



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Monday 20220404

Healthy food choices

10-year-old dietary guidelines for Indians being revised to encourage healthy food choices

Existing 15 guidelines will undergo a thorough revision and an important addition will be made for using food label information to make healthy food choices I (The Tribune:20220404)

<https://www.tribuneindia.com/news/nation/10-year-old-dietary-guidelines-for-indians-being-revised-to-encourage-healthy-food-choices-383269>

10-year-old dietary guidelines for Indians being revised to encourage healthy food choices
Photo for representation. — iStock



The dietary guidelines for Indians last released by the ICMR's National Institute of Nutrition in 2011 are being revised to promote healthy diets and lifestyles, the NIN director said on Sunday.

The existing 15 guidelines will undergo a thorough revision and an important addition will be made for using food label information to make healthy food choices.

The guidelines are being revised in the light of the recently revised food composition data of commonly consumed foods across the country and the revised nutrient requirements for Indians, ICMR-NIN director Hemalatha R said.

"The 16th guideline will be: using the food label information to make healthy food choices and to keep away from unhealthy foods. This will deal with easy tips to read and understand the food label information when buying pre-packaged food," said Dr SubbaRao M Gavaravarapu, a senior scientist at NIN.

Also, the previous guidelines were more nutrient oriented and the recommendations were related to the amounts of nutrients required to be consumed to maintain healthy life.

The current version will provide a food-based approach with clear information on different food groups to be included in the daily diet by people of different age groups, genders and activity levels.

“These will be represented in easily understandable ‘My Plate For The Day’ format,” Dr Hemalatha said.

“The new guidelines will provide information in a simplified way on measures to be taken to ensure appropriate infant and young child feeding practices, nutrition during pregnancy and lactation, importance of nutrition and physical activity during adolescence in both boys and girls, safe cooking practices and healthy consumption of fat, salt and sugar among others” said Dr P Uday Kumar, a senior scientist and member secretary of the committee on dietary guidelines.

The guidelines on nutrition for the elderly is also being revised, Dr SubbaRao stated.

The revised guidelines are likely to be released in three-four months.

Once the draft guidelines are ready and approved by an expert committee of the NIN, these will be put in the public domain for feedback, officials said.

Once finalised, it will be released for public dissemination through wide-ranging activities, including stakeholder meetings, health worker workshops, school-based programmes involving different academic institutions, policy bodies, implementing agencies, health functionaries and the media, Dr Hemalatha said.

Sleeping

Sleeping with even low light is harmful for health: Study According to researchers at Northwestern University in the US, even dim light can harm cardiovascular function during sleep and increase insulin resistance the following morning (The Tribune:20220404)

<https://www.tribuneindia.com/news/health/sleeping-with-even-low-light-is-harmful-for-health-study-383261>

Sleeping with even low light is harmful for health: Study
Photo for representational purpose only.

Close the blinds, draw the curtains and turn off all the lights before bed because exposure to even moderate ambient lighting during night-time sleep can harm your health.

According to researchers at Northwestern University in the US, even dim light can harm cardiovascular function during sleep and increase insulin resistance the following morning.

"The results from this study demonstrate that just a single night of exposure to moderate room lighting during sleep can impair glucose and cardiovascular regulation, which are risk factors

for heart disease, diabetes and metabolic syndrome," said Dr. Phyllis Zee, chief of sleep medicine at the University's Feinberg School of Medicine.

"It's important for people to avoid or minimise the amount of light exposure during sleep," Zee said.

The study, published in the journal PNAS, tested the effect of sleeping with 100 lux (moderate light) compared to 3 lux (dim light) in participants over a single night.

The investigators discovered that moderate light exposure caused the body to go into a higher alert state. In this state, the heart rate increases as well as the force with which the heart contracts and the rate of how fast the blood is conducted to your blood vessels for oxygenated blood flow.

"Even though you are asleep, your autonomic nervous system is activated. That's bad. Usually, your heart rate together with other cardiovascular parameters are lower at night and higher during the day," said Dr. Daniela Grimaldi, research assistant professor of neurology at Northwestern.

