand' (here, it is a medicine), and the other one is 'receptor' (or active site) of the target protein, such as Mpro, which can be used to 'dock'. An effective drug docks with the active site, by covalent links, which makes the enzyme dysfunctional or destroys it. But classical docking does not work in SARS-CoV-2.

To overcome this problem, chemists from HSE University and the Zelinsky Institute decided to use 'on-top docking', which they came up with shortly before the pandemic.

'We decided not to focus on the previously described active site, but to investigate the whole surface of M pro-protein with many medications, hoping that the big calculation powers would return useful "dockings", - said Igor Svitanko, the author of the article, Professor at the HSE Joint Department of Organic Chemistry with the RAS Zelinsky Institute of Organic Chemistry.

The researchers used the spatial model of SARS-CoV-2 Mpro created in January 2020 from PDB database (ID 6LU7). The potential drugs were taken from the database of medications approved by the United States Food and Drug Administration (FDA). The research team's own algorithms were used for modelling.

The modelling data demonstrated that sulphur-containing drugs show unusually high ligand efficiency at the active centre of SARS-CoV-2 main protease Mpro, but only disulfiram 4 retains stable interactions.

Today, it is most commonly used for treating alcoholism. Disulfiram fights SARS-CoV-2 in two ways. First, as previously demonstrated in vitro with SARS and MERS coronaviruses, it is a covalent inhibitor.

In addition, it fights COVID-19 symptoms such as the significant decrease in reduced glutathione, which is an important antioxidant. This deficiency may lead to severe manifestations of the disease.

In addition to disulfiram, the Russian chemists were the first to predict the potential efficiency of neratinib, an irreversible tyrosine kinase inhibitor, against SARS-CoV-2. Just recently, in 2017, FDA approved neratinib as an adjuvant treatment of breast cancer.

Modelling has shown that both potential inhibitors of the main coronavirus protease (M pro) are, presumably, covalent. For example, disulfiram can probably block the M pro enzymatic activity by thiol-disulfide exchange reaction, while neratinib binding suggests the possibility of covalent interaction similarly to covalent peptide inhibitors.

The tests that were performed on July 27, 2020 at Reaction Biology Corp., a certified laboratory in the U.S., demonstrated that disulfiram really inhibits M pro in 100 nm concentration, which confirmed the results of the modelling. Unfortunately, the second substance - neratinib - demonstrated activity on M pro, but it was insufficient for clinical use.

Meanwhile, the main achievement is the demonstration that the 'on-top docking' approach is working and returns quite realistic and controllable results. The team's plans for late 2020 and 2021 include molecular modelling of treatments for diseases that have demonstrated their harmfulness but have not yet spread over the world.

Stress

Laughter can act as stress buffer, study suggests (New Kerala: 2020810)

Laughter can act as stress buffer, study suggests

<https://www.newkerala.com/news/2020/140744.htm>

Basel [Switzerland], August 9: People who laugh frequently in their every day lives may be in a better position to deal with stressful events. However, this does not apply to the intensity of laughter, according to a recent study.

The findings of the new research by the University of Basel were published in the journal PLOS ONE.

It is estimated that people typically laugh 18 times a day -- generally during interactions with other people and depending on the degree of pleasure they experience. Researchers have also reported differences related to the time of day, age, and gender -- for example, it is known that women smile more than men on average. Now, researchers from the Division of Clinical Psychology and Epidemiology of the Department of Psychology at the University of Basel have recently conducted a study on the relationship between stressful events and laughter in terms of perceived stress in everyday life.

Questions asked by the app

In the intensive longitudinal study, an acoustic signal from a mobile phone app prompted participants to answer questions eight times a day at irregular intervals for a period of 14 days. The questions related to the frequency and intensity of laughter and the reason for laughing -- as well as any stressful events or stress symptoms experienced -- in the time since the last signal.

Using this method, the researchers working with the lead authors, Dr Thea Zander-Schellenberg and Dr Isabella Collins, were able to study the relationships between laughter, stressful events, and physical and psychological symptoms of stress ("I had a headache" or "I felt restless") as part of everyday life. The newly published analysis was based on data from 41 psychology students, 33 of whom were women, with an average age of just under 22.