Further, the investigators found insulin resistance occurred the morning after people slept in a light room. Insulin resistance is when cells in your muscles, fat and liver do not respond well to insulin and can't use glucose from your blood for energy. To make up for it, your pancreas makes more insulin. Over time, your blood sugar goes up.

"In addition to sleep, nutrition and exercise, light exposure during the daytime is an important factor for health, but during the night we show that even modest intensity of light can impair measures of heart and endocrine health," Zee said.

Irregular heart rhythm

**Researchers find cause of irregular heart rhythm in Covid patients
Arrhythmias including too-quick and too-slow heart rhythms have been
noted among many patients with Covid infection (The Tribune:20220404)**

<https://www.tribuneindia.com/news/health/researchers-find-cause-of-irregular-heart-rhythm-in-covid-patients-383214>

Researchers find cause of irregular heart rhythm in Covid patients
Photo for representation only. Source: iStock.

The SARS-CoV-2, the virus causing Covid-19, can infect cells of the heart's natural pacemaker that maintain the rhythmic beat, setting off a self-destruction process within the cells, according to a pre-clinical study.

The findings offer a possible explanation for the heart arrhythmias that are commonly observed in patients with Covid infection, said researchers at Weill Cornell Medicine, New York-Presbyterian and NYU Grossman School of Medicine.

In the study reported in the journal *Circulation Research*, the team used an animal model as well as human stem cell-derived pacemaker cells to show that Covid can readily infect pacemaker cells and trigger a process called ferroptosis, in which the cells self-destruct but also produce reactive oxygen molecules that can impact nearby cells.

"This is a surprising and apparently unique vulnerability of these cells - we looked at a variety of other human cell types that can be infected by SARS-CoV-2, including even heart muscle cells, but found signs of ferroptosis only in the pacemaker cells," said Shuibing Chen, Professor at Weill.

Arrhythmias including too-quick (tachycardia) and too-slow (bradycardia) heart rhythms have been noted among many Covid patients, and multiple studies have linked these abnormal rhythms to worse Covid outcomes. How SARS-CoV-2 infection could cause such arrhythmias has been unclear, though.

In the new study, the researchers, examined golden hamsters - one of the only lab animals that reliably develops Covid-like signs from SARS-CoV-2 infection - and found evidence that following nasal exposure, the virus can infect the cells of the natural cardiac pacemaker unit, known as the sinoatrial node.

The team then used advanced stem cell techniques to induce human embryonic stem cells to mature into cells closely resembling sinoatrial node cells.

They found that these induced human pacemaker cells express the receptor ACE2 and other factors SARS-CoV-2 uses to get into cells and are readily infected by SARS-CoV-2. The researchers also observed large increases in inflammatory immune gene activity in the infected cells.

Further, they found that the pacemaker cells, in response to the stress of infection, showed clear signs of a cellular self-destruct process called ferroptosis, which involves accumulation of iron and the runaway production of cell-destroying reactive oxygen molecules.

Although, Covid patients could be treated with ferroptosis inhibitors specifically to protect sinoatrial node cells, antiviral drugs that block the effects of SARS-CoV-2 infection in all cell types would be preferable, the researchers said. IANS

Neurological complications

Study reveals Covid's lingering impacts on brain

Neurological complications are often among the first symptoms of SARS-CoV-2 infection and can be most severe and persistent (The Tribune:20220404)

<https://www.tribuneindia.com/news/health/study-reveals-covids-lingering-impacts-on-brain-383017>

Study reveals Covid's lingering impacts on brain
Photo for representational purpose only. iStock

Covid-19 patients commonly report having headaches, confusion and other neurological symptoms but doctors do not fully understand how the disease targets the brain during infection.

And now, researchers have found severe brain inflammation and injury consistent with reduced blood flow or oxygen to the brain, including neuron damage and death.

The findings, published in the journal Nature Communications, is said to be the first comprehensive assessment of neuropathology associated with SARS-CoV-2 infection in a nonhuman primate model.

The study also found small bleeds in the brain. Surprisingly, these findings were present in subjects that did not experience severe respiratory disease from the virus.

“Because the subjects didn’t experience significant respiratory symptoms, no one expected them to have the severity of disease that we found in the brain,” said lead investigator Tracy Fischer from Tulane University in the US.

“But the findings were distinct and profound, and undeniably a result of the infection,” Fischer added.

The researchers said that the findings are also consistent with autopsy studies of people who have died of Covid-19, suggesting that nonhuman primates may serve as an appropriate model, or proxy, for how humans experience the disease.

Neurological complications are often among the first symptoms of SARS-CoV-2 infection and can be the most severe and persistent. They also affect people indiscriminately—all ages, with and without comorbidities, and with varying degrees of disease severity. IANS

New Omicron strain XE

New Omicron strain XE more transmissible than previous strains of Covid-19: WHO

New strain was first detected in the UK (The Tribune:20220404)

<https://www.tribuneindia.com/news/world/new-omicron-strain-xe-more-transmissible-than-previous-strains-of-covid-19-who-383005>

New Omicron strain XE more transmissible than previous strains of Covid-19: WHO
Photo for representational purpose only. Reuters file

A new strain of the COVID-19 Omicron variant, first detected in the UK, appears to be more transmissible than previous strains of the coronavirus, the WHO has said, asserting that COVID-19 remains a public health emergency of international concern and warning that it is “too early” to reduce the quality of surveillance.

The World Health Organization (WHO) said in its latest update that the XE recombinant (BA.1-BA.2) was first detected in the UK on January 19 and more than 600 sequences have been reported and confirmed since then.

“Early-day estimates indicate a community growth rate advantage of 10% as compared to BA.2. However, this finding requires further confirmation,” it said.

The Geneva-based UN health agency said that XE belongs to the Omicron variant until significant differences in transmission and disease characteristics, including severity, may be reported.

“WHO continues to closely monitor and assess the public health risk associated with recombinant variants, alongside other SARS-CoV-2 variants, and will provide updates as further evidence becomes available,” it said.

The COVID-19 Weekly Epidemiological Update, released on Wednesday, had said that deaths from COVID-19 last week increased by 43 per cent, driven by factors including retrospective adjustments reported from India in the South-East Asia Region.

Between the end of January and early March 2022, there was a decreasing trend in the number of new COVID-19 cases, which was followed by two consecutive weeks of increases in cases, the WHO said.

During the week of March 21 to 27 this year, the number of new cases declined again with a 14 per cent decrease as compared with the previous week.

“On the other hand, during the same period, the number of new weekly deaths increased by 43 per cent, likely driven by changes in the definition of COVID-19 deaths in some countries in

the Region of the Americas (Chile and the United States of America) and by retrospective adjustments reported from India in the South-East Asia Region,” the update said.

Across the six WHO regions, over 10 million new cases and over 45,000 fresh deaths were reported.

All regions reported decreasing trends in the number of new weekly cases and four regions reported a decreasing trend in new weekly deaths. As of March 27, over 479 million confirmed cases and over 6 million deaths have been reported globally.

The update said that at the country level, the highest number of new weekly cases were reported from South Korea (2,442,195 new cases; -13 per cent), Germany (1,576,261 new cases; +2 per cent), Vietnam (1,127,716 new cases; -40 per cent), France (845,119 new cases; +45 per cent), and Italy (503,932 new cases; +6 per cent).

The highest number of new weekly deaths were reported from Chile (11,858 new deaths; +1710 per cent), the United States of America (5,367 new deaths; +83 per cent), India (4,525 new deaths; +619 per cent), Russia (2,859 new deaths; -22 per cent), and South Korea (2,471 new deaths; +22 per cent).

The South-East Asia Region reported over 232,000 new weekly cases, a 14 per cent decline as compared with the previous week, continuing the decreasing trend observed since mid-January 2022.