The intensity of laughter has less influence

The first result of the observational study was expected based on the specialist literature in phases in which the subjects laughed frequently, stressful events were associated with more minor symptoms of subjective stress. However, the second finding was unexpected. When it came to the interplay between stressful events and intensity of laughter (strong, medium or weak), there was no statistical correlation with stress symptoms. "This could be because people are better at estimating the frequency of their laughter, rather than its intensity, over the last few hours," as per the research team.

Dementia

People who feel dizzy when they stand up are at higher risk of developing dementia: Study (New Kerala: 2020810)

<https://www.newkerala.com/news/2020/140727.htm>

People who get a feeling of dizziness when they stand up maybe at an increased risk of developing dementia, according to a recent study.

The study has been published in *Neurology*, the medical journal of the American Academy of Neurology.

The condition called orthostatic hypotension occurs when people experience a sudden drop in blood pressure when they stand up.

The study found the link with dementia only in people who have a drop in their systolic blood pressure, not in people with only a drop in their diastolic blood pressure or their blood pressure overall.

Systolic is the first, or top, number in a blood pressure reading and systolic orthostatic hypotension was defined as a drop of at least 15 mmHg after standing from a sitting position.

"People's blood pressure when they move from sitting to standing should be monitored," said study author Laure Rouch, Pharm.D., Ph.D., of the University of California, San Francisco. "It's possible that controlling these blood pressure drops could be a promising way to help preserve people's thinking and memory skills as they age."

The study involved 2,131 people, who were an average age of 73 and did not have dementia when they enrolled. Their blood pressure readings were taken at the start of the study and then one, three and five years later. A total of 15 per cent had orthostatic hypotension, 9 per cent had systolic orthostatic hypotension and 6 per cent had diastolic orthostatic hypotension.

Over the next 12 years, the participants were evaluated to see if anyone developed dementia. A total of 462 people, or 22 per cent, did develop the disease.

The people with systolic orthostatic hypotension were nearly 40 per cent more likely to develop dementia than those who did not have the condition. Fifty of the 192 with systolic orthostatic hypotension, or 26 per cent, developed dementia, compared to 412 of the 1,939 people without it, or 21 per cent.

When researchers adjusted for other factors that could affect dementia risk, such as diabetes, smoking and alcohol use, those with systolic orthostatic hypotension were 37 per cent more likely to develop dementia.

The researchers also found that people whose sitting-to-standing systolic blood pressure readings changed the most from visit-to-visit were more likely to develop dementia years later than people whose readings were more stable.

The people were divided into three groups based on how much their readings changed over time. A total of 24 per cent of people in the group with the most fluctuation in systolic readings later developed dementia, compared to 19 per cent of the people in the group with the least fluctuation.

When researchers adjusted for other factors affecting dementia risk, those in the highest group were 35 per cent more likely to develop dementia than those in the lowest group.

Rouch noted that the study is observational and does not show cause and effect. It only shows an association between blood pressure readings and the development of dementia. Another

limitation of the study was that the diagnosis of dementia was made without a distinction between Alzheimer's disease and vascular dementia.

People who feel dizzy when they stand up are at higher risk of developing dementia: Study Recommend This Article:

Vitamins,

Experts call for vitamins, minerals rich diet to fight against Covid-19(New Kerala: 2020810)

<https://www.newkerala.com/news/2020/140597.htm>

During a session held at the Associated Chambers of Commerce and Industry of India (ASSOCHAM), the health experts stressed the need for inclusion of vitamins and minerals in daily diet to build immunity for the battle against the COVID-19.

The present pandemic has brought the focus back on the role of vitamins as part of nutrition going beyond popular proteins and carbohydrates, they said on Saturday.

The experts weighed in that traditional Indian foods and natural herbs are a potent combination to avert threat from the deadly virus.