However, Sri Lanka reported an increase in new weekly cases of 25 per cent (2693 vs 2156 new cases).

The highest numbers of new cases were reported from Thailand (175,116 new cases; +4 per cent increase), Indonesia (36,470 new cases; -49 per cent), and India (11,612 new cases; -31 per cent).

The region reported just over 6000 new weekly deaths, representing a 116 per cent increase as compared to the previous week. The highest numbers of new deaths were reported from India (4525 new deaths; +619 per cent) due to retrospective adjustments in some states, followed by Indonesia (932 new deaths; -41 per cent), and Thailand (553 new deaths; +3 per cent).

The WHO said it is concerned over the recent significant reduction in SARS-CoV-2 testing by several Member States.

Data are becoming progressively less representative, less timely, and less robust. “This inhibits our collective ability to track where the virus is, how it is spreading and how it is evolving; information and analyses that remain critical to effectively end the acute phase of the pandemic,” it said.

Decreases in testing, unless done judiciously as part of a strategy aimed at maintaining robust surveillance where it is most impactful, may affect the capacity of countries to identify cases and enable their timely treatment or isolation, and implement other necessary control measures, with the consequent risk of increased spread of SARS-CoV-2, it said.

“This may translate in an increase in hospitalisations and deaths, and significant strains on healthcare systems, particularly in areas where public health and social measures have been lifted and where vaccination coverage against COVID-19 is low. Furthermore, reduced testing impacts the capacity of countries to detect emerging variants early, ultimately impairing response efforts,” it said.

The UN agency said COVID-19 remains a public health emergency of international concern, asserting that it is “too early” to reduce the quality of surveillance.

“The uncertainty around the characteristics of emerging variants limits our ability to confidently predict the behaviour of this disease, as the evolution rate and risk of emerging variants are still high, which could undermine prevention and mitigation measures.

“Until we reach the end of the acute phase of the pandemic, countries must maintain sufficient epidemiologic surveillance to inform evidence-based operational decision-making on crucial parameters, including vaccination strategies, vaccine composition, use of therapeutics, and tailored and appropriate public health and social measures,” it said.

Insect-borne viruses like Zika, dengue

Next pandemic could be caused by insect-borne viruses like Zika, dengue: WHO
UN health agency says that international action is essential, given the 'frequency and magnitude of outbreaks' of arboviruses (The Tribune:20220404)

<https://www.tribuneindia.com/news/health/next-pandemic-could-be-caused-by-insect-borne-viruses-like-zika-dengue-who-382969>

Next pandemic could be caused by insect-borne viruses like Zika, dengue: WHO
Photo for representation only.

The World Health Organisation (WHO) has warned that the next pandemic could be triggered by insect-borne pathogens, including Zika and dengue.

Arthropod-Borne viruses (Arboviruses) such as dengue, yellow fever, chikungunya and zika viruses are all current public health threats in tropical and sub-tropical areas where approximately 3.9 billion people live.

The frequency and magnitude of outbreaks of these arboviruses, particularly those transmitted by Aedes mosquitoes, are increasing globally, fuelled by the convergence of ecologic, economic, and social factors.

According to the WHO, dengue fever infects 390 million people in 130 countries annually where it is endemic, while Zika virus that caused an outbreak in 2016 when it was found to cause birth defects such as microencephaly. It has been detected in at least 89 countries.

Yellow fever poses a high risk of outbreaks in 40 countries and causes jaundice and severe haemorrhagic fever and death, as dengue. Chikungunya, though less known, is present in 115 countries and causes severe and joint-disabling arthritis.

The WHO said signs are mounting that the risk these diseases pose "is increasing", The Telegraph reported.

Experts are scrambling to develop strategies to stop the next outbreak escalating into a catastrophe. Targeting arboviruses is top of the list.

"We have been through two years of Covid-19 pandemic and we have learned the hard way what [it costs] not to be prepared for high impact events," Dr Sylvie Briand, director of the global infectious hazard preparedness team at the WHO, was quoted as saying.

"We had [a] signal with SARS in 2003 and the experience of the influenza 2009 pandemic - but there were still gaps in our preparedness," she added. "The next pandemic could, very likely, be due to a new arbovirus. And we also have some signals that the risk is increasing." The experts were speaking at the launch of the WHO's new Global Arbovirus Initiative - an integrated strategic plan to concentrate resources on risk monitoring, pandemic prevention, preparedness, detection and response.

"There is an urgent need to re-evaluate the tools at hand and how these can be used across diseases to ensure efficient response, evidence-based practice, equipped and trained personnel and engagement of communities," said Dr Mike Ryan, head of the World Health Organisation's Emergency Programme.

The UN health agency said that international action is essential, given the "frequency and magnitude of outbreaks" of arboviruses. Their reach is growing, too, the WHO warned, fuelled by climate change, population growth and increasing urbanisation.

"As urban populations continue to expand, the threat of these diseases grows more alarming," Dr Ren Minghui, assistant director-general of the WHO, was quoted as saying.

"As close living arrangements amplify the spread of this virus, we must address these challenges now to prevent catastrophic impact on health systems in the future." IANS

keto diet

How much weight can you expect to lose on the keto diet?

Initially, it's normal to lose up to 2 to 3 kilos of weight in the first week of a ketogenic diet, since it can suppress appetite (The Indian Express:20220404)

<https://indianexpress.com/article/lifestyle/fitness/weight-loss-keto-diet-dos-donts-7847438/>

keto diet, what is keto diet, weight loss in keto diet, can keto diet help lose weight, how much weight can be lost in keto diet, following keto diet, keto diet and weight loss, indian express news As long as you keep up, you should be able to lose as much as 10 kg of weight within three months. (Photo: Getty/Thinkstock)

When people follow a diet, any diet, they mostly look to lose weight. Over the years, the keto diet has become quite popular. If you are following it already, or are looking to get on it soon, fitness expert Mukul Nagpaul, the founder of Pmf Training and Fit India Movement ambassador, says you can lose up to 20 kg on this diet plan over 6 months, “which is healthy”.

ALSO READ |What is the best time to eat fruits? Here’s what an expert says

“Main thing is, it depends on your current weight, lifestyle, activity, etc., that determines the right number which will still vary if you compare it with others,” he says.

The expert breaks it down for you; read on.

First week of keto

Initially, it’s normal to lose up to 2 to 3 kilos of weight in the first week of a ketogenic diet, since it can suppress appetite. It is often referred to as a low-carb high-fat diet. One of the basic principles is that you are restricting the number of carbohydrates in order for your body to run on more fat stores rather than glucose. This means, when you start with a keto diet, you feel tired and may even suffer mild headaches, which is called ‘keto flu’.

ALSO READ |Fitness alert: Try these three advanced-level effective variations of push-ups

First month of keto

By this time, you’ll start to feel the impact of the keto diet. Water weight loss stops, followed by fat loss. You may be losing inches from your waist but the number on the scale isn’t dropping.

It’s important to keep in mind that a typical weighing scale doesn’t paint an accurate picture of fat loss. You may be gaining muscle at the same time, which is a good thing, especially if you’re lifting weights. Measure your body fat percentage instead.

keto diet, what is keto diet, weight loss in keto diet, can keto diet help lose weight, how much weight can be lost in keto diet, following keto diet, keto diet and weight loss, indian express news A typical weighing scale doesn’t paint an accurate picture of fat loss. (Photo: Getty/Thinkstock)

When eating a ketogenic diet for fitness, it’s vital to remain aware of the signs that your body is adjusting to the dietary change. This can cause you to stall during weight loss results and may even increase your calorie intake by making substitutions for high-carb snacks with high-fat ones that don’t fill you up the same way.

ALSO READ |Weight loss alert: Anshula Kapoor sets massive fitness goals with her inspiring transformation

After three months of keto

As long as you keep up, you should be able to lose as much as 10 kg of weight within three months and attain long-term weight loss. Of course, this may vary per individual. Check your physical activity, stress levels, and other habits.