"There are several foods which are rich in natural minerals and nutrients, but we destroy their nutritional value in the course of our cooking and consumption practices. Wheat, which in its original form is Dalia, it has important minerals like phosphorus. Still, in our strange wisdom we powder it into a refined maida which is nothing but starch and increases weight and risk of diabetes," said Dr Shikha Sharma, founder and managing director of Dr Shikha's NutriHealth.

Dr Sharma named traditional food items and Ayurvedic herbs that can increase immunity level in the body.

"Barley, Channa, Sattu, seeds - pumpkin, sunflower, chia and flax among others that can be included in diets for a nutrition boost across all age groups. Ashwagandha and Giloy are potent herbs that can be given to both seniors and children. They purify the blood, build the body's immunity, reduce stress and keep intact, healthy pH level in the body," she added.

The session was held while concluding the second edition of the 'Illness to Wellness' series themed 'Building immunity through nutritious food during COVID-19' by ASSOCHAM.

The experts also dismissed the need for a protein or carbohydrate-rich diet, instead advocated for a wholesome, balanced diet especially in times of Corona.

"The beauty of Indian traditions during COVID times is that we need the support of this amazing knowledge of Indian Ayurveda and traditions to beat it," Dr Sharma said.

The coronavirus has individually turned fatal for individuals with existing comorbidities, for such cases, Dr Sharma emphasised that the first course of action needs to address the health issues through long-term preventive measures such as exercising, avoiding sugar and a maintaining a balanced diet.

Meanwhile, Sangeeta Narayan, nutrition educator and wellness expert, commenting on the impact of proper diet on the mental health said, "Stress plays an essential part in mental health considering the current times. With everything changing, we have to be adaptive. The first and foremost thing is to have a proper 6-8 hour sleep, plan your day in advance, doing all the chores can be overwhelming so allocate tasks for each day whether living with a family or alone. Add fruits or food items rich in Vitamin C. They act as a stress buster and immunity booster. Having proper meals is important, especially a nutritious and nourishing breakfast. Exercising also plays a vital role in managing stress and keeping the mind clear."

Besides, the experts also commented on other aspects which have been impacted after the onset of COVID-19 pandemic.

Anil Rajput, Chairman, ASSOCHAM CSR Council, weighing in on the economic and personal effect of coronavirus, said, "COVID-19 has had a destabilising effect on almost all walks of life for almost five months now. Right now, from nations to societies to economies to health of individuals, it has been an extremely stressful period for all. It has forced on us an unprecedented situation. One has taken quite a bit of time for us to understand the magnitude and painful reality of how slow the recovery is likely to be. It is the individual who has been at the centre of all-round anxiety and insecurity be at economic or personal health front."

COVID Infection (Hindustan: 2020810)

https://epaper.livehindustan.com/imageview_244174_56987622_4_1_10-08-2020_0_i_1_sf.html

चिंता: विश्व में संक्रमितों की संख्या दो करोड़ के करीब

वाशिंगटन | एजेसी

वैश्विक महामारी कोविड-19 का प्रकोप लगातार तेजी से बढ़ रहा है। वैश्विक स्तर पर कोरोना संक्रमण के कुल मामलों की संख्या रविवार को दो करोड़ के करीब पहुंच गई।

दुनियाभर में कोरोना संक्रमण के मामलों की निगरानी करने वाली वेबसाइट वर्ल्डोमीटर के अनुसार, वैश्विक स्तर पर पिछले 24 घंटे में करीब तीन लाख नए मामले आने के साथ ही रविवार को संक्रमण के कुल मामलों की संख्या 1.99 करोड़ पर पहुंच गई है। वहीं, 5,612 और लोगों के दम तोड़ने से मृतकों की कुल संख्या 7 लाख 31 हजार के पार हो गई है।

1.27 करोड़ मरीज स्वस्थ हुए : दुनियाभर में अब तक 1.27 करोड़ मरीज स्वस्थ भी हुए हैं। बीते दो दिन से लगातार वैश्विक स्तर पर 2.50 लाख से ज्यादा कोरोना संक्रमण के नए मामले सामने आ रहे हैं। मालूम हो कि इससे पहले शनिवार को 2,62,540 और इससे पहले शुक्रवार को 2,83,009 लोग नए संक्रमित मरीज पाए गए थे।