“If you have medical issues, it is advisable to contact your physician before starting with keto diet,” Nagpaul warns.

DELHI NEWS

1Delhi court orders FIR against 3 police officers for ‘shooting suspect in the knee’

2Delhi weather today: Heatwave to persist, strong winds likely

3For students of KG to class 2 in Delhi government schools, focus on tracking developmental milestones

vitamin C-rich fruits, zinc supplements

Survey shows high consumption of vitamin C-rich fruits, zinc supplements during Covid

The concept of 'immunity-boosting foods' as a preventive strategy to fight COVID-19 infection gained a lot of traction during the pandemic (The Indian Express:20220404)

<https://indianexpress.com/article/lifestyle/health/survey-shows-high-consumption-of-vitamin-c-rich-fruits-zinc-supplements-during-covid-7851059/>

National Institute of Nutrition survey, vitamin C-rich fruits, vitamin C, zinc supplements, boost immunity, Covid pandemic, misinformation, indian express newsAn online survey by the National Institute of Nutrition has reported high consumption of vitamin C-rich fruits as well as vitamin C and zinc supplements by adult Indians. (Photo: Getty/Thinkstock)

An online survey by the ICMR’s National Institute of Nutrition has reported high consumption of vitamin C-rich fruits as well as vitamin C and zinc supplements by adult Indians to boost immunity during the second wave of COVID-19 upon their exposure to (mis)information on social media.

Traditional Indian spices such as ginger and garlic were used by 62.9 per cent and 50.9 per cent of the respondents respectively.

ALSO READ |Ultra-processed foods are trashing our health — and the planet

Most of the total 572 respondents reported to have relied on social media for gathering COVID-19 associated tips for boosting immunity. However, those with a history of coronavirus infection reported to rely more on doctors and health professionals for information, the study found.

The soon-to-be-published study — “Impact of COVID-19 Infodemic on the food and nutrition-related perception, practices and reliability on the source of information among Indian internet users” — highlights the need for media and health literacy to advocate the use of health information cautiously, said Dr. Hemalatha R, Director of National Institute of Nutrition.

“The uncontrolled spread of (mis)information, news and propaganda related to COVID-19 created an ‘infodemic’ leading to panic and unscientific practices among the people. With the largest number of internet users in the world, India has witnessed a steep rise in the number of people seeking information on social media related to COVID-19, which reached a staggering 22.3 million by March, 2020,” said Dr SubbaRao M Gavaravarapu, senior scientist and the lead investigator of the study.

ALSO READ |What is the best time to eat fruits? Here’s what an expert says

“This study aimed to evaluate the trend of COVID-19 associated food and nutrition news search by Indian internet users between January 27, 2020 to June 30, 2021 (time period between the first detected COVID-19 case and the end of the second wave in India) and its impact on their perceptions and practices,” SubbaRao said.

The association between the change in relative search volume (RSV) on Google Trends of 34 popularly searched keywords classified by the researchers under five different categories — ‘Immunity’, ‘Eating behaviour’, ‘Food safety’, ‘Food scares and concerns’ and ‘Covid scare’ — showed a steep rise in search for immunity boosters, vitamin supplement brands, “ayush kadha” (ayurvedic decoction) during the first wave in April- August 2020.

With a brief period of decline in the search trend, it again increased correspondingly with the growing number of positive cases during the second wave in India.

The concept of ‘immunity-boosting foods’ as a preventive strategy to fight COVID-19 infection gained a lot of traction during the pandemic.

ALSO READ |What happens when you consume too much protein?

“Out of the commonly searched immunity boosting agents, most respondents (71.9 per cent) reported to have increased their consumption of vitamin C-rich foods (citrus fruits, guava, amla, etc.) as immunity boosters during the study period. A large proportion of respondents also reported consumption of nutraceuticals supplements such as vitamin C supplements (68.2 per cent), zinc supplements (61.4 per cent) to boost immunity.

“Traditional Indian spices like ginger and garlic were used by 62.9 per cent and 50.9 per cent respondents respectively. Although ‘kadha/kashayam’ (decoction of medicinal herbs) and ‘chawanprash’ (an ayurvedic health mixture made of various herbs and spices) were quite hyped, fewer participants reported to have consumed them (28.8 per cent and 57.5 per cent respectively),” SubbaRao stated.

ALSO READ |The Pandemic Dictionary: From Aarogya Setu to Zoom calls and all the new words in between

Dependence on homeopathy medicines for immunity boosting against COVID-19 was found to be the least at 28.1 per cent.

The study was conducted through a closed-ended questionnaire which was administered online to obtain cross-sectional information from active internet users in India regarding their

perceptions, practices and the reliability of the commonly propagated food related information with respect to COVID-19.

ALSO READ |Is regular consumption of mangoes associated with improved health? Here's what experts say

The participation of potential respondents was solicited through calls for participation issued via media releases, social media posts on the institute's website and instant messaging apps.

The survey form was made available on the official website and the links were shared on social media pages of ICMR-NIN between June 1 and July 31 last year.

Participants were asked to determine the changes incurred in their food safety practices, eating patterns during the COVID-19 period and about their knowledge, perception and perceived reliability on different sources of information: newspaper, television, social media, frontline health workers, health organisations, internet search or peer group.

New human challenge

A new human challenge study about Covid-19 reveals insights on how we get sick with the virus

Human challenge studies involve exposing participants to a virus or other pathogens in order to study its effects on the human body (The Indian Express:20220404)

<https://indianexpress.com/article/lifestyle/health/a-new-human-challenge-study-about-covid-19-reveals-insights-on-how-we-get-sick-7847484/>

covid 19 studyA worker takes a swab sample for a Covid-19 test at a mobile testing site in Beijing. (AP/File)

A new human challenge study published in the journal Nature Medicine recently revealed that it takes just a tiny virus-laden droplet to infect someone with Covid-19. Human challenge studies involve exposing participants to a virus or other pathogens in order to study its effects on the human body.

The study began in March 31 with 36 volunteers between the ages of 18 and 29 years, with no evidence of previous infection or vaccination. Participants were screened for comorbidities, being overweight, having reduced kidney or liver function, or having any heart, lung or blood problems — all considered risk factors for severe Covid-19 infection. Post the screening, written informed consent was also obtained from each participant.

The study was conducted in 10 phases. The first 10 infected volunteers were given the antiviral drug remdesivir to reduce their chances of progressing to severe disease. The volunteers were introduced to the virus via a tiny drop of fluid containing the originally detected strain of the virus through a long, thin tube inserted into their nose. They were also closely, medically

monitored for 24 hours a day at London's Royal Free Hospital's quarantine unit which had special airflow to keep the virus from escaping.

ALSO READ |Can common cold provide protection against Covid-19? Here's what a study says

The following were some of its findings:

*Eighteen (~53%) participants became infected, with viral load (VL) rising steeply and peaking at ~5 days after inoculation.

*Virus was first detected in the throat but rose to significantly higher levels in the nose

*Viable virus was recoverable from the nose up to ~10 days after inoculation, on average

*Mild-to-moderate symptoms were reported by 16 (89%) infected participants, beginning 2–4 days after inoculation, whereas two (11%) participants remained asymptomatic (no reportable symptoms).

*Anosmia (loss of sense of smell) or dysosmia (disordered smell perception) developed more slowly in 15 (83%) participants.