देश में चौथे दिन भी 60 हजार से ज्यादा मामले

देश में कोरोना के लगातार चौथे दिन 60 हजार से ज्यादा मामले सामने आए। एक दिन में रिकॉर्ड 64 हजार 399 नए मामले आने के साथ ही रविवार को कुल मामलों ने 21 लाख का आंकड़ा पार कर लिया, जबकि 861 और लोगों की मौत से मृतकों की संख्या 43 हजार 379 हो गई।

➤ रिकॉर्ड केस पेज 13

एम्स में केवल 16 लोगों को टीका दिया

आईसीएमआर और भारत बायोटेक के कोविड-19 टीके के परीक्षण के लिए पहले चरण में एम्स में सिर्फ 16 वॉलंटियर को ही वैक्सीन दी गई, जबकि 100 लोगों को टीका दिया जाना था। पहले चरण का ट्रायल का लक्ष्य पूरा हो गया। हालांकि, इसमें शामिल लोगों को वैक्सीन की अभी दूसरी डोज देकर परीक्षण जारी रहेगा। ➤ परीक्षण जारी पेज 03

Health Care Services (Hindustan 2020810)

https://epaper.livehindustan.com/imageview_244176_56559538_4_1_10-08-2020_3_i_1_sf.html

सभी बेड पर ऑक्सीजन की सुविधा, डेढ़ माह में 600 बेड होगा

सुविधा : 200 बेड के साथ अंबेडकर अस्पताल शुरू

नई दिल्ली | वरिष्ठ संवाददाता

अंबेडकरनगर में अस्पताल का इंतजार रविवार को खत्म हो गया। मुख्यमंत्री अरविंद केजरीवाल ने रविवार को 200 बेड के साथ अंबेडकर अस्पताल की शुरुआत की। इसके सभी बेड पर ऑक्सीजन की सुविधा उपलब्ध है। मुख्यमंत्री ने कहा कि आगामी डेढ़ महीने में इस अस्पताल में 600 बेड शुरू कर दिए जाएंगे।

केजरीवाल ने कहा कि इस इलाके में और आसपास के कई विधानसभा क्षेत्रों में एक भी बड़ा अस्पताल नहीं था। इस अस्पताल पर 2013 में काम शुरू किया गया था।

मुझे खुशी है कि कई वर्षों के बाद अब यह अस्पताल शुरू होने जा रहा है। इसके 200 बेड शुरू किए जा रहे हैं, बाकी पूरा अस्पताल अपने 600 बेड और आईसीयू के साथ आगामी एक-डेढ़ महीने में शुरू हो जाएगा। अभी जो 200 बेड शुरू किए जा रहे हैं, वह



दिल्ली स्थित अंबेडकर अस्पताल का रविवार को मुख्यमंत्री अरविंद केजरीवाल ने उद्घाटन किया। स्वास्थ्य मंत्री सत्येंद्र जैन भी इस मौके पर मौजूद रहे। • एजेंसी

कोरोना मरीजों के इलाज के लिए प्रयोग किए जाएंगे।

इस दौरान मुख्यमंत्री ने अस्पताल के वार्ड का दौरा भी किया। वहां मौजूद इंजीनियर्स और डॉक्टरों को अस्पताल को तय समय के अंदर शुरू करने के लिए बधाई भी दी। इस मौके पर स्वास्थ्य मंत्री सत्येंद्र जैन के अलावा, स्थानीय विधायक और स्वास्थ्य विभाग के अधिकारी मौजूद रहे।

केजरीवाल बोले, दिल्ली में कोरोना नियंत्रित

केजरीवाल ने कहा कि दिल्ली के अंदर कोरोना की स्थिति नियंत्रित है। सभी मानकों पर स्थितियां ठीक हैं। मरीजों के ठीक होने की दर लगातार बढ़ती जा रही है। संक्रमण दर घट रही है। मौतें भी कम हो रही हैं। अस्पतालों में मरीजों की संख्या कम हुई है।