Hybrid immunity

Immunity following infection lasts up to 19 months (The Hindu:20220404)

<https://www.thehindu.com/sci-tech/science/immunity-following-infection-lasts-up-to-19-months/article65282790.ece>

Hybrid immunity after one and two doses of vaccine was associated with 94% and 90% lower risk of hospitalisation, respectively

A retrospective study undertaken in Sweden has once again found irrefutable evidence in support of vaccination even among people who have been previously infected. The study also found that people who have been infected and subsequently vaccinated with one or two doses of a vaccine, which is called

Science for All

Science for All | What is M2e? (The Hindu:20220404)

<https://www.thehindu.com/sci-tech/science/science-for-all-what-is-m2e/article65274076.ece>

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This article forms a part of the Science for All newsletter that takes the jargon out of science and puts the fun in! Subscribe now!

The M2 protein is considered to be a holy grail of designing a universal flu vaccine. The seasonal influenza strains mutate rapidly and new strains of the virus proliferate. This makes it very difficult to make a vaccine that can

Cells

How mitochondria adapted to living within cells (The Hindu:20220404)

<https://www.thehindu.com/sci-tech/how-mitochondria-adapted-to-living-within-cells/article65260518.ece>

Billions of years ago, a prokaryotic organism called archaea captured a bacterial endosymbiont. An organism that has been around from 2 billion years ago has given biologists from Centre for Cellular and Molecular Biology, Hyderabad (CCMB), a clue as to how mitochondria became an inseparable part of animal and plant cells. The researchers, led by Rajan Sankaranarayanan, identify two key transformations, one in the molecule known as DTD for short and another in the transfer-RNA (tRNA).

“Our lab works on a molecule called D-aminoacyl-tRNA deacylase (DTD). We observed some unexpected biochemistry of eukaryotic DTD that could be

Diabetic

First case of infection from diabetes medication in India (The Hindu:20220404)

<https://www.thehindu.com/news/national/after-us-india-confirms-cases-of-infection-from-diabetes-medication/article65286868.ece>

State drug controllers told to include warning for patients using SGLT2 inhibitors. After the U.S. and Canada, India too has admitted incidence of a rare but serious infection of the genitals and area around the genitals among Type-2 diabetes patients using sodium-glucose cotransporter-2 (SGLT2) inhibitors.

This serious rare infection, called necrotizing fasciitis of the perineum, is also referred to as Fournier's gangrene.

Covaxin

WHO pauses Covaxin supply via UN bodies (The Hindu:20220404)

<https://www.thehindu.com/sci-tech/health/who-suspends-covaxin-supply-to-un-agencies/article65286705.ece>

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We may remove hyperlinks within comments.

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SARS-CoV-2 variant

WHO records new recombinant SARS-CoV-2 variant (The Hindu:20220404)

<https://www.thehindu.com/sci-tech/health/who-records-new-recombinant-sars-cov-2-variant/article65284952.ece>

XE recombinant reported in the U.K.; a recombinant variant occurs when an individual is infected with two or more variants at the same time.

The World Health Organization (WHO) has flagged the emergence of a new variant of the SARS-CoV-2 virus, the XE recombinant, in the United Kingdom, and with a possibly higher rate of transmission.

Covid infection

Covid infection raised risk of heart problems more than vax: US CDC (New Kerala:20220404)

: The risk for cardiac complications was significantly higher after Covid-19 infection than after mRNA vaccination developed by Pfizer or Mode-> View it--> <https://www.newkerala.com/news/2022/49226.htm>

Pregnancy

Pregnant women exposed to excessive disinfectants more likely to have children with asthma: Study (New Kerala:20220404)

Think twice before using disinfectants. According to a recent study, the excessive use of disinfectants by pregnant w-> View it--> <https://www.newkerala.com/news/2022/49215.htm>

Cardiovascular disease

Avocados may lower risk of cardiovascular disease: Study (New Kerala:20220404)

Eating two servings of avocados a week was associated with a lower risk of cardiovascular disease, according to a recent study. ->> View it--> <https://www.newkerala.com/news/2022/49157.htm>

Autoimmune Diseases

Rising incidence of autoimmune diseases among women cause for major concern (New Kerala:20220404)

The prevalence of Autoimmune Diseases has increased many folds over the past decades. Autoimmune diseases are more common in females-> View it--> <https://www.newkerala.com/news/2022/49072.htm